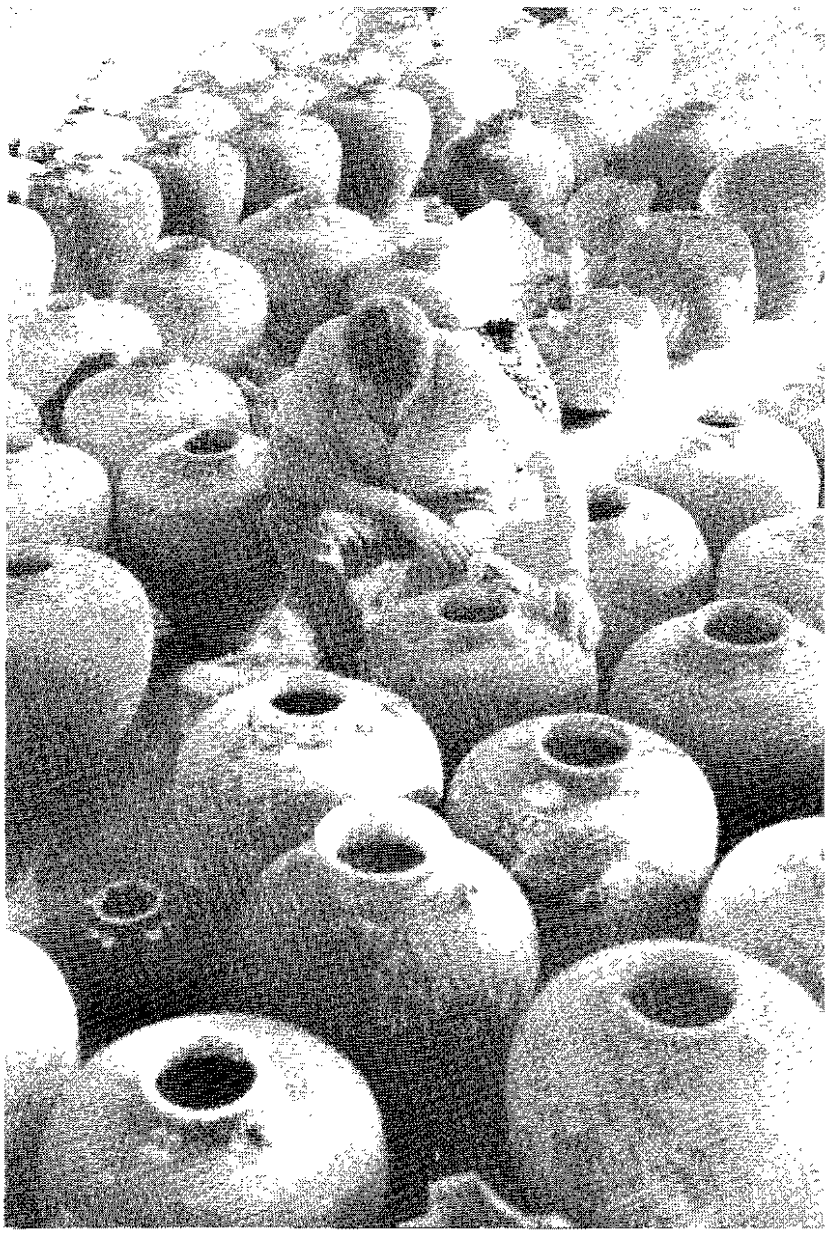

THE CERAMIC CARGO OF THE *CONCEPCION*

by

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INTRODUCTION

HISTORICAL BACKGROUND

Before attempting to assess the cargo of ceramics carried by the Spanish galleon *Nuestra Señora de la Concepción*, it is important to understand how trade was conducted in Southeast Asia during the seventeenth century, and more specifically, by what means and through which agents the Spanish obtained Chinese and Southeast Asian goods.

The history of the Spanish in the East is inextricably linked with that of Portuguese expansion in the Orient, the latter beginning at the end of the fifteenth century. The Portuguese had rounded the tip of Africa in 1488, opening the route to the Indian Ocean[1] and the Spice Islands beyond. Four years later, sailing under the Spanish flag, Columbus discovered land in the west which he and everybody else at the time believed to be the Indies, also known as the Spice Islands[2]. It became clear that, in order to avoid disputes between the two Iberian countries over the Spice Islands, it would be necessary to regulate territorial claims over the newly-discovered lands. The first agreement between Spain and Portugal was reached in 1493. A papal bull established a demarcation line drawn from pole to pole and running 100 leagues west of the Cape Verde Islands, thereby limiting the two countries' respective areas of influence: everything west of this line belonged to Spain and everything east of it belonged to Portugal. This was tantamount to a division of the world between these two countries to the exclusion of all other European powers.

However, the Portuguese were dissatisfied with this agreement because it did not give them enough room to maneuver in the Atlantic and, a year later, a new agreement was signed in Tordesillas. This treaty ratified a demarcation line moved 370 leagues west of the Cape Verde Islands.

During the following years Spain consolidated its conquests in the Americas, reaping the riches of Mexico and Peru. Meanwhile Portugal established its maritime empire in the Orient, with Goa as its capital and Malacca as its principal entrepot of Oriental goods, especially spices from the Moluccas and silk and porcelain from China.

Nevertheless, the Spanish did not abandon hope of gaining their share of the spice trade. In 1518 Magellan made a proposal to Charles V of Spain to find a route to the Spice Islands by sailing west round the new continent. This was received enthusiastically for it provided the opportunity to gain control of the spice trade without contravening the Treaty of Tordesillas.

Magellan's fleet sailed from Seville in 1519. After rounding the tip of South America through the strait that now bears his name and sailing across the Pacific, the fleet reached the Philippines in March 1521. Here Magellan met his death during a skirmish with a local tribe. However, his second-in-command, Sebastian del Cano, managed to complete the circumnavigation of the globe by crossing the Indian Ocean and sailing north along the West African coast, thus contravening the Treaty of Tordesillas. During the next two centuries no Spanish ship ever sailed along this route.

Before leaving Southeast Asia, del Cano took on a cargo of spices in the Moluccas. When it was sold in Spain in 1522, the profits which it yielded proved enough to cover the cost of the whole expedition. This success whetted Spanish appetite and the next seven years witnessed a verbal battle between the Spanish, who contended that the Moluccas belonged to them, and the Portuguese, who retorted that the Spanish were violating the Treaty of Tordesillas since the Spice Islands lay within Portuguese territory.

Yet the argument was not clear-cut. The measuring instruments of the day were not very accurate; and while the Treaty of Tordesillas stipulated that the demarcation line should be drawn 370 leagues west of the Cape Verde Islands, it did not specify whether the distance should be measured from the meridian of the archipelago or from the eastern or western tip of it. Furthermore, until the return of del Cano, the actual size of the earth was unknown and, since he was a Spaniard, the Portuguese believed that maps based on his measurements were deliberately inaccurate. Consequently the exact position of the eastern demarcation line remained unclear.

The matter was temporarily settled by the Treaty of Zaragoza signed in 1529. In exchange for 350,000 ducats paid by Portugal, Spain renounced its claims to the Moluccas and the demarcation line in the East was established 17° east of the Moluccas, thus including the Philippines in Portuguese territory. As it turned out, the Spanish were selling land that was not

theirs and the Portuguese were buying their own property.

However, the dispute over ownership of the Philippines continued until the eighteenth century[3]. In spite of the Treaty of Zaragoza, a few Spanish expeditions were sent to the Philippines, first by the Magellan route and later from Mexico across the Pacific. But all failed to find a westward route to Mexico because unfavorable winds persistently diverted the ships back to Southeast Asia.

It was not until 1565 that Andres de Urdaneta, a veteran of an earlier expedition, decided to sail farther north in the Pacific where he finally found favorable winds to carry his ships to the coast of California. From there it was easy to sail towards Acapulco. The Galleon Trade Route had finally been discovered!

In 1559 King Philip II ordered the Spanish to occupy the islands that were named after him. He issued two sets of instructions: the official instructions, meant to assuage the Portuguese, were that the Spanish could only sail in these waters in order to rescue fellow-countrymen stranded from previous expeditions and to bring the word of God to the natives. However, Philip's secret instructions to the Spanish were to find a suitable place to settle and to carry on trade to whatever extent possible.

In 1571 Miguel Lopez de Legazpi finally established a permanent settlement in Manila. This site was chosen because of its excellent harbor, its strategic location and, more importantly, because Chinese junks visited it regularly, thus ensuring a plentiful supply of silks, porcelain and other products from China. Next to spices, silk was the product most coveted by the Spanish.

Obviously the Portuguese were not happy with this state of affairs, but they were thinly spread in the East and the Philippines represented no more than a minor trade proposition compared with the key positions which they already controlled: Goa in India, the Moluccas and Malacca in Southeast Asia, Macao in China and Deshima in Japan. It was not considered worthwhile to dislodge the Spanish from their enclave: they would be allowed to remain in the archipelago of the Philippines so long as they ventured no further.

In 1580 Philip II of Spain became King of Portugal, thus uniting the Spanish and the Portuguese crowns. His policy in the East was characterized by a remarkable lack of continuity: at times sending specific orders to Manila to carry on trade with near-by countries, thus greatly angering his Portuguese subjects, at other times punctiliously reiterating the terms of the Treaty of Tordesillas and forbidding the Spanish from interfering in Portuguese territory. The latter stance may have been dictated by the arrival of the Dutch in the region in 1595. By the second decade of the seventeenth century the Dutch posed a serious threat to both Iberian parties and it was in their best interests to present a united front against the common enemy.

Analysis of Oriental trade patterns reveals that there were profound differences in the ways in which the Spanish and the Portuguese carried on their trade. Their respective commercial activities in the East were obviously shaped by the Treaty of Tordesillas: while the Portuguese controlled the Eastern seas and were at liberty to act as brokers and shippers through a network that extended from Africa to Japan, the Spanish were confined to a passive role in their sole possession of the Philippines; they were unable to buy the riches of the Orient at their source and had to rely on foreign merchants to bring Eastern products to Manila.

Another fundamental difference between the two countries was in the inability of the Portuguese to produce enough European commodities or money to exchange for Oriental goods, compared to the seemingly endless amount of silver which the Spanish received from their American colonies. Portugal, the smaller, poorer nation, produced nothing of interest for the sophisticated markets of the Orient nor did it have enough money to pay for Eastern goods. Consequently, the Portuguese were forced to act as carriers and brokers among Asian countries, thereby generating profits that allowed them to acquire the Oriental goods essential for their domestic markets. This required a tremendous effort on their part and entailed great risks[4].

By contrast, the Spanish in Manila only had to wait for the yearly galleon to arrive, loaded with silver pieces of eight minted in Mexico. Then they would exchange this silver for goods which, in most cases, were brought to their doorstep by Chinese, Portuguese and Japanese merchants. The amount of silver imported from America was such that in a very short time the Mexican pieces of eight became the most widely accepted and most common currency in Asia.

The ease with which fortunes were made in Manila encouraged a luxurious and futile lifestyle which brought about laziness and a lack of initiative among the *Manilenos*, a fact often commented upon by contemporary visitors and officials. Yet it should not be inferred that the

Spaniards were entirely idle: in 1606 they captured the Moluccan island of Tidore from the Dutch who, the previous year, had snatched it from the Portuguese. They managed to hold on to the tiny island, a large producer of cloves, until 1662.

Whereas the official policy directed towards having a foothold in the Spice Islands was implemented, contact with the rest of Southeast Asia, particularly with the mainland (Siam, Cambodia, Vietnam), was sporadic and for the most part left to soldiers of fortune.

One can conclude that the bulk of the merchandise that was shipped to New Spain from Manila had reached the Philippines through two main channels: the Portuguese and the Chinese.

Portuguese Trade

The Spanish were forbidden to trade directly with China, yet on one occasion they managed to acquire a foothold in Chinese territory. In 1598 a semiprivate expedition under Juan Zamudio was granted permission to settle on an island near Guangzhou (Canton) which the Spanish named *El Pinal*[5]; however the gain was short-lived. The relentless efforts of the Portuguese effectively prevented the Spanish from trading directly with China.

Portuguese efforts to prevent trade between the Spanish and the Chinese were manifold. Efforts aimed specifically at the Spanish took the form of verbal protests against any violation of the agreements then in force; and when verbal protests were not enough, guns were used. As for the Chinese, the Portuguese tried by all sorts of means to convince them that the Spanish could not and should not be trusted. There are several documents attesting to the fact that the Portuguese often succeeded in this goal, particularly when the Chinese were further discouraged from trading overseas by their own government or as a result of the threat presented by the Dutch or by pirates.

It is obvious that the Portuguese aimed at maintaining the monopoly of trade with the Philippines. During the early decades of the seventeenth century, Portuguese ships plied the route from Macao to the Philippines regularly, and in some years as many as ten *naos*[6] weighed anchor in the port of Manila. Schurz quotes Governor Fernando de Silva as saying in 1626: "If it were not for what has come from Macao, the ships for New Spain would have nothing to carry" (Schurz 1956, p. 132).

From 1630 onwards trade rights from Macao to the Philippines were contracted for a fixed period of time to a single trader who paid a special tax to Goa for this monopoly. Marco d'Avalo, who wrote an account of Macao in the year 1638, has this to say about the event: "it was ordained that nobody could sail to Japan or the Philippines without permission of this buyer, which brought him excessive profits" (Boxer 1984, p. 77).

In 1636 a royal decree was issued forbidding trade ventures between the Portuguese and the Spanish. However, this did not prevent merchandise from Macao being shipped to Manila. The Italian writer mentioned above, Marco d'Avalo, wrote in 1638 that: "As regards commerce; the citizens[7] go, according to the monsoons, to Manila (mostly Chinese) or to Japan (whither only Portuguese go), carrying their silk wares; white raw silk; cotton and hemp stuffe; china-ware, and all kinds of objects d'art; vermillion, quick-silver, zinc or *Tentago*[8], alum and several other sorts of metals and minerals. They leave Macau in April with three or four *navettas* or junks, in the southern monsoon, and usually return in October" (Boxer 1984, p. 76).

The Portuguese solved the problem of the embargo on trade with Manila by using Chinese associates, even though profits were thus considerably curtailed. Chinese goods shipped from Macao were acquired in Guangzhou where the Portuguese were allowed to attend the bi-annual trade fairs.

D'Avalo's account also gives us a detailed list of Chinese goods exported to the Philippines. Among them were porcelain and a number of products which may have been carried in large jars.

The trade monopoly given to a single merchant for a fixed number of years (and often for a single year only) did not apply to other countries in Southeast Asia. These countries were unrestricted territory for all sorts of entrepreneurs who often carried their goods directly to the Philippines, thus by-passing the embargo on trade between Macao and Manila.

Chinese Trade

The Chinese from Guangzhou formed only a small proportion of the Chinese merchants arriving yearly in Manila. In March, junks sailed from a number of ports all along the Guangdong, Fujian and Zhejiang coasts as far north as Ningbo. However, the majority of Chinese junks sailed from Amoy and Quanzhou. The route to the Philippines was one they knew well, having plied

the South China Sea for centuries. The number of junks travelling to Manila varied greatly from year to year. For instance, in 1616 only seven came, but in 1631 there were fifty and in 1636 thirty junks arrived in Manila (Schurz 1959, p. 71). It is quite possible that one or more of the junks which arrived in 1636 carried some of the porcelain or jars which were salvaged from the *Concepción* 350 later.

There were many reasons why on some occasions there were only a few junks travelling to Manila while at other times there were dozens of them: junks were defenseless and when the pirates were particularly aggressive the Chinese merchants would not venture onto the high seas, either of their own accord or because their government forbade them to do so. If the Chinese were aware that the galleon from New Spain had failed to arrive in Manila the previous year, they knew that there was no point in bringing their merchandise there because the Spanish would have no silver to pay for it. Likewise, the years in which the junks arrived by the scores in Manila usually coincided with a period in which the Iberian government had forbidden the Portuguese to trade with the Spanish.

Contrary to the European merchants who operated either under direct orders of the crown (as was often the case with the Portuguese), or were strongly backed by their government (as was the case for the Dutch East India Company), the Chinese merchants had to fend for themselves.

China had no official sea trade policy except for the tribute-gift system that had been implemented since Han times and which, during the late Ming Dynasty, was strictly regulated by the Bureau of Maritime Trade. The tribute-bearing missions were presented with gifts from the Chinese government, these "gifts" being similar in value to that of the "tribute" offered. This complex form of goods exchange had come about because Confucianism despises trade activities, on the grounds that they bring profits to some at the expense of others. It would have been unthinkable for the Imperial government to engage in such lowly activities.

Consequently, trade had been carried on traditionally either by foreign merchants, Middle Eastern and Southeast Asian, or by private Chinese merchants. Taxes were not paid to the Imperial government but were due to local authorities. From the middle of the sixteenth century onwards the Portuguese effectively eliminated competition from other foreign traders while the Chinese continued to ply the South China Sea along the coastal route that carried their ships to Vietnam and Malaysia and from there to either Siam or Indonesia and Borneo. The monsoon held no secrets for them and they knew how to sail across open seas to the Philippines.

By the end of the Ming Dynasty, the Chinese Imperial navy, so powerful under the command of Zheng He during the early fifteenth century, was now reduced to a few warships incapable of offering protection to sea-going junks. As their only protective measure, the junks usually travelled in convoy.

In Manila, trade with the Chinese was regulated by the rigid system of the *pancada*, a system which had already been adopted by the Portuguese when dealing with the Chinese in Guangzhou. The *pancada* consisted of a fixed wholesale price negotiated between a small committee of two or three Spanish appointed by the Government and the captain of each junk. This practice avoided price increases resulting from competition.

Schurz quotes Antonio de Morga's list of goods brought to Manila by the Chinese (Schurz 1959, pp. 73, 74). First and foremost were all sorts of silk textiles, the staple of the Galleon Trade; then came metal objects as well as considerable amounts of saltpetre and gunpowder. Also from China came a great variety of delicacies such as preserved fruit and ginger; wheat flour; fresh vegetables and fruit; many sorts of live animals (horses, geese, capons, etc.); and "fine crockery of all sorts". To end with de Morga's words: "...and rarities, which, did I refer to them all, I would never finish nor have sufficient paper for it" (Schurz 1959, p. 74).

Although de Morga does not specifically mention porcelain or jars, it can be surmised that "fine crockery of all sorts" referred to porcelain and most of the goods mentioned in his list must have been shipped in stoneware jars.

THE MANUFACTURE OF CERAMICS

In the West, ceramics are divided into three categories: porcelain, stoneware and earthenware. The Chinese do not make a distinction between the first two and divide ceramics into two categories: high-fired wares[9] (which include porcelain and stoneware) and low-fired wares or pottery (earthenware).

Porcelain has three characteristics: it is white, translucent and resonant. To obtain these characteristics it is necessary to mix two basic

ingredients: kaolin[10] (China clay or primary clay) and petuntse[11] (China stone), both of which originate from igneous rock, mainly granite, but at different stages of decomposition. Kaolin, a pure-white, only moderately-plastic clay, fuses at about 1,750 C°, a temperature which cannot be reached in a normal kiln. Petuntse is a less decomposed white rock which vitrifies at a lower temperature. The Chinese call these two substances the "bones" and the "flesh" of porcelain. The proportion in which they are mixed varies enormously; each potter has his own formula, but generally a fifty-fifty mixture gives the finest porcelain. The amount of petuntse can be increased to three-quarters to one-quarter of kaolin for coarser porcelain.

After kaolin and petuntse have been mixed in the required proportions, water and a flux (mineral salts which lower the fusing point) are added. Then the arduous work of preparing the clay begins. The mixture is placed in hollows in the ground or in large tubs where it is trodden by water buffaloes or by men and boys (today this task is done by machines) until all impurities have settled at the bottom. The purified paste is then left to rest for several years. Once it has matured it still requires a great deal of handling to eliminate the air bubbles that could expand and burst during firing.

Stoneware, unlike porcelain, is neither white nor translucent and it is only moderately resonant. The one characteristic which stoneware and porcelain have in common is that of being non-porous as a result of the vitrification which occurs at the high temperatures at which both are fired (about 1,300 C° [12]). Stoneware is made from secondary clays[13] sufficiently free of impurities to allow high firing temperatures without collapsing. The presence of minerals in the clay gives a wide range of colors from reddish to gray and buff.

Earthenware is made from secondary clays which contain a great deal of impurities which would burst or burn out at high temperatures. When this occurs, the structure of the vessel is so weakened that it collapses. Consequently earthenware is fired at temperatures ranging from 600 C° to a maximum of 1,100 C°. Vitrification does not occur at these temperatures and, as a result, earthenware is porous unless covered with a glaze which then renders it impervious.

During the Ming Dynasty, throwing on the wheel and molding were the two basic shaping techniques. Molding was usually reserved for "open" forms such as bowls and dishes. There were different ways in which a vessel could be molded: one was to shape it first on the wheel and then press it into twin molds; or the clay could be pressed into a slab over a piece of coarse cloth and then transferred to a mould. The latter method was used for large dishes while the former was commonly used for bowls.

Closed forms, such as bottles, were thrown on the wheel and shaped in two or more sections which were subsequently luted. Luting was also used for spouts and handles which were shaped separately.

Once the pieces were properly shaped and finished they were left to dry for a period that lasted from a few days to as long as a year, depending on the quality of the wares (the drier the wares the less probability there is of them warping during firing). Once dried, the vessels were ready to be "shaved" to the required thinness and final shape.

A number of techniques were used to decorate a vessel: molding might be used to impress a pattern on either the inside or the outside walls or, by using twin molds, on both sides; a pattern could be finely etched (as in the almost invisible anhua decoration) or deeply carved; several mineral oxides could be used to paint colored motifs under the glaze while enamels were used to decorate a vessel over the glaze. No vegetable pigments were ever used on ceramics because the organic matter would burn at kiln temperature.

At the end of the Ming Dynasty the most common decoration was that of underglaze blue. At that time, this method of decoration consisted of applying cobalt oxide on the unfired body; nowadays it is painted on the "biscuit" (a vessel which has already been fired and which will be refired after having been painted and glazed). This later technique minimizes the difficulties with which the Ming painter had to deal: if he loaded his brush with too much diluted cobalt, or hesitated slightly, a smudge would inevitably appear and the resulting flow would be impossible to correct.

By the fifteenth century good-quality cobalt ore was available from a mine in Jiangxi Province, not far from Jingdezhen. However it contained manganese, an impurity which had to be eliminated before the cobalt could be used. Furthermore, the ore had to be ground into minute particles because cobalt acts as a flux and consequently must be used in minimal quantities, otherwise the glaze covering the painted areas melts away and the exposed cobalt, on contact with air, oxidizes and becomes an ugly reddish

brown instead of the desired blue color.

Once the wares had been decorated (whether with incised, molded or painted motifs) they were glazed, that is to say they were covered with a mixture of diluted petuntse, fern ash and lime. The proportions of the ingredients varied a great deal, glaze formulae being countless and well-guarded secrets passed down from father to son. Most glazes had a slight percentage of iron oxide which, during firing in a reducing atmosphere, lent a greenish or bluish tinge to the glaze. As the composition of body and glaze are very similar (basically petuntse), during firing they melt and fuse and when the temperature drops they vitrify and virtually form a single mass. If one looks at a shard, it is almost impossible to see the demarcation line between body and glaze. However, in some instances the raw materials are not as compatible as they ought to be in which case, during the cooling period after firing, body and glaze shrink at a different pace leaving small areas on rims bare of glaze. This condition, which is very common on Kraak wares, is called "moth eaten" edges.

The all-important difference between a finished pot and shaped clay is that the first has been fired and the second has not. As long as a pot has not being fired it is only shaped clay which can be re-shaped at will, but once it has been fired, plasticity is lost for ever. Ceramic wares are fired in kilns of different shapes.

Kilns in South China are built with bricks and are known as dragon kilns because they are long and narrow and, being built on the slope of a hill, they have a firing chamber at the lower part (the mouth of the dragon) and a chimney at the other end and higher part (the tail of the dragon). In more sophisticated dragon kilns (e.g. those operating in Jingdezhen) the body is divided into interconnecting chambers (one behind the other) and each is a little higher than the previous one so that the hot air flows easily from one to the other. Each chamber has an oval opening which is sealed with bricks during the firing period and is broken open once the wares are ready. Kilns of this type are often 15 to 20 meters long and four or five meters high and they can fire more than 20,000 pieces at a time.

The simplest kind of dragon kiln is still commonly found in Southeast Asia, wherever a family of Chinese potters has settled, and archaeological sites show that the multi-chambered kiln was also used in several countries of this region. Thai kilns producing stoneware were operating on the same principle as that of a dragon kiln but the shape was slightly different with a wide, rounded front and a narrow end. They were usually smaller than a Chinese dragon kiln, although kilns excavated at the Bang Rachang kiln site are up to 15 meters long[14].

By the sixteenth century, Chinese potters were highly skilled in controlling the high temperatures required to fire porcelain and in obtaining the appropriate atmosphere, whether oxidizing or reducing, inside the kiln.

A reducing atmosphere is obtained by limiting the amount of air in the firing chamber and by producing a smoky fire. Flames naturally absorb the oxygen which is necessary for combustion, while wood smoke contains carbon monoxide which also reduces the oxygen content. Once all the oxygen inside the kiln has been absorbed by these two elements, the fire extracts the oxygen content from metal oxides. In the case of underglaze blue, the cobalt oxide acquires its blue color by being transformed into cobalt silicate, while the iron present in small quantities in the glaze produces the bluish or greenish tinge so typical of late Ming Blue and White porcelain. Glazes with a high iron content (often found on stoneware) will turn green if fired in a reducing atmosphere (e.g. celadons) or brown (in many shades up to black) if fired in an oxidizing atmosphere, when fresh air (oxygen) is allowed inside the kiln.

Saggars were used to prevent the blemishing of the glaze by falling ashes and to obtain an even distribution of heat around each pot. These thick cylindrical containers made of fire-clay could hold one large piece of porcelain or several small ones stacked one on top of the other and separated by tiny clay balls.

Sand was sprinkled on the bottom of the saggar to prevent the pots from adhering to the bottom of the saggar, should the glaze happen to run down (after cooling it was easy to rub off the sand that had adhered to the footrings). For very good pieces, the sand used was as fine as powder; the coarser the ware, the coarser the sand. Today, at Jingdezhen, millet is used instead of sand.

For mass-produced porcelain (particularly that intended for export), the potters did not waste their time polishing the sand which had become stuck to the footring and, as a result, the majority of Kraak porcelain and provincial wares have this flaw.

Although by the sixteenth century the Chinese potter had attained remarkable skills in firing techniques, numerous things could go wrong. Rare indeed was the case in which a full kiln-load was one hundred percent successful.

Badly prepared clay could result in warping, or worse, in sagging. A little air from a peep-hole could cause vessels in that chamber to half-oxidize, or the temperature in the higher chambers could fail to reach the minimum required for vitrification. The wastage was enormous.

Once the kiln had cooled down, a process which could take several days, it was unloaded and the wasters discarded. The porcelain was packed in straw and was then ready to be shipped, in wooden tubs, to ports along the coasts of the East and South China Seas for export to wherever Chinese junks and European ships would take it.

CHINESE CERAMIC PRODUCTION AND DISTRIBUTION NETWORK

Since neolithic times China has excelled in pottery making and the world owes her the invention of porcelain. China was producing this white, resonant and translucent material no less than a thousand years earlier than it was made in Europe[15].

Over the centuries countless potteries all over China acquired fame for the production of one ware or another, but from the twelfth century onwards the town of Jingdezhen emerged as the porcelain capital not only of China but of the world, a position which it retained until the end of the eighteenth century.

Jingdezhen is situated on the banks of the Chang river near Poyang lake in north Jiangxi Province. The town owes its success to the excellent quality of its kaolin and petuntse - the two main ingredients in porcelain making - available nearby, and to the water routes linking it with coastal ports such as Guangzhou in Guangdong Province and Quanzhou and Amoy in Fujian Province.

By the time the Europeans began buying the wares produced at Jingdezhen in the sixteenth century, Jingdezhen had evolved into a highly sophisticated ceramic center. Hundreds of kilns fired vessels which had gone through the hands of countless potters, with each potter specializing in a single function: one trimmed footrings, another shaved the pots to the required thinness, still another painted a single motif and then passed the pots to another painter who would depict yet a different motif, and so on.

Ceramic production at Jingdezhen was a seasonal activity carried out during the warmer months of the year, as in winter the clay froze to a hard, unworkable mass. Yet the output could reach millions of pieces a year. Although Jingdezhen was capable of mass production, one should not imagine it as a single pottery of mammoth dimensions. Quite the contrary, it consisted of a great number of diverse enterprises: some potteries were small family business while others enjoyed official and even Imperial patronage. Often a number of potteries would join into loose cooperatives and thus be able to cope with large orders.

This arrangement allowed great flexibility as some potteries specialized in only one type of wares while others catered to different markets. Some potteries produced wares of superior quality for the Imperial palace and employed highly skilled potters, while others specialized in cheaper, mass-produced wares for export, as was the case for Kraak porcelain.

Over the centuries Jingdezhen had been affected by the vicissitudes dictated by historical events, and in the 1630s it began to feel the shock waves produced by the crumbling of the Ming Dynasty. The aging Dynasty was threatened from all quarters: pirates on the seas, warring Mongols from the north and peasant revolts within its own territory. The corrupt Ming Dynasty survived for a few more years but it collapsed under the sword of the invading Manchus who founded the Qing Dynasty in 1644.

In those unsettled times, the money the court and gentry would normally have spent on the yearly orders of high-quality porcelain was diverted to pay the armies fighting the Manchus in the north. Many a pottery, especially those employing highly skilled labor, found themselves without patrons.

This situation, however, coincided with an increased demand for export porcelain from the Europeans who were no longer satisfied with the cheap, mass produced wares which were being sold to them (e.g. Kraak porcelain); they required higher quality, better painted wares.

These factors were to crystallize into the production of Transitional wares. The more skilled potters, who had found themselves without a job following the loss of court patronage, lent their skills to potteries that were prepared to produce high-quality wares for the foreign market.

To understand this new development fully we must look back at the commercial side of the ceramic industry and see how it functioned during the first half of the seventeenth century.

Until recently the Chinese ceramic industry has been seen as a somewhat two-faceted activity:

on one hand the producer (i.e. the potter) who would not only make the ceramic wares but also ship them to the export cities; on the other the buyers, mainly Europeans, who collected the wares from Guangzhou, Formosa or Manila.

Yet in recent years it has become increasingly clear to scholars that this was an over-simplified picture and that an important link - that between producer and buyer - was missing. It is now known that this gap was filled by a group or groups of Chinese merchants who dealt directly with the Europeans, accepting their orders for porcelain and then travelling up-country to deal with the potters in Jingdezhen, explaining to them the requirements of their clients. Almost invariably it was these merchants who put up the money to buy the raw materials needed to fulfill the orders and to cover the risks of kiln failure. The potters provided their equipment and labor while the merchants provided the capital and commercial network.

It is obvious that the merchants had to put up the money not only to produce the wares but also to ship them to the ports of destination[16] and to provide storage facilities, often for a lengthy period of time, until the ships could sail with the monsoon. Frequently the merchants had to wait for some time before the Europeans paid for a consignment; this was especially true for the Portuguese who were chronically short of cash. These merchants often financed the junks that sailed towards Southeast Asia and in particular to the Philippines.

All this required a sophisticated network with a very substantial working capital. It is most likely that this network was controlled by a group of wealthy merchants from Huizhou in Anhui Province about 100 miles north of Jingdezhen.

The prosperity of these Huizhou merchants was based on the salt trade with which they had been involved since Song times. By the seventeenth century they had extended their interests to many different goods, including porcelain. As their wealth increased they naturally tried to rise to a higher social status by scholarly attainments and patronage of the arts[17]. Painters and poets were often associated with them and they also financed the printing of books.

It is probable that their taste influenced the production of potters. Were they not after all the ones who selected the wares which would be sold to the foreigners. In fact, many of the landscape scenes so frequently depicted on porcelain from the 1630s onward[18] show a strong influence from the Huizhou style of painting. Numerous examples of this style are available in books and woodblock prints (Cahill ed. 1981)[19].

Although it was the most important center of porcelain making, Jingdezhen did not have a monopoly: countless potteries all over China were producing porcelain of various types. And many potteries in Fujian, Zhejiang and Guangdong provinces produced cheaper, coarser wares which, due to the kilns' proximity to ports such as Amoy and Quanzhou, were often exported to Southeast Asia. These kilns were small and often run by a single family.

Since the wares produced by these potteries are not very distinctive except for their coarseness, it is often impossible to assign them to any given kiln. Hence they are described with the all encompassing term of provincial wares or wares made in provincial kilns.

Almost all cargoes salvaged from shipwrecks have yielded some provincial wares along with the main load of Jingdezhen porcelain. The cargo from the *Concepción* is no exception and together with the finer porcelain shards there are a few coarser ones that can be assigned to provincial kilns (see Pl. 32). They are characterized by a rather coarse clay, sketchily drawn motifs in a grayish or blackish blue and a cracked glaze which often has a greenish or grayish tinge.

Whereas some of these provincial kilns produced porcelain, others produced stoneware with some potters specializing in stoneware jars of various sizes and shapes. These were used as containers and were indispensable for the safe transport of merchandise from production centers to consumer markets. The jars were cheap and easy to make and this explains why, although far less practical than a square container[20], they represented the most common type of container recovered from shipwrecks.

It was common practice to re-use these jars, once emptied of their merchandise, and so one ship might contain jars from many different parts of Asia.

THE CERAMIC CARGO OF THE *CONCEPCION*

ARCHAEOLOGICAL INFORMATION

The last few years have seen the salvage of many ships which were wrecked in the first half of the seventeenth century. Their cargoes contained Blue and White porcelain as well as jars similar to those carried in the hold of the *Nuestra Señora de la Concepción*: this provides good comparison material. The most important of these shipwrecks are as follows:

- the *Mauritius*, a V.O.C.[21] ship wrecked in 1609 in the Gulf of Guinea near Cape Lopez, Gabon. The recovery was carried out by a French team in 1985 and an archaeological report was published in 1989 (L'Haur et al. 1989). This recovery yielded a large number of Blue and White shards, mainly from Kraak porcelain. These ceramics were almost certainly from the cargo of the *Sao Antonio*, a Portuguese carrack captured by the Dutch in 1605;
- the *Witte Leeuw*, a V.O.C. Indiaman which sunk in 1613 near the island of St. Helena in the South Atlantic. The salvage of the cargo of this ship was carried out in 1978 and the nearly 400 kg of shards recovered were acquired by the Rijksmuseum in Amsterdam where a team of researchers studied and cataloged them. The result of this study has been published in a well-documented book (Pijl-Ketel 1982). The great majority of these shards belong to Kraak porcelain. The *Witte Leeuw* cargo also yielded a number of jars, some of which are similar to those found in the *Concepción*;
- the *Banda*, also a V.O.C. ship, which foundered in 1615 near the island of Mauritius in the Indian Ocean. Its cargo yielded a large amount of Kraak porcelain, some of which is in the Guimet Museum in Paris (Dumas 1981);
- the *Nuestra Señora de la Vida*, a Spanish galleon wrecked in 1620 off the Isla Verde (Mindoro Island, Philippines);
- the *Sao Gonçalo* wrecked in 1630 in Plettemberg Bay, near the Cape of Good Hope (Axelson 1981, pp. 37-40). The ship, a Portuguese carrack on its way home, weighed anchor in the bay after having been badly damaged by a storm. Before the crew could complete the repairs, a second storm smashed the ship ashore. In 1980, a construction plot was being levelled in that area, about one thousand shards were found, the majority of which were Kraak porcelain. It is believed that they belong to the cargo of the *Sao Gonçalo*;
- the *Nuestra Señora de la Limpia y Pura Concepción* or *Concepción* (a different ship from the one under study here), which foundered in 1641 when sailing from Veracruz to Spain. Part of the rich cargo was recovered in 1687, and its location thereafter remained secret until 1978 when it was rediscovered by a treasure hunter (Borrell 1979 & 1983; Peterson 1979; Blank 1980). The *Concepción* yielded a few poor-quality Kraak porcelain pieces which are now kept in the Museo Casas Reales in Santo Domingo, Dominican Republic; and
- the so-called Hatcher Cargo which was salvaged by Captain Michael Hatcher in 1983 from what is believed to have been the wreck of a Chinese junk in the South China Sea. Two pieces found in that cargo bear the cyclical date of 1643 which leads scholars to believe that the cargo can be dated c.1640-5 (Sheaf and Kilburn 1988).

It is this last recovery which presents us with the greatest number of possibilities for comparison, as the Hatcher Cargo yielded many thousands of intact porcelain pieces[22] which were made only a few years later than those carried on board the *Concepción*.

In a comparative study of the two cargoes, two factors are immediately evident: first, among the Kraak porcelain in the *Concepción* there were no klapmutsen or closed shapes and, second, save for one or two exceptions, there were no Transitional wares. On the other hand the Hatcher Cargo had a large number of Kraak porcelain kendis, pear-shaped bottles and some boxes and an equally large amount of superb-quality Transitional wares.

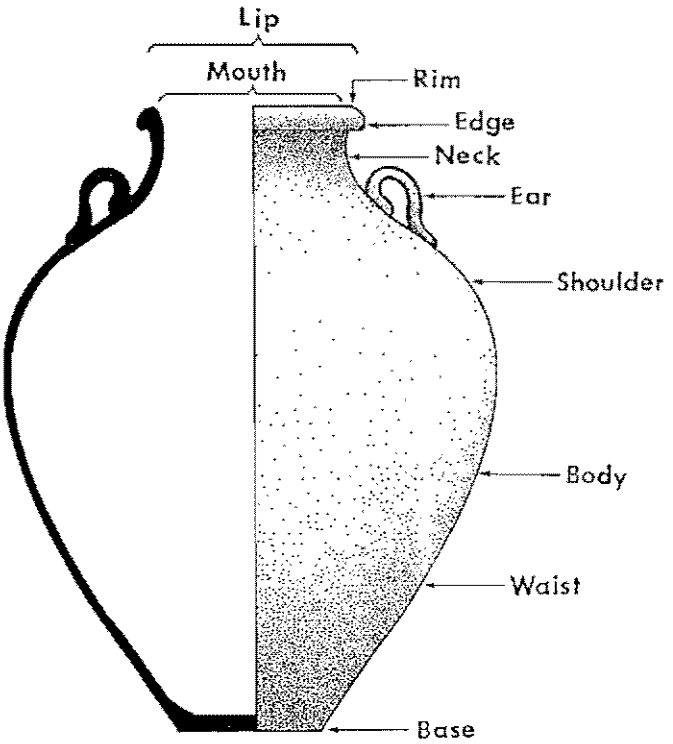
Of specific interest with regard to the study of the large jars carried on board the *Concepción* are the marine archaeological finds near the coast of Thailand: the Ko Si Chang One and Three shipwreck areas (Green 1983, Green et al. 1987b) and the Ko Kradat ship (Green et al. 1981), all of which yielded Thai jars very similar to the ones studied here. These sites also produced some Blue and White Chinese wares, but they are of an earlier period than the one which is of interest to us here.

DATING THE CERAMIC CARGO

The *Nuestra Señora de la Concepción* set sail on her fated voyage in the summer of 1638, after the Chinese junks and the Portuguese carracks sailing from China on the spring monsoon had arrived in Manila with their cargoes of silks and porcelain. It is more than likely that the porcelain which they carried had been made during the previous year since potters did not work in winter. This gives us 1637 as the latest date of manufacture. It is known that for the previous two years no galleon had left Manila for Acapulco and consequently it is probable that the porcelain which had arrived in Manila during these two years was kept in store until loaded on board. It is also possible that some porcelain that had arrived in Manila in 1635 had not been sent to Acapulco with the galleon that sailed that year because it was common practice among the wealthier merchants in Manila to buy from the Chinese after the yearly galleon had left for Acapulco in order to negotiate a better price outside the pancada. As explained above, the cargo carried in 1635 may have been made in 1634, and allowing for an extra year in which the merchandise may have been kept in store in China for one reason or another, we might date the bulk of the porcelain on the *Concepción* as being from 1633 to 1637.

On the other hand there were many passengers on board, and some of them might have spent a number of years in the Orient and gathered porcelain for their own use, thus explaining the few shards which have characteristics that would place the pieces to which they belonged to an earlier period than the rest of the cargo.

As for the stoneware jars, it is difficult to give any date other than 1637 as the latest period of production: these jars were extremely durable and used repeatedly by different customers. Therefore, some might have been quite old when they were put on board the *Concepción*.



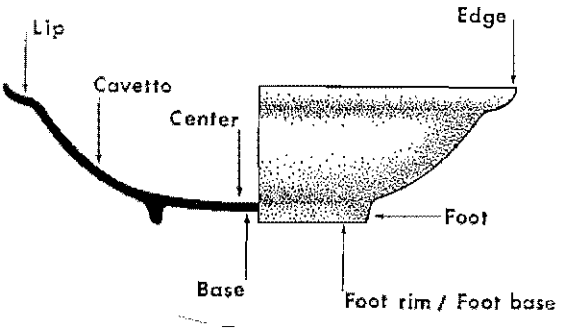


Illustration of terms used in describing a complete jar (above) and a plate, dish or bowl (below).

CLASSIFICATION OF BLUE AND WHITE PORCELAIN

Of the 10 kg or so of Blue and White shards found in the area of the wreck of the *Concepción*, the great majority are very small pieces, about five cm square. Nevertheless a large number of them are quite easily identifiable. The largest shards, some of about 15 cm in length, are bases which, being the strongest part of a vessel, have survived in fairly large quantities; their characteristics often give a clear indication of which type of ware they belonged to. These shards can be divided into three categories: Kraak porcelain, other Ming Blue and White, Late Blue and White.

More than half of these shards are Kraak porcelain and they are exclusively from dishes and bowls. Blue and White shards not belonging to a Kraak category are mainly from small bowls and a few odd pieces of different shapes including one large jar whose whole upper part has survived.

Late Blue and White shards include pieces which are of a much later period than that of the wreck of the *Concepción* and are therefore of limited interest in this study.

Kraak Porcelain Shards

Kraak porcelain was mass-produced at Jingdezhen, the great ceramic center in Jiangxi Province. In recent years a number of Kraak dishes have been unearthed in China itself[2 3] and this could indicate that the production was not entirely for the export market; however, it is a fact that most of the Chinese porcelain bought by the Portuguese and the Dutch for trading in the East as well as for export to their home markets was Kraak porcelain. Hence it is correct to define it as export ware.

Based on stylistic similarities with motifs typical of the Jiajing period (1622-66), such as the five-deer-in-a-landscape, it is possible to date the beginning of Kraak porcelain production shortly after 1565, soon after the Portuguese settled permanently in Macao (1557). On the other hand it is known from the accurate records of the V.O.C. that production continued until 1645-50 when wars resulting from the Manchu invasion and the collapse of the Ming Dynasty ravaged the Jingdezhen area, bringing to a halt porcelain production (Rinaldi 1989 pp. 61-5).

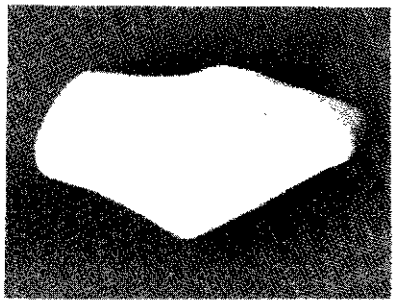
Over the 80 years or so of production, Kraak shapes and decorative motifs evolved significantly. Production in the sixteenth century is characterized by dishes of a small size (about 20 cm in diameter) and bowls. In the beginning, borders on rims were not divided in panels but during the last quarter of the century this feature became a typical characteristic of Kraak wares. On early wares this division into panels is underlined by more or less carefully worked molding.

In the seventeenth century Kraak porcelain production increased tremendously and while motifs on dishes and bowls were not as varied as they had been on earlier wares, shapes proliferated. In particular, many new closed shapes were decorated with the typical Kraak motifs of panels filled with auspicious symbols as well as naturalistic motifs. Closed shapes were produced in large quantities and they included pear-shaped bottles, kendis, wine pots, covered cups, betel boxes, etc.

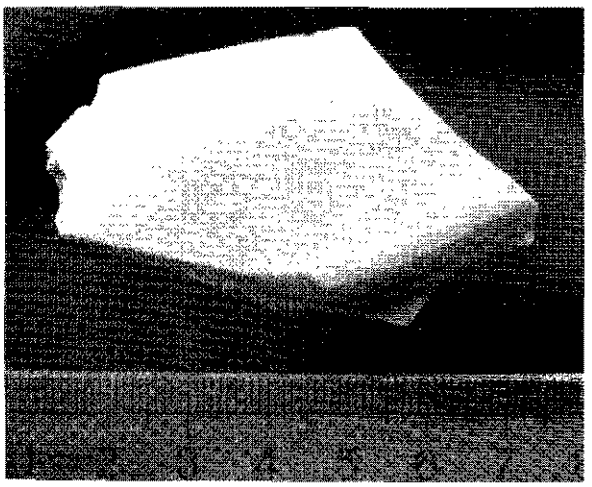
This increase in production in the seventeenth century was brought about by the appearance of new, avid buyers: the Dutch who arrived in the East in 1595. Almost from the start they placed enormous orders for porcelain, often for several hundred thousand pieces a year. Thus Chinese potters were forced to produce more, faster, and inevitably the quality of their wares declined and decorative styles became more and more stereotyped. The cobalt blue painting became less accurate than it had been in the earlier wares and with considerably less shading. The underside of dishes shows this deterioration particularly well: where in sixteenth-century Kraak there had been carefully drawn panels filled with lovingly painted floral sprays, by the second quarter of the seventeenth century there were simple roundels with a single dot in the center.

Another change is that from the second quarter of the seventeenth century, Kraak dishes and bowls no longer had molded motifs on cavettos and walls.

If Kraak shapes and decorations varied considerably over the years, body characteristics did not: early as well as late Kraak wares are made from a medium quality porcelain. Even the finer pieces show some imperfections such as grit adhering to the footrim and radiating lines on the base known as "chatter-marks" (*Pl.1a,b*). This term comes from the belief that the potter was distracted while chatting with his colleagues and was not paying attention to what he was doing.

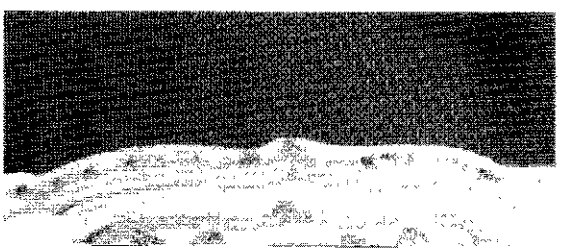


Pl. 1a



Pl. 1b

The glaze is one of the most distinctive features of Kraak porcelain. With a bluish tinge, it is almost invariably pitted and due to its slight incompatibility with body materials it often flakes off on rims creating moth-eaten edges (*Pl. 2*).

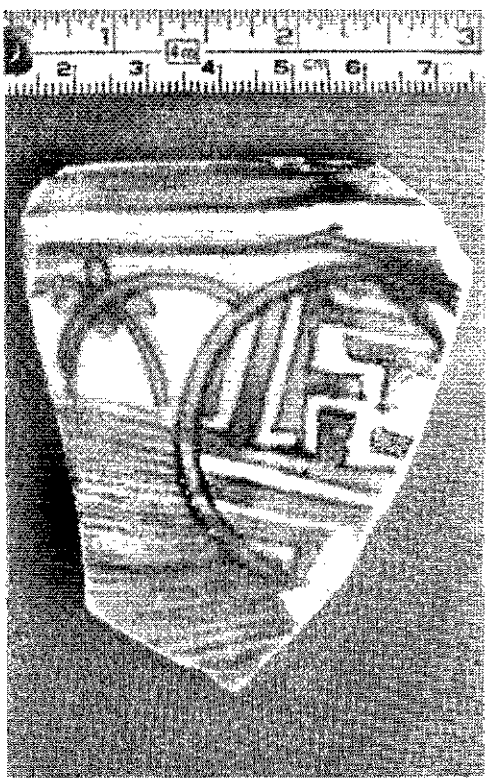


Pl. 2

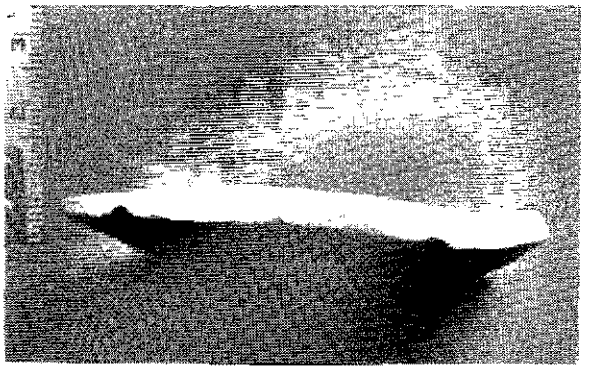
The thinness of the body is also a typical characteristic of these wares: even very large dishes, which may have rather thick bases, always have very thin rims (*Pl. 3a,b*).

The cobalt blue with which Kraak porcelain is decorated is first applied by outlining the motifs with dark blue, then washes of different intensities are used to fill in the empty spaces. Sixteenth- century Kraak is painted with a variety of shades of blue which usually have a silvery hue, while pieces painted during the first three decades of the seventeenth century are of a much darker shade. However, around the 1640s, Kraak wares were painted with a minimum variety of shades, usually only two: one very light which predominates, and a darker one. The distinctive feature of pieces produced at this later period is the overall light blue which is possibly due to the potter's wish to save on the amount of cobalt used. Almost all of the pieces from the Hatcher Cargo are painted in faded blue.

It is of great interest to note that Kraak pieces from the *Concepción* are generally decorated in a lively blue, albeit not very shaded and not as dark as it would have been on an early seventeenth century piece, yet it is certainly not the faded blue found in the Hatcher pieces. This gives a good indication that Kraak wares decorated with very light blue and with little shading should not be dated earlier than 1637.



Pl. 3a



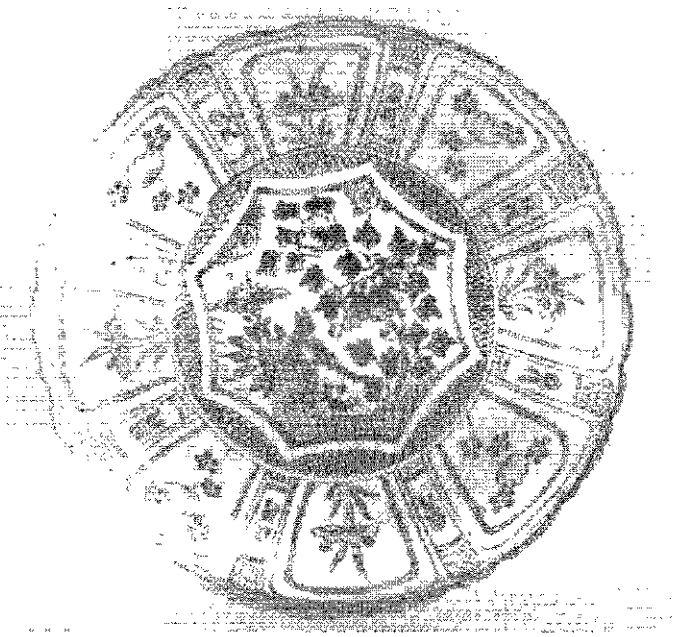
Pl. 3b

Kraak porcelain shards from the *Concepción* cargo are exclusively from dishes and bowls. There are no shards that can be assigned to a closed shape (e.g. kendis, pear-shaped bottles, boxes, etc.) or to a *klapmuts*[24], one of the most common and distinctive Kraak shapes. However, we do know that until at least 1640-5 both closed forms and klapmutsen were still produced in great quantities, as there were many in the Hatcher Cargo.

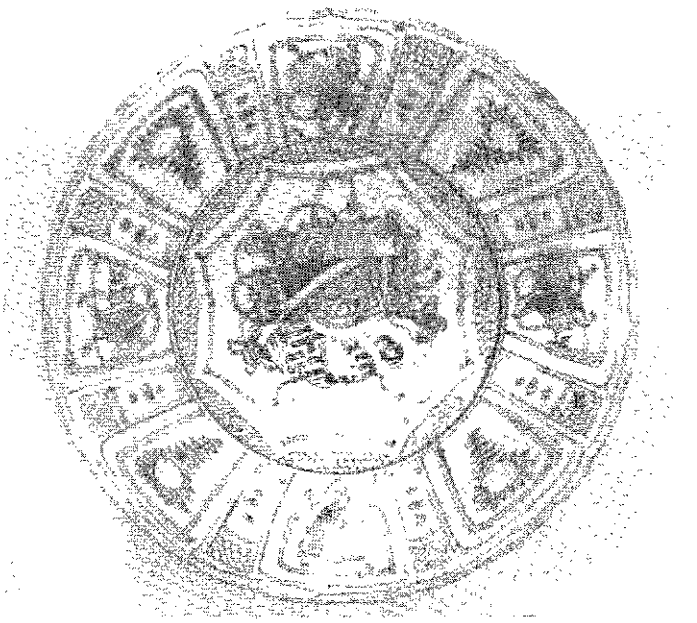
No clear explanation can be given for the lack of these shapes in the *Concepción* cargo. However, one must bear in mind that the Spanish did not have direct access to Chinese merchants on the mainland and could not easily place orders with them. As a result, they had to make do with what reached Manila through the Portuguese operating in Macao and the Chinese junks arriving from Amoy and Quanzhou. This porcelain may often have been leftovers of the Dutch who, by the 1630s, were the largest buyers of Chinese porcelain and probably had first choice.

Shards that belong to Kraak porcelain have the typical motifs which one would expect on Kraak pieces from this period (c.1633-37). They offer a very close parallel with those found in Plettemberg Bay (presumably from the *Sao Gonçalo*) and also with those from the *Concepción* (sunk in 1641). However, comparison with pieces from the Hatcher Cargo reveals a number of differences. Kraak dishes found in the Hatcher Cargo have three different border designs:

a. the large panels in the first group feature chrysanthemums, pomegranates and peach sprays, this last motif including a bird. This is the most complex and better painted of the three borders;
b. a second border has its large panels decorated with the simple and elegant motif of a single ruyi alternating with a single flower surrounded by four groups of tiny leaves, perhaps a morning glory (*Pl. 4*);
c. the third border has in its large panels the classical Kraak motifs of the "sunflower"[25] alternating with auspicious symbols (artemisia leaf, fan, double-gourd, etc.) (*Pl. 5*).

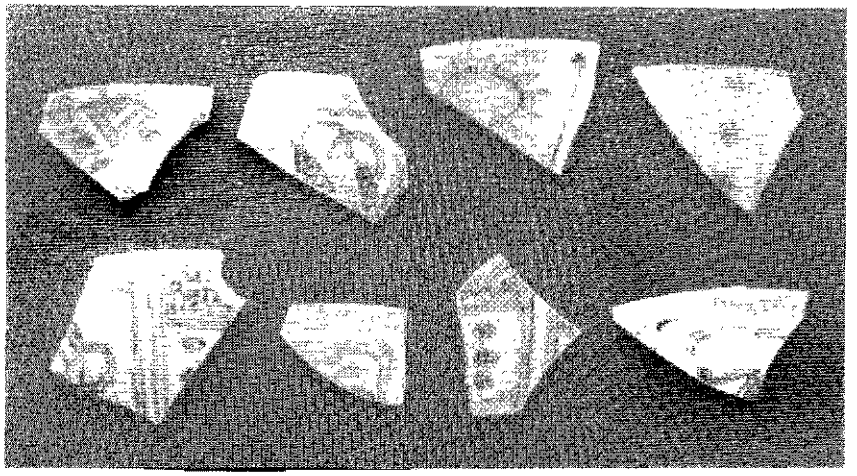


Pl. 4

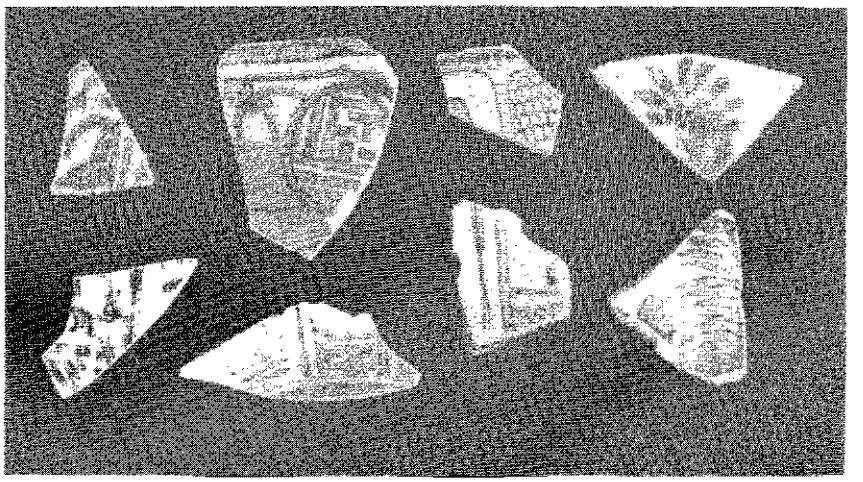


Pl. 5

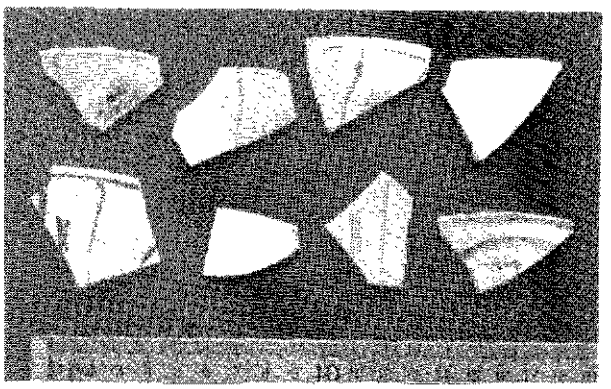
It seems that on board the *Concepción* there were no Type a. dishes with the more elaborate and better painted border as no shard of this kind has been found. The great majority of shards are from dishes with a Type **c.** border decorated with sunflower motifs and auspicious symbols (*Pl. 6a,b. c,d,e*). A few shards have a design that could be associated with that of the single flower in Type **b.** dishes (*Pl. 7*). However, here this motif is drawn more carelessly and the quality of the porcelain is somewhat inferior to that of average Kraak, perhaps indicating that this last group of shards belongs to dishes made in Fujian or Guangdong kilns rather than at Jingdezhen.



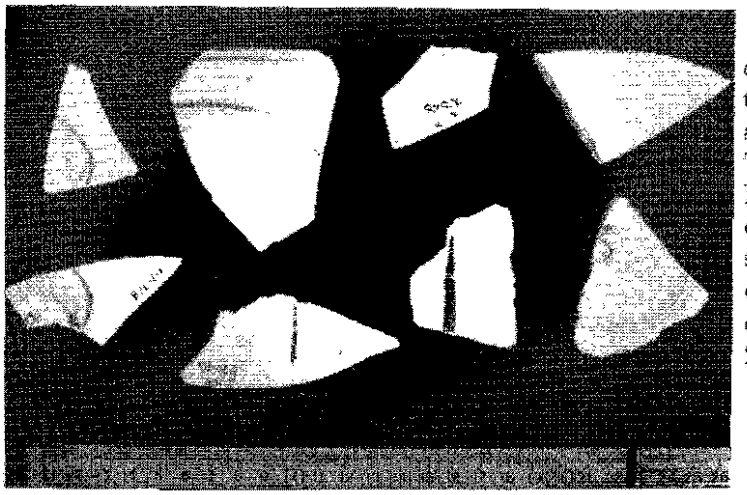
Pl. 6a



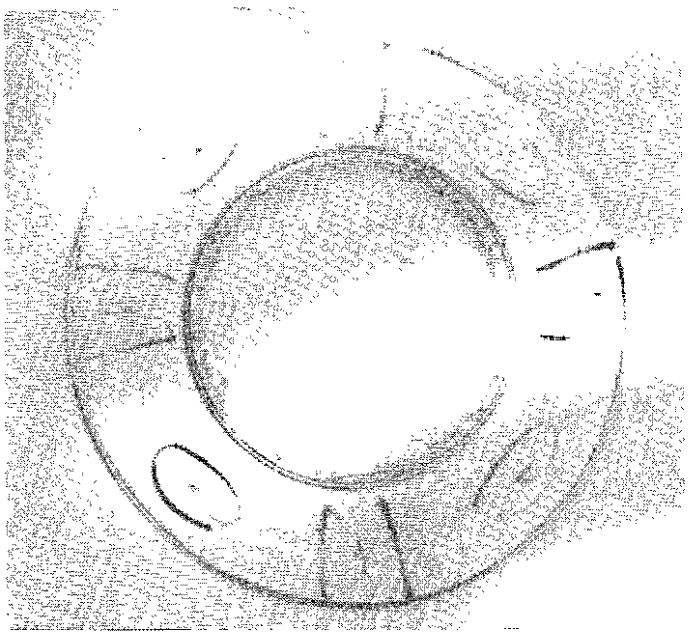
Pl. 6b



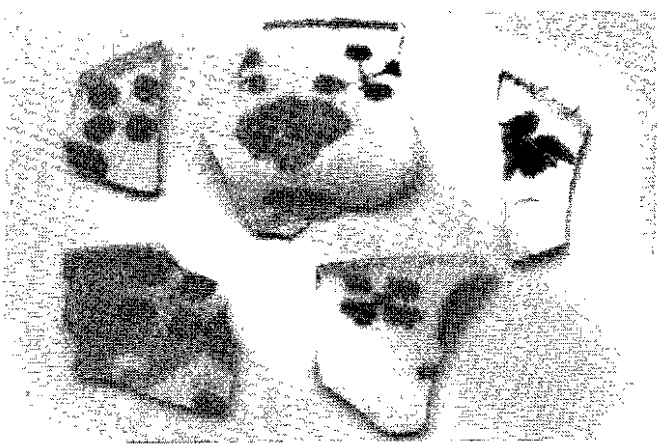
Pl. 6c



Pl. 6d

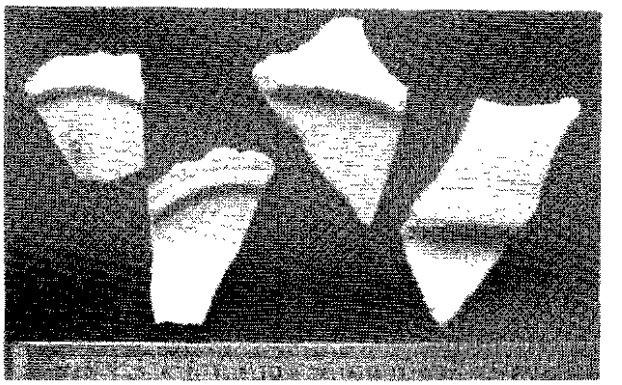


Pl. 6e

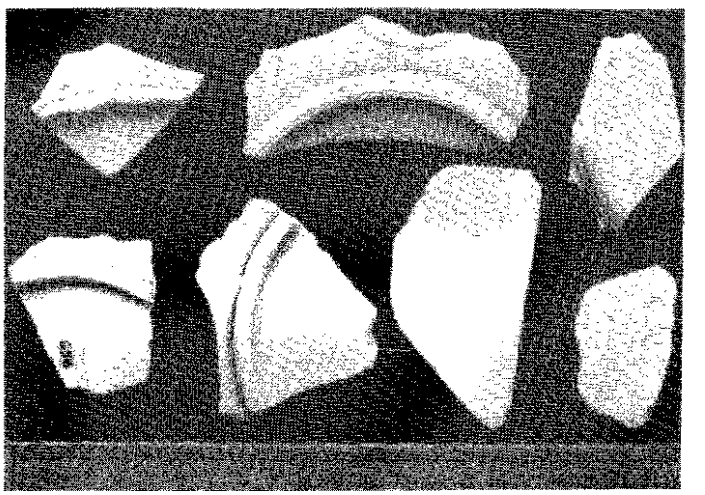


Pl. 7

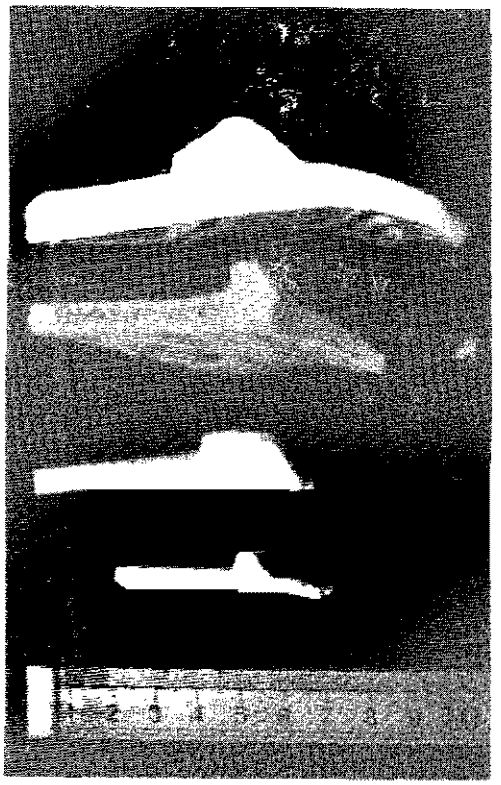
Many shards belonging to the bases of dishes have survived (*Pl. 8a,b*). These show the typical shape of the footring (*Pl. 8c*) with grit adhering to it and chatter-marks on the base. The shards provide a good indication of the size of Kraak dishes in the cargo and, based on this evidence, it seems that there were at least four sizes: the largest plates of about 50 cm in diameter[25], the smallest dishes of about 20 cm in diameter with two more sizes in between of about 27 cm and 35 cm respectively.



Pl. 8a

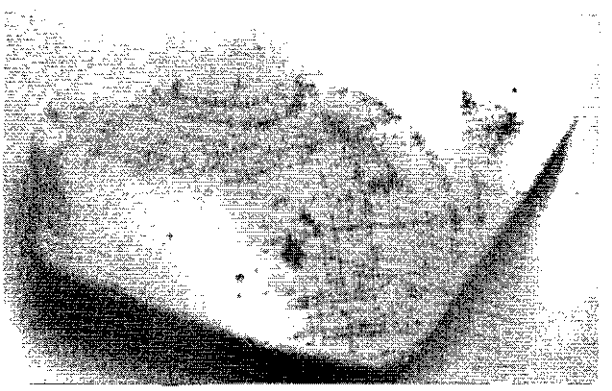


Pl. 8b



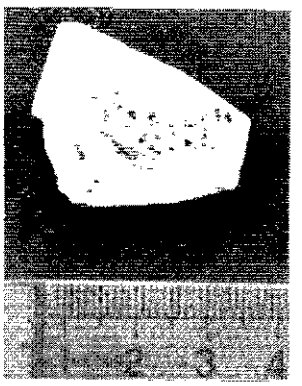
Pl. 8c

Some shards, which have been greatly eroded by the sea and sand stripping them of the glaze and most of the cobalt painting, clearly show a textile imprint (*Pl. 9*). This confirms the theory that dishes, particularly large ones, were made by preparing a slab of clay over a piece of cloth, thus making it easier to transfer the slab to a mold. This mold, however, only served the purpose of shaping the dish and not that of impressing designs (e.g. panels) on the rim, as had been the case on earlier dishes. None of the shards found in this cargo have any molded designs.

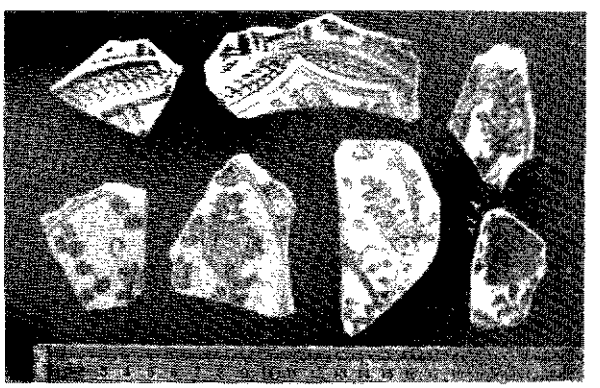


Pl. 9

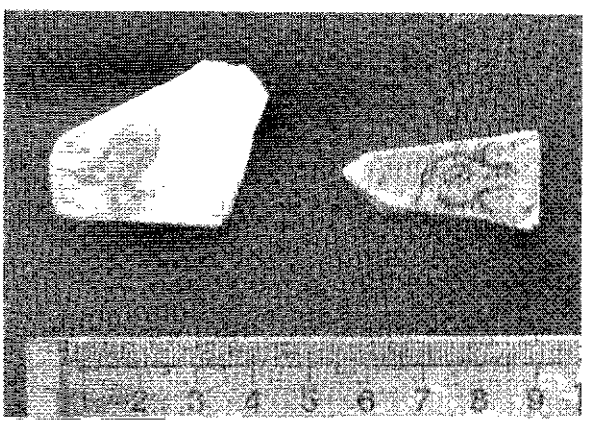
The designs of the center medallions are mainly naturalistic, with birds and foliage prevailing (*Pl. 10a,b*). The deer, which during the sixteenth century had been a typical Kraak motif, certainly as a result of the Jiajing Emperor's preoccupation with Daoism[27], was seldom depicted during the first three decades of the seventeenth century[28]. However, by late Ming it became once again part of the Kraak decorative vocabulary: there are several pieces decorated with the deer motif among pieces in the Hatcher Cargo and here there are a few shards with this motif (*Pl. 11*).



Pl. 10a

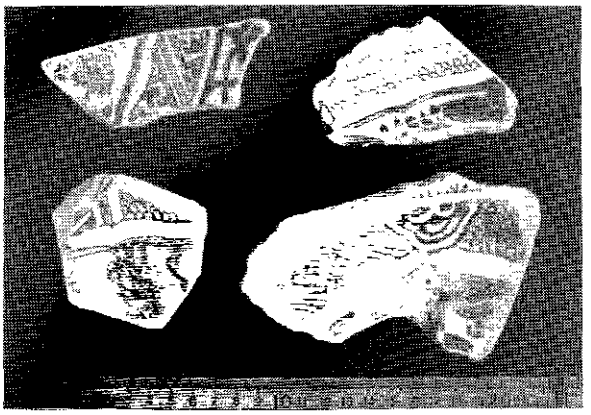


Pl. 10b



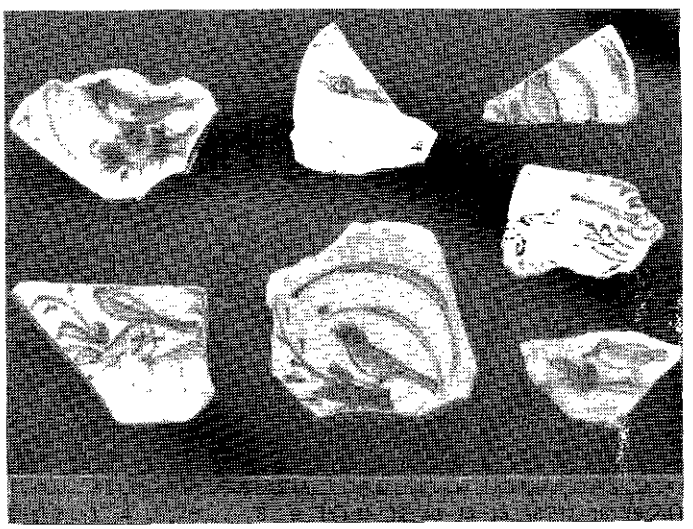
Pl. 11

It seems that most center medallions had a border with ruyi heads and a variety of geometrical motifs usually referred to as "diapers") which include fish scales, meander patterns and swastika motifs. These designs are almost certainly derived from textile patterns (*Pl. 12).*

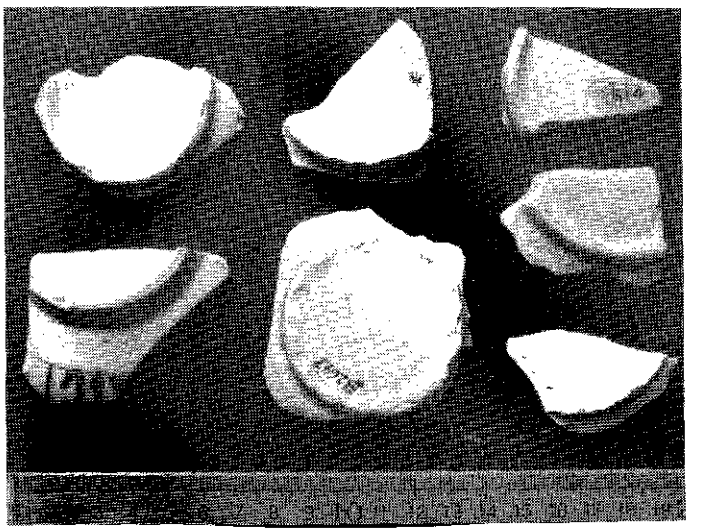


Pl. 12

Shards belonging to Kraak porcelain bowls are from "crowcups", so called because they invariably show in the center medallion a bird resembling a crow perched on a rock. However, this bird is often depicted with a white breast, perhaps representing a magpie. In China the magpie is the bird of joy, while the crow, which represents filial piety and is symbolic of the sun, may also be the sign of evil. While in earlier crowcups the bird-on-rock motif is kept to its simplest definition, in later pieces foliage and grass complement the composition. In the shards from the *Concepción* the bird-on-rock motif is depicted in this more elaborate manner (*Pl. 13a,b,c*).



Pl. 13a

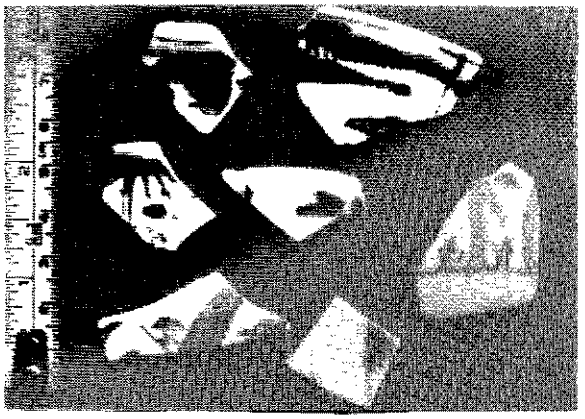


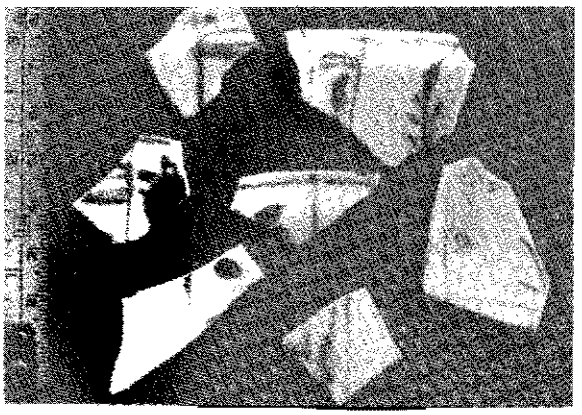
Pl. 13b

Pl. 13c

Crowcups in this cargo are of fairly poor quality and certainly the painting compares very unfavorably with that on crowcups from the Hatcher Cargo which was of surprisingly good quality. In fact it was even better than that of crowcups from the *Witte Leeuw* which were made thirty years earlier, thus confirming the theory that in Kraak porcelain better painting alone does not necessarily indicate an earlier date.

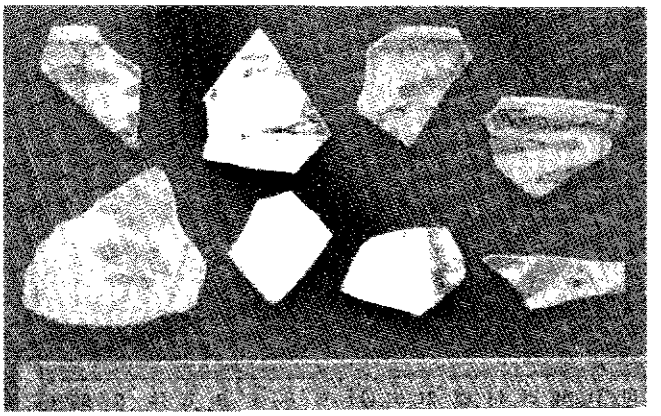
Shards from the upper parts of crowcups show that the rims have the typical upturned edge (*Pl. 14a,b,c*) and that the inside walls have the typical large and narrow panels. The latter are mainly decorated with peach sprays and thorny branches, while narrow panels have beaded pendants. The outside decoration, as is customary in this shape, shows more variety: while the peach spray remains a favorite (*Pl.15a,b*), the less common bamboo is depicted on a number of shards (*Pl. 16a,b*). Bamboo is the symbol of longevity as it is an evergreen plant and it also represents the loyalty of the scholar who even in poverty "bends but does not break". More unusual still, many large panels are decorated with landscape motifs which obviously show the Transitional style influence in Kraak wares of this period (refer to *Pl. 15*). However, while the landscape motif is very common on "crowcups without panels" (Rinaldi 1989, pp. 156-8), it is fairly rare on typical crowcups where the panel division allows only limited space.



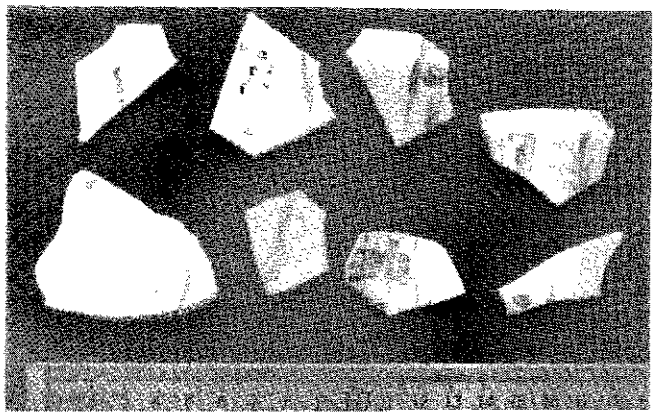


Pl. 14a,b (top, above)

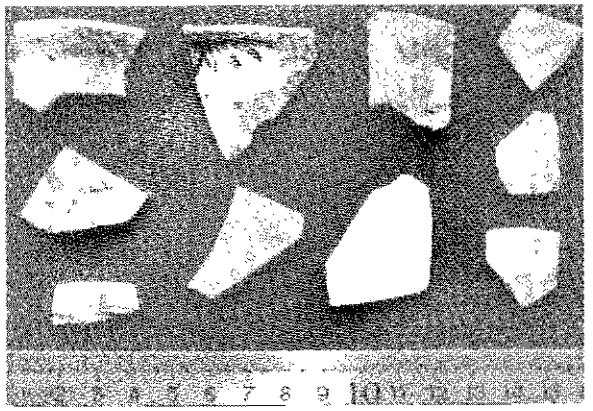
Pl. 14c (left)



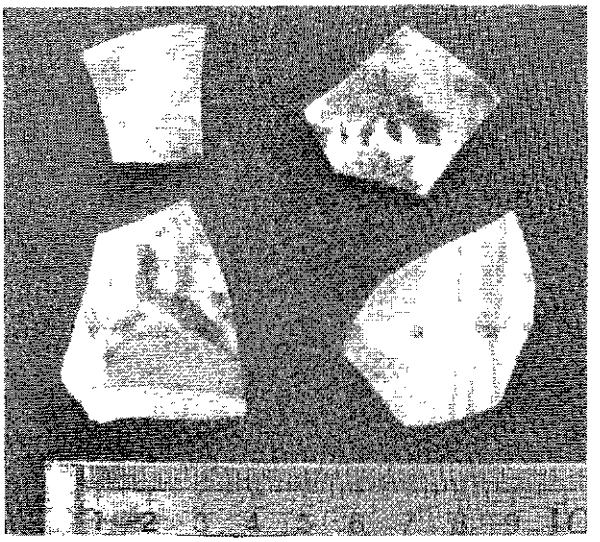
Pl. 15a



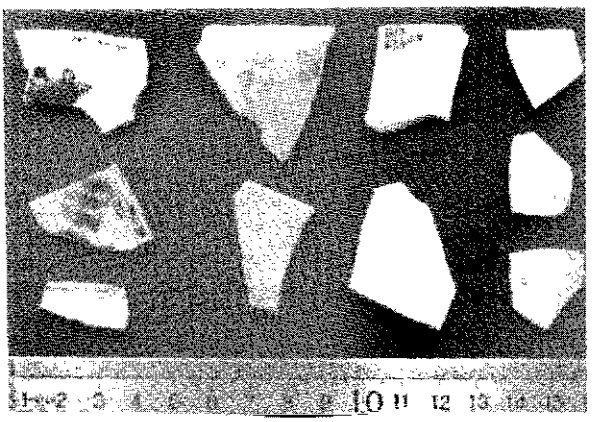
Pl. 15b



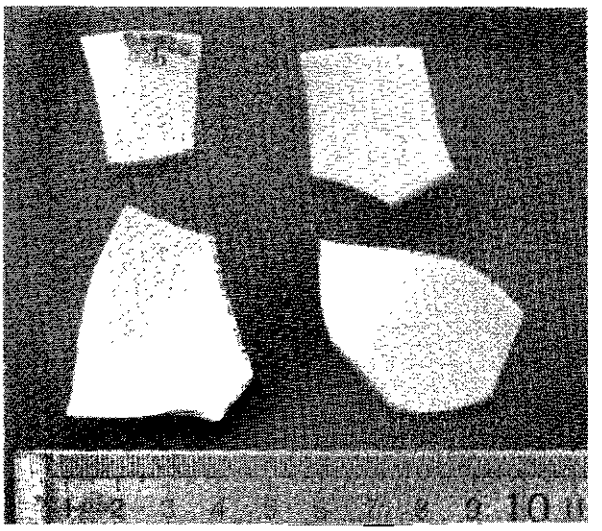
Pl. 16a



Pl. 17a



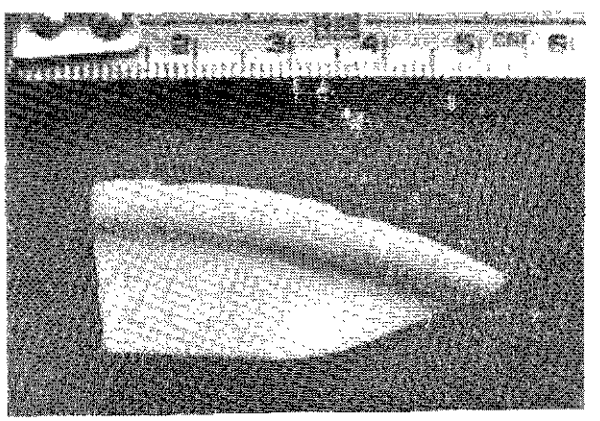
Pl. 16b



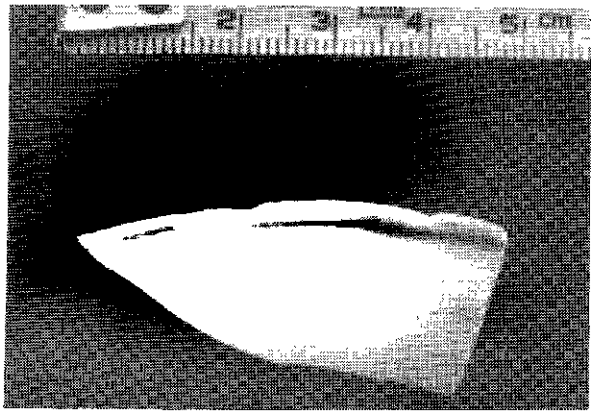
Pl. 17b

A few shards with unusual characteristics, perhaps all from the same bowl, are of better quality than those described above. The outside is divided in the usual large and narrow panels, the latter decorated with hanging ribbons and the former with delicately drawn chrysanthemums, the symbol of autumn and of easy life after retirement. What is unusual is that the inside appears to be completely undecorated (*Pl. 17a,b*).

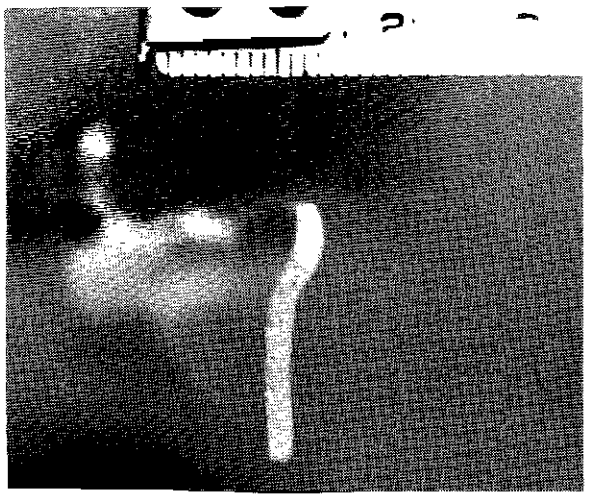
Another unusual shard is one which, except for a thin blue line on the inside mouthrim, is completely undecorated. It has the typical crowcup upturned edge (*Pl. 18a,b,c*), a feature appearing on a few rare pieces which, strictly speaking, are not to be included in Kraak wares.



Pl. 18a

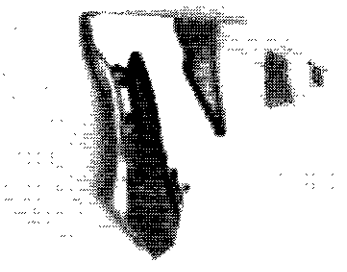


Pl. 18b

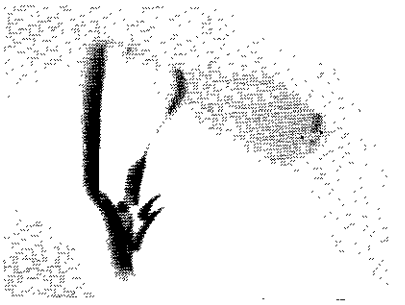


Pl. 18c

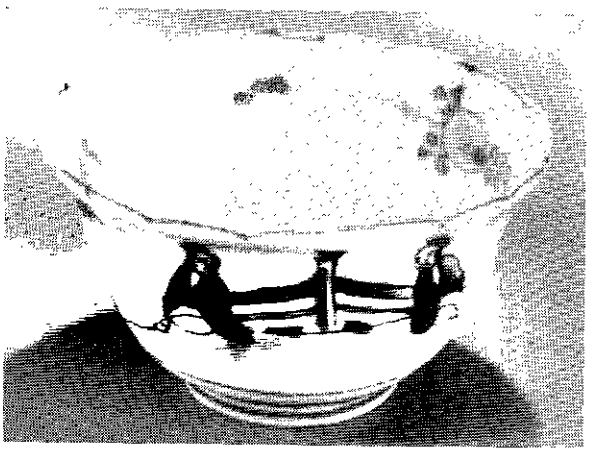
It could also belong to a crowcup without panels which might have had a rather sparse outside decoration, although this type of bowl usually has a blue line on the outside of the rim as well. However, another small shard which is decorated on the outside with a landscape scene and on the inside with a tendril ending with a leaf is possibly from a crowcup without panels, perhaps similar to the one shown next to it in *Pl. 19a,b,c.*



Pl. 19a

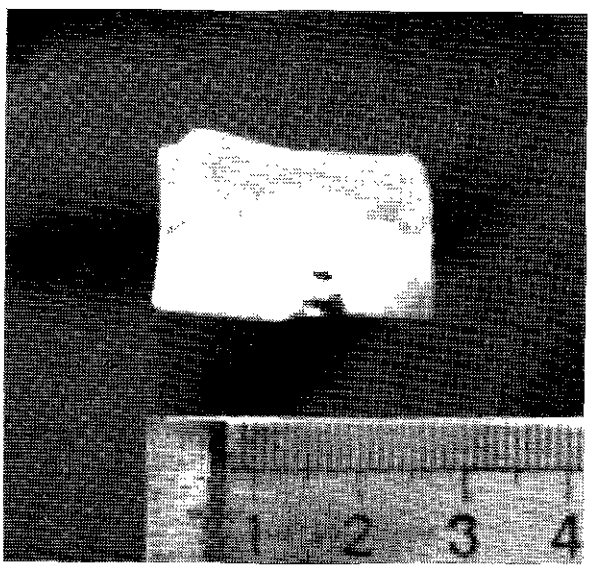


Pl. 19b



Pl. 19c

The last shard illustrated here (*Pl. 20a*) is painted with a motif that is the cause of some disagreement. It could be interpreted as the Buddha's hand citron, a fragrant fruit with the scent of a lemon and which is a Buddhist symbol. It resembles the position of the Buddha's hand in



Pl. 20a

karana mudra, in which the index and little finger are pointing upward while the middle and ring fingers are bent and the tips are covered by the thumb. However, it is a motif which is very common on late Kraak dishes and bowls painted in Transitional style (Rinaldi 1989. pp. 112-3, 163-4 and *pl. 189*). In these wares the motif is often referred to as a "tulip" but in fact it is one of many motifs borrowed from Iznik ceramics and in particular that of a carnation bud. This shard may have belonged to a bowl similar to that illustrated in *Pl. 20b*[25].

Pl. 20b

Other Ming Blue and White Shards

Apart from Kraak porcelain, a wide range of other Blue and White porcelain shards were found. With the exception of a fairly large group of small bowls which have similar characteristics, pieces are often one-of-a-kind, as if they had been selected individually. The quality varies a great deal: from the rustic simplicity of the bowl in *Pl. 33a,b*, surely a piece from a provincial kiln, to the refined piece made with snow-white clay and with a carefully worked *anhua* decoration (*Pl. 37a,b,c*), without doubt a piece made at Jingdezhen.

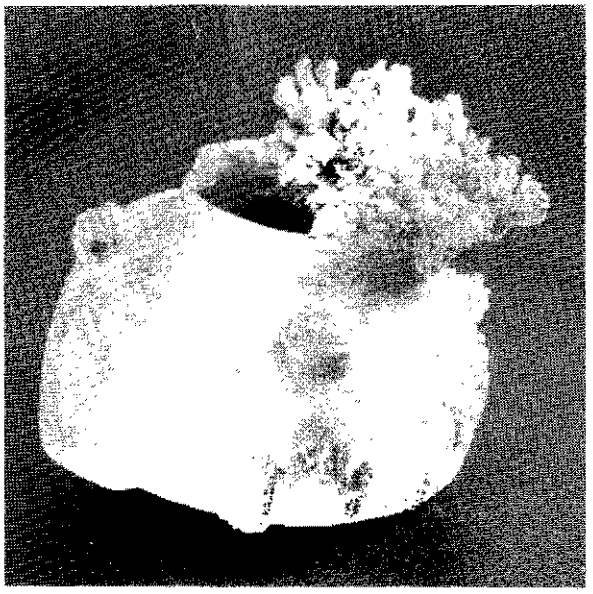
This variety probably resulted from the different channels through which the Spanish obtained porcelain; they dealt with a number of merchants, Portuguese and Chinese, each bringing to Manila whatever he had found available in China at any given moment.

Not only might these pieces have been made in places far away from each other, such as in Jingdezhen or in Fujian kilns, but a few of the shards bear motifs and painting styles which one would be tempted to date a few decades earlier than the rest of the cargo. For example the shard shown in *Pl. 34a,b*, decorated with a prunus spray painted in a rich shade of blue is a piece that could easily be dated late Wanli (c.1600-20), that is to say at least twenty years earlier than the wreck of the *Concepción*. These earlier pieces might have belonged to an old Manila resident returning to his home country and carrying with him the treasures which he had collected over the years while in the East.

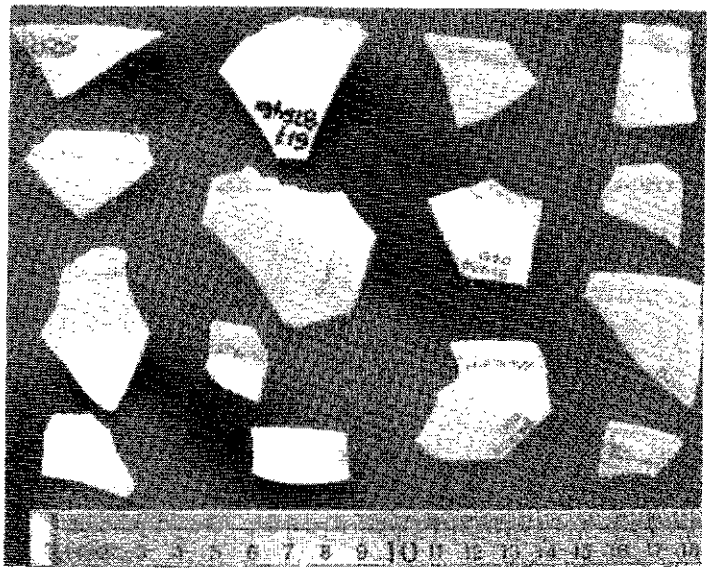
In general, these Blue and White wares are decorated with motifs that denote a strong Transitional style influence: descriptive landscape scenes where the trees often have the v-shaped or crisscrossed leaves so typical of this style. However, with one or two exceptions, these pieces do not have the body characteristics of a Transitional piece nor the typical violet blue color so often described as "violets in milk".

The most important Blue and White piece found in this wreck is the upper part of a jar made of fairly good quality porcelain *(Pl. 21a)*. The wide neck ends with a rolled mouthrim and on the shoulder two of the four original lion mask handles remain (two are broken). The neck is decorated with a classical scroll while the wide body is painted in bold brush-strokes without an outline - a technique somewhat akin to that used on Swatow jars - and depicting a landscape scene with mountains and rivers. The blue is of a medium hue, neither too dark nor too light. The jar is large in size and may have been of about the same height as the almost identical Blue and White jar shown in *Pl. 21b*[30] which is 35.5 cm high. The painting on the latter is somewhat more carefully executed and the scene includes pavilions, boats and trees while the fragment from the *Concepción* has only mountains and a few trees.

Unlike the many stoneware jars recovered from the *Concepción*, that were obviously meant for storage, this Blue and White jar, the only one of its kind found in the cargo, was almost certainly a decorative piece.

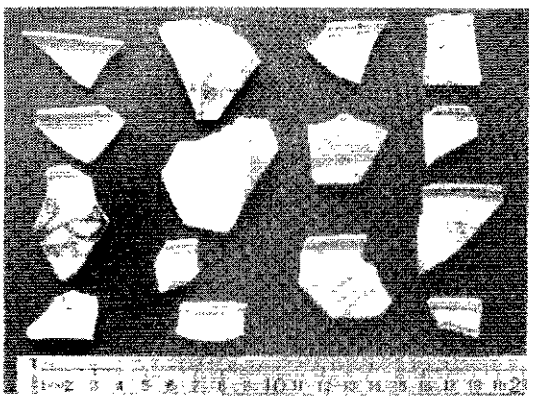


Pl. 21a



Pl. 22a

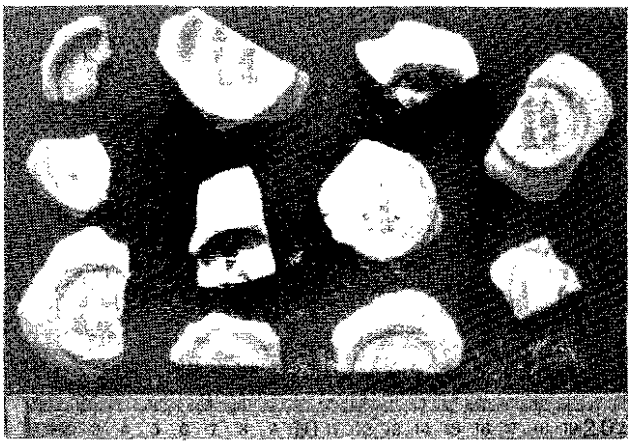
Pl. 21b



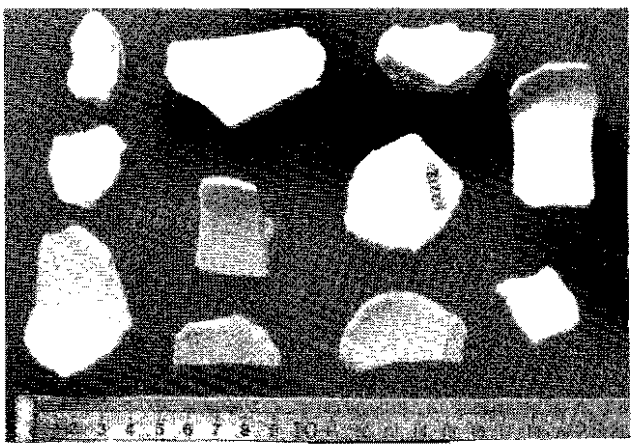
Pl. 22b

The largest amount of shards that are not classifiable under Kraak porcelain are from small bowls. One group prevails: these shards have a rim which is slightly flaring and an inside border of a honeycomb motif interspaced with a flower with radiating lines in lieu of petals (perhaps a chrysanthemum). No other decoration is visible on the inside walls. The outside has a double line around the rim and the walls are decorated with landscape scenes. In some instances the trees in these landscape scenes have the crisscrossed motif so typical of the late Ming style (*Pl. 22a,b*).

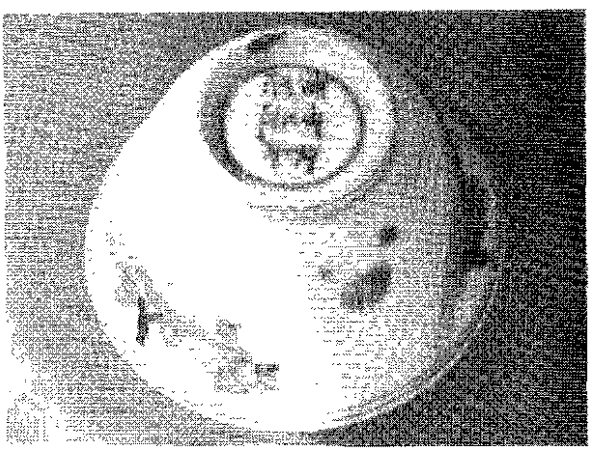
Many bases of small bowls have survived. Most of them have the six-character Chenghua apocryphal mark and the inside is totally undecorated (*Pl. 23a,b*). It is possible that these bases and the wall shards described above (*Pl. 22a,b*) belong to the same pieces. Bowls with the Chenghua mark on the base, undecorated inside and with landscape scenes on the outside walls are very common in this period: nests of six bowls with these characteristics were found in the Hatcher Cargo (*Pl. 23c,d*). However, these last ones do not have the honeycomb-and-chrysanthemum border on the inside rim, which is a very rare feature.



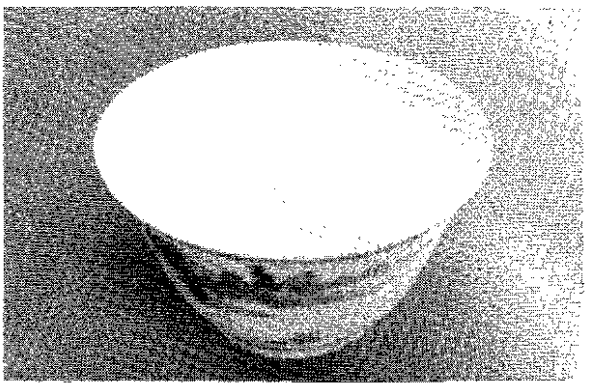
Pl. 23a



Pl. 23b

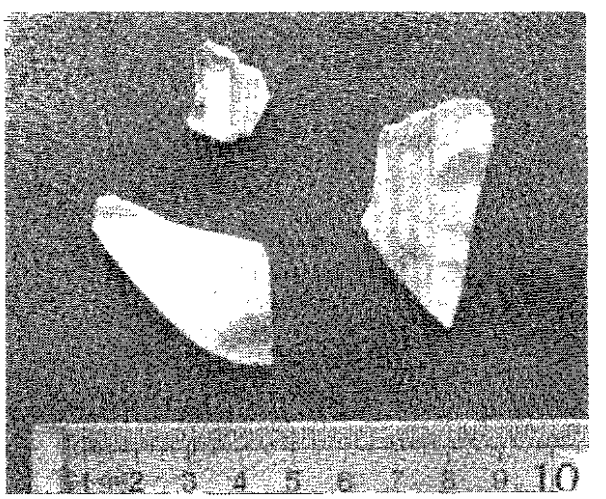


Pl. 23c

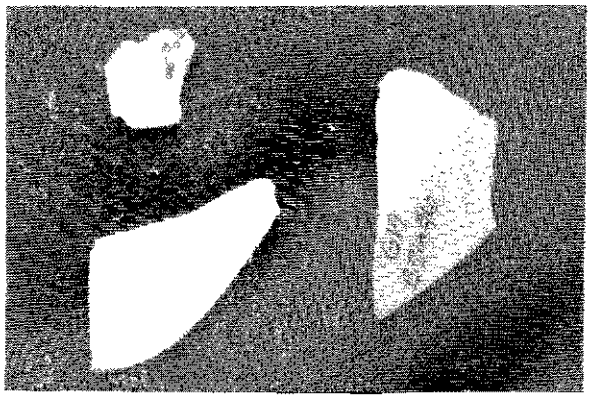


Pl. 23d

Three shards, perhaps from the same bowl, are of fairly good quality, being thinly potted and carefully painted with lines and equally spaced palmettes on the inside rim, while the outside decoration could be that of a landscape scene and narrow panels with hanging ribbons. Although all of these characteristics could identify these pieces as Kraak porcelain, a Kraak bowl with a flaring rim decorated with palmettes is unheard of (*Pl. 24a,b*).

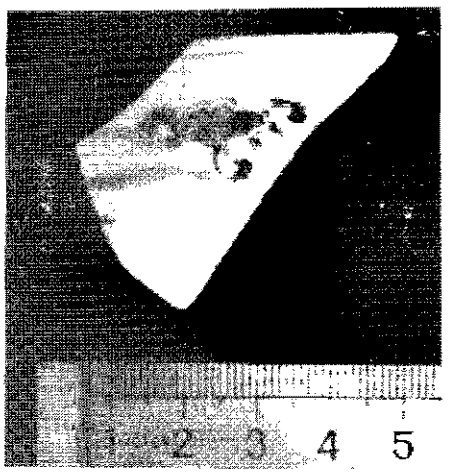


Pl. 24a

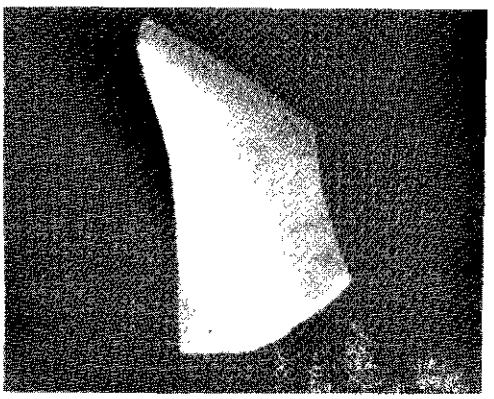


Pl. 24b

Another shard from a bowl with an everted rim has no decoration on the inside while the outside is decorated with a double line on the rim and a ruyi head and ribbons on the wall (*Pl. 25a,b*). This last piece may well belong to a somewhat earlier period than that of the wreck of the *Concepción* (perhaps the end of the Wanli period).

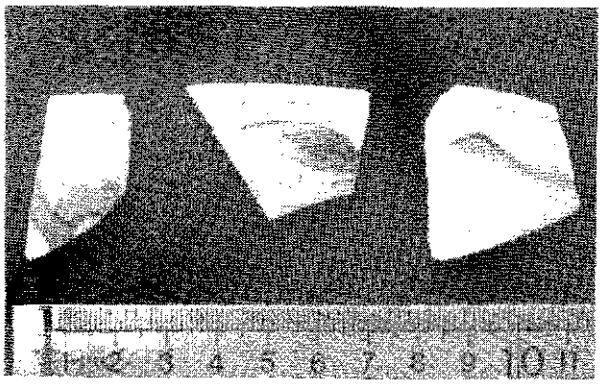


Pl. 25a

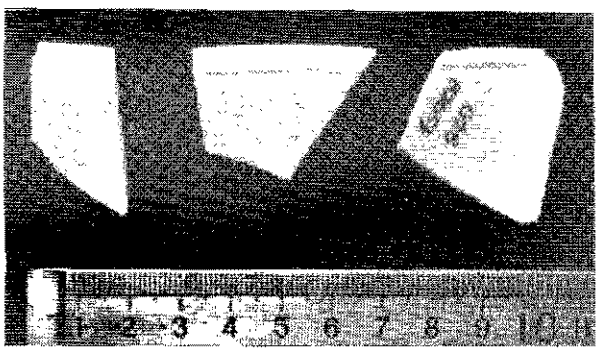


Pl. 25b

A few shards from a number of different pieces belong to bowls with a straight rim. The outside is decorated with landscape scenes while the inside is either devoid of decoration or has only a single or a double blue line near the rim (*Pl. 26a,b*).

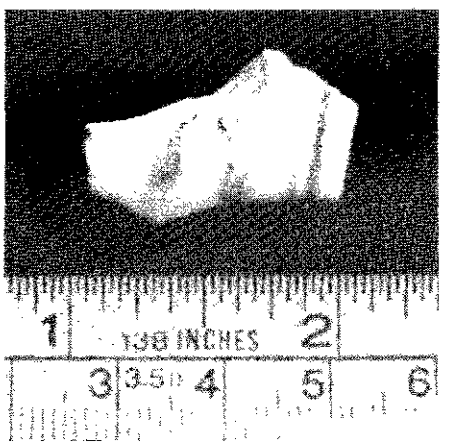


Pl. 26a

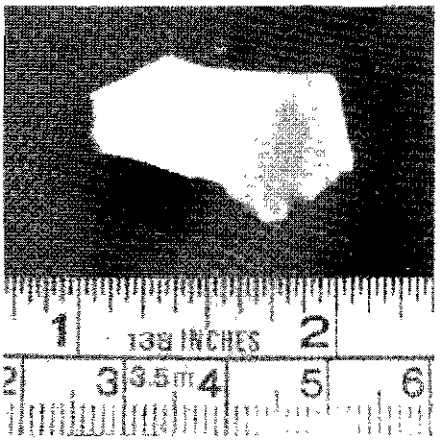


Pl. 26b

Two shards from bowls with a straight rim have a more complex decoration: one has a border of leaves within a double line on the inside rim while the outside has a cloud motif (*Pl. 27a,b*).

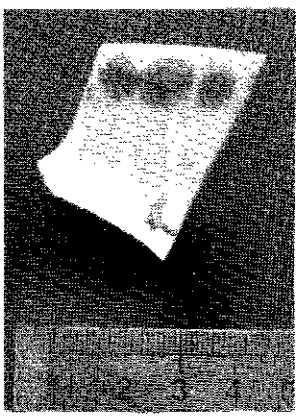


Pl. 27a

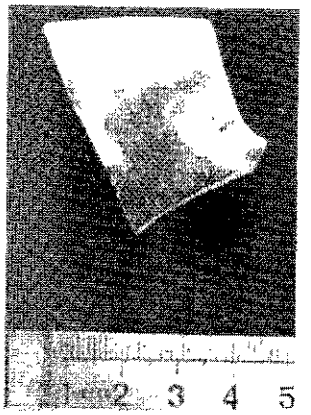


Pl. 27b

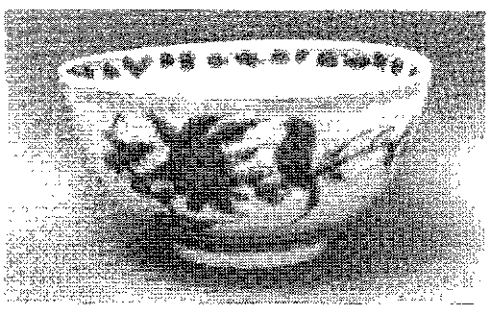
The other shard has a border of large dots on the inside (*Pl. 28a*). Kilburn points out that this is a decoration not found on earlier wares (Sheaf and Kilburn 1988 *pl. 39*). The outside is decorated with landscape motifs (*Pl. 28b*). This shard may have belonged to a bowl similar to the one in *Pl. 28c*.



Pl. 28a

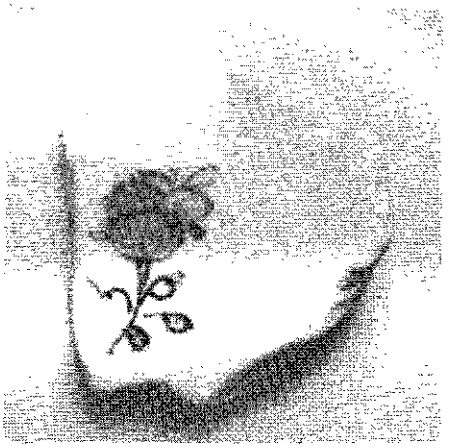


Pl. 28b

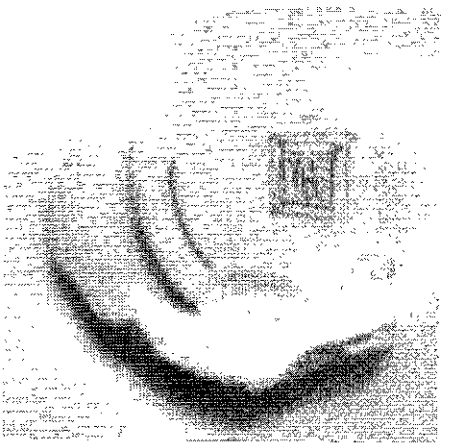


Pl. 28c

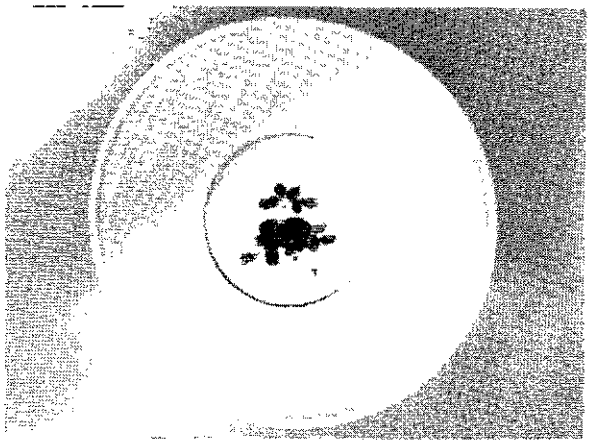
Two bowl bases have the *fu* seal mark. One of the shards is of excellent quality with very refined white clay and the inside is decorated with a well painted peach spray (*Pl. 29a,b*). Perhaps it belonged to a bowl similar to that shown in *Pl. 29c,d*; although this example does not have the seal mark on its base it is of similar quality and has the same peach spray in the center. The other shard with the *fu* seal mark is of a somewhat coarser type and has no center medallion decoration (*Pl. 30a,b*).



Pl. 29a

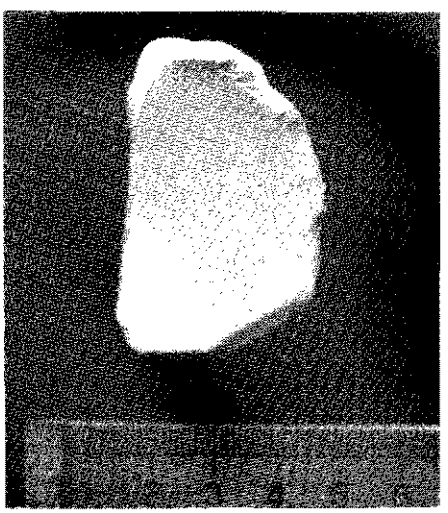


Pl. 29b

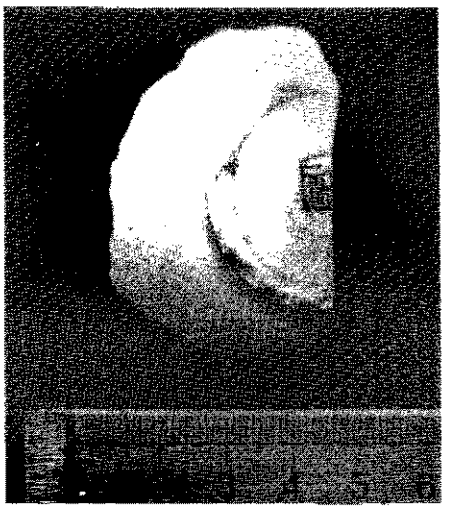


Pl. 29c

Pl. 29d

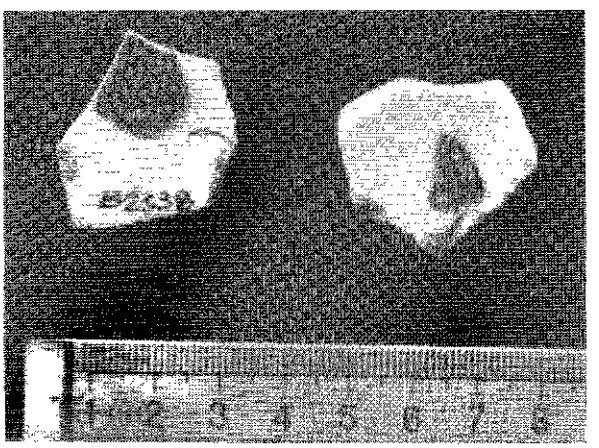


Pl. 30a

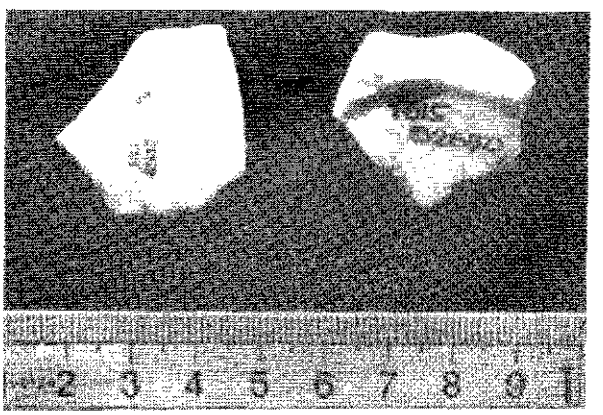


Pl. 30b

Two shards showing two of a six-character mark on the base (perhaps that of Chenghua) have a rather blurred dark-blue decoration on the inside, perhaps leaves. However, they are slightly coarser than the base shards mentioned above and may have been made at a provincial kiln (*Pl. 31a,b*).

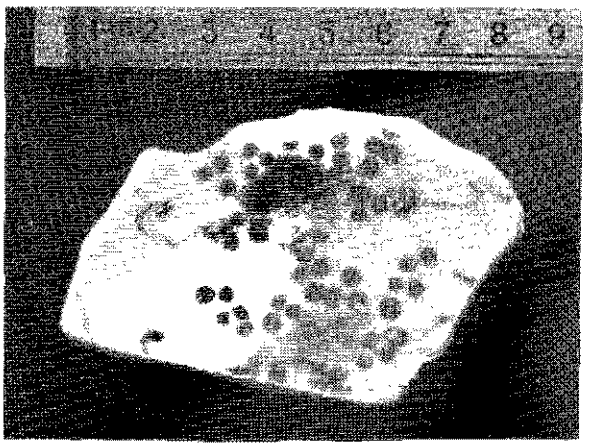


Pl. 31a

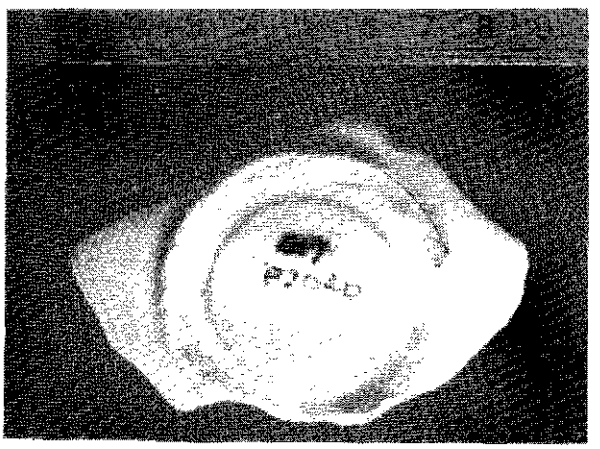


Pl. 31b

Pl. 32a,b shows a shard belonging to the base of a bowl with an unusual center medallion: vines and dots placed in two groups, perhaps representing grapes. This base has a blue circle and it is rather thick for its size but of fairly good quality.

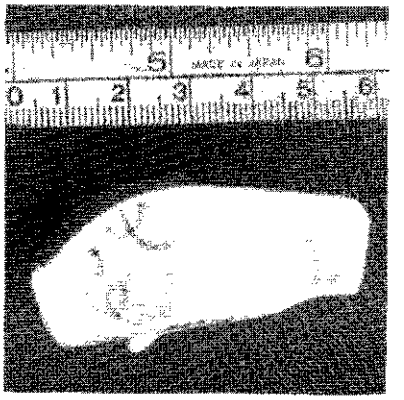


Pl. 32a

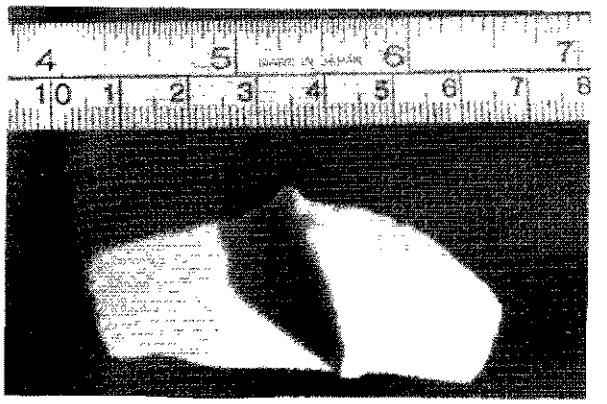


Pl. 32b

A shard from the base of a medium-sized bowl has a curious decoration around the center medallion: a border with stylized flowers depicted with groups of lines radiating from small circles. The footring has the typical late Ming shape and is painted with a blue double-line *(Pl. 33a,b)*.



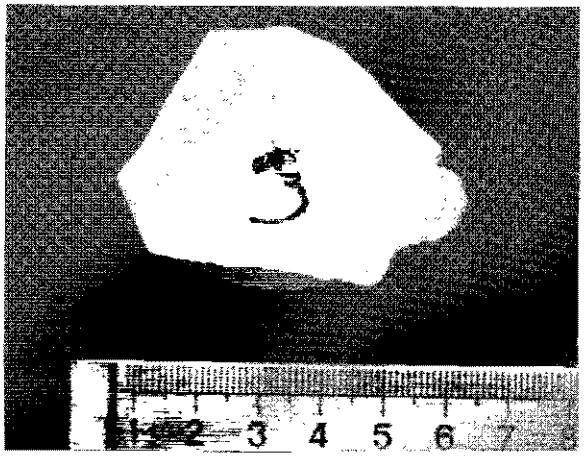
Pl. 33a



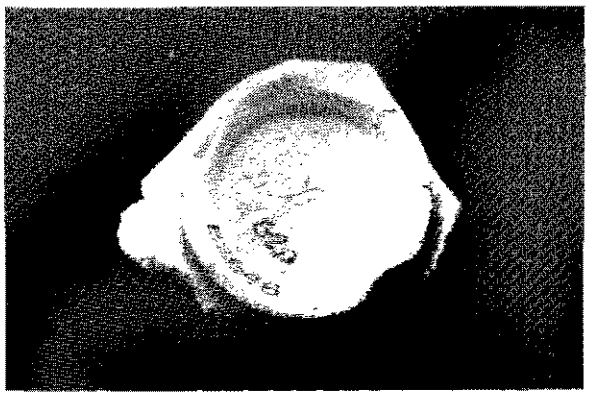
Pl. 33b

One bowl shard has a Chinese character painted in the center, perhaps a devolved "long life". This highly stylized character may have been painted by an illiterate potter. Of coarse manufacture, the base is unglazed and shows the poor-quality clay from which this pot was made. The glaze is greenish and heavily crackled *(Pl. 34a,b)*. It is surely the product of a provincial kiln, most likely in Guangdong or Fujian Province. It is without a doubt the coarsest piece among the shards studied here. This bowl could have belonged to a Chinese member of the crew of the *Concepción*.

With the exception of the large jar, only shards belonging to small bowls have been discussed so far. However, in this non-Kraak category there are a few shards which belong to shapes difficult to identify.

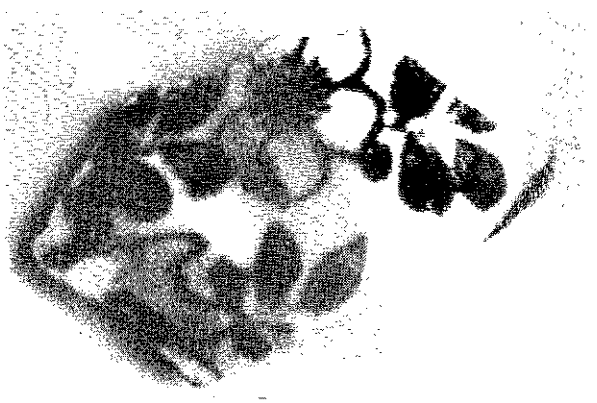


Pl. 34a

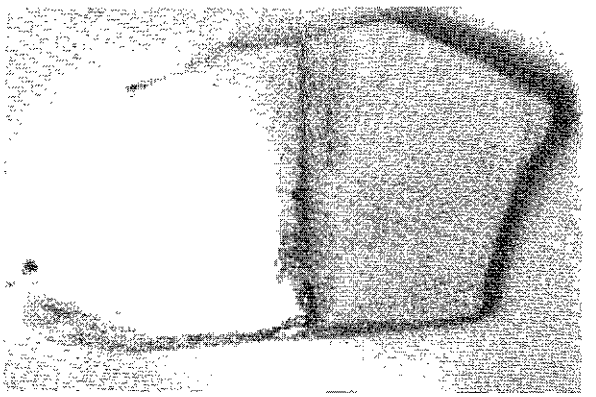


Pl. 34b

The shard in *Pl. 35a,b* is rather thick, is shaped with a gentle convex curve and shows the luting of two pieces. Thus it may be from a rather large bottle, a vase or perhaps a jar. The prunus flower and leaves are painted in an intense blue. Both the motif and the quality of the blue seem to indicate that this piece may have been made somewhat earlier than the rest of the cargo (late Wanli period).

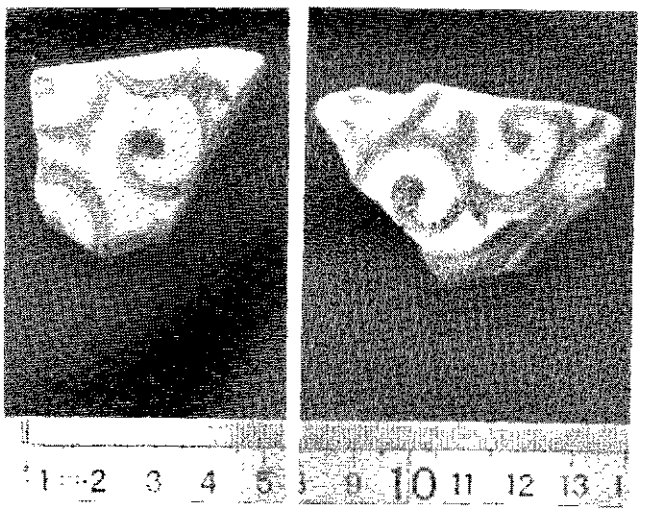


Pl. 35a

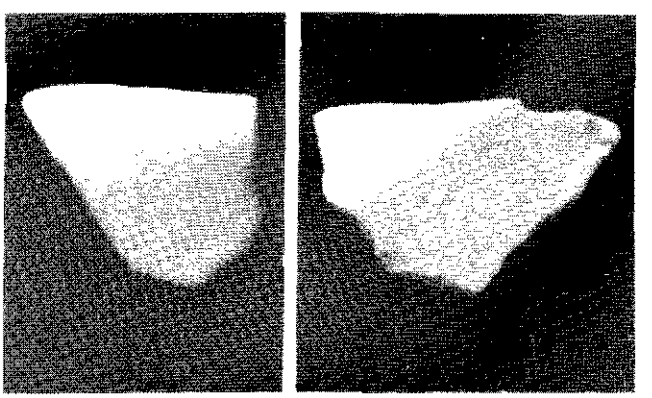


Pl. 35b

A few rather thick shards belong to what must have been a fairly large bowl decorated with a continuous scroll (*Pl. 36a,b*). The inside is covered with a bluish glaze but it is otherwise undecorated.

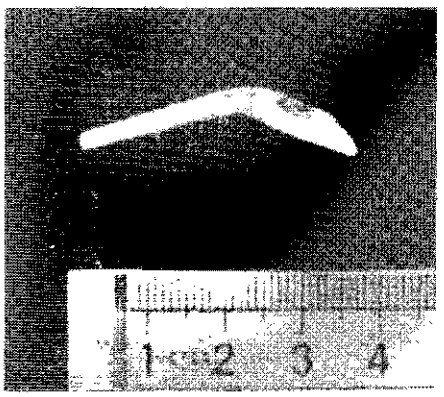


Pl. 36a

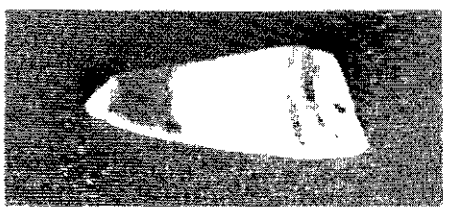


Pl. 36b

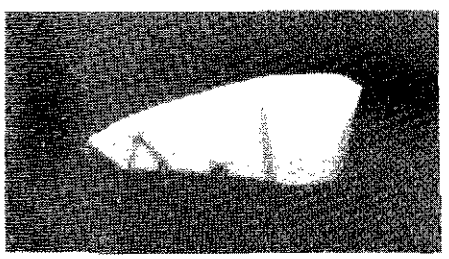
The next shard (*Pl. 37a,b,c*) poses a riddle: it is luted at a sharp angle and decorated more heavily on the convex side (outside ?) than on the concave side (inside?)? It cannot belong to a closed shape (e.g. a square or "gin" bottle) because it is also decorated on the "inside". It is not bent at a right angle so it is unlikely that the shape could have been a box. It is thinly potted and, therefore, whatever other shape it belongs to must be quite small.



Pl. 37a



Pl. 37b



Pl. 37c

While most bowl shards in this cargo are decorated in Transitional style, only the two shards described below have the porcelain quality and shape of Transitional pieces.

Transitional wares are a distinctive type of porcelain produced in the period of transition between the Ming and Qing Dynasties. It is generally accepted that the Transitional period goes from 1622 to 1683, that is to say during the two last reigns of the Ming Dynasty (Tianqi 1621-27 and Chongzhen 1628-44)) and the first reign part of the second of the Qing Dynasty (Shunzhi 1644-61 and Kangxi 1662-1722).

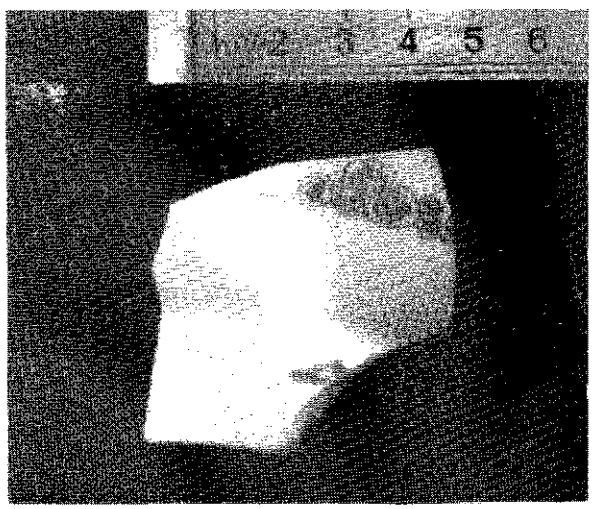
Characteristics of the Blue and White Transitional wares include well-potted bodies made from clay devoid of impurities and covered with a rich glaze which often has a slightly bluish or greenish tinge. Shapes are mostly decorative and they include vases, jars, brush pots, incense burners, kendis, etc. Some European shapes were also produced within this group (e.g. mustard pots, tankards, etc.). There are no flat shapes (i.e. dishes) that can be defined as being "Transitional". Although some dishes may be decorated in "Transitional style", the body does not comply with Transitional characteristics.

The rounded shapes found in Transitional wares lend themselves admirably to the depiction of landscapes or lively scenes with figures. These scenes show a departure from the decoration seen on earlier wares where figures usually represented sages or Daoist Immortals in contemplative poses. Here the scene always tells a story and figures are shown in movement. The inspiration for these scenes is usually taken from illustrations of books such as the *Romance of the Red Chamber* and others that had become popular at that time, thanks to a more widespread use of woodblock printing. Wares decorated with such scenes had great appeal among the educated gentry and the rich merchants (Sheaf & Kilburn 1988, p.46) as well as among Europeans because they depicted a microcosm of Chinese life on no more than a few inches.

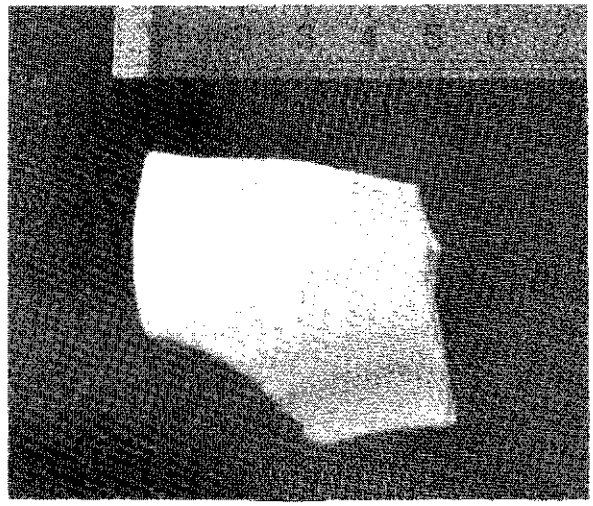
Descriptive scenes are not the only motifs depicted by the skilled potters who painted Transitional wares. Landscapes and naturalistic motifs never lost their popularity and the blue cobalt with a violet tinge, so typical of these wares, is often used to depict birds and mythological animals, plantain leaves and flower sprays. These include flowers whose designs were inspired by Europeans, e.g. the so called "tulip" and "Dutch flowers" (Rinaldi 1989, pp. 112-3).

The shards described below are the only ones that may belong to a Transitional vessel. This is particularly so for the first shard described below.

The shard illustrated in *Pl. 38a,b* is perhaps of the highest quality among those recovered from the cargo of the *Concepción*. It is very finely potted with very white clay containing no impurities and it is covered with a thin, unctuous glaze which is slightly greenish. The shard is too small to indicate clearly the shape to which it belongs, but most probably it is that of a barrel-shaped jar. It has a straight neck ending with an unglazed, rather sharp-edged mouthrim which would take a lid, and a shoulder which swells very gently outward (*Pl. 38c*). Although the barrel-shaped jar is a typical Transitional shape, this shard has a classical decoration which, at first sight, seems to owe nothing to the Transitional style: it is decorated with a finely incised scroll arranged in a band on the shoulder[31] and below this there is a carefully painted border of continuous ruyi heads or collar lappets. This is a motif which is very typical of the Wanli period; however, Kilburn has this to say when he describes Transitional style decoration: "Lappet, ruyi heads and flame borders can also occasionally be found. In fact, these border patterns are the only feature carried over from Wanli wares." (Sheaf and Kilburn 1988, p. 46). Kilburn also notes that among the twenty-two known dated Transitional pieces there are five with incised bands and these are all dated before 1638. Yet, a brush pot from the Hatcher Cargo also has an incised band (Sheaf & Kilburn 1988, *pls. 74-5*).



Pl. 38a



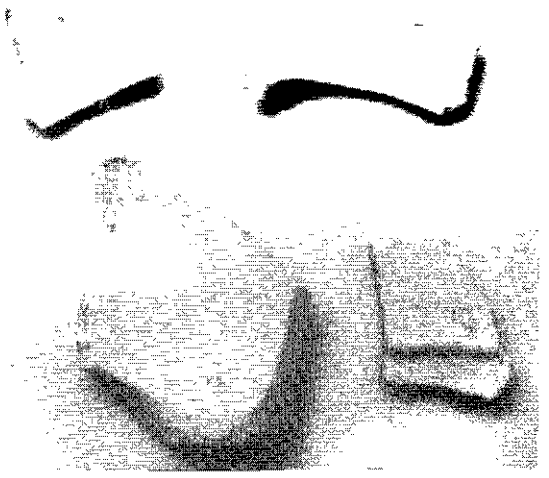
Pl. 38b

Pl. 38c

The largest of the shards shown in *Pl. 39a,b* is from a vessel which had a flat unglazed base. The wall climbs vertically from the base and the glaze stops short of it. It must have been a cylindrical piece of some sort, perhaps a brush pot (*Pl. 39c*). However, the smaller shard, which could belong to the same piece since glaze, body and blue color are very similar, clearly shows signs of luting. In this case the piece might have been a vase, perhaps a *rolwagen* (*Pl. 39d*).

Pl. 39a

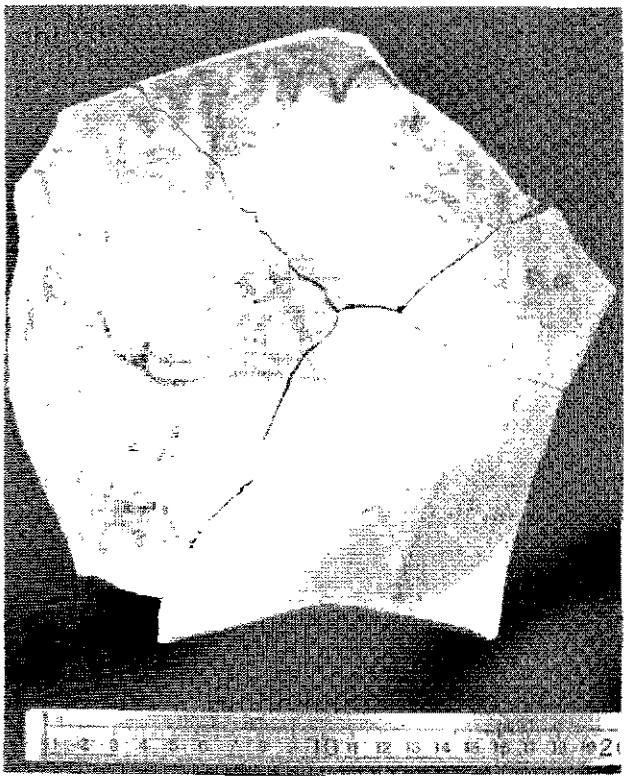
Pl. 39c



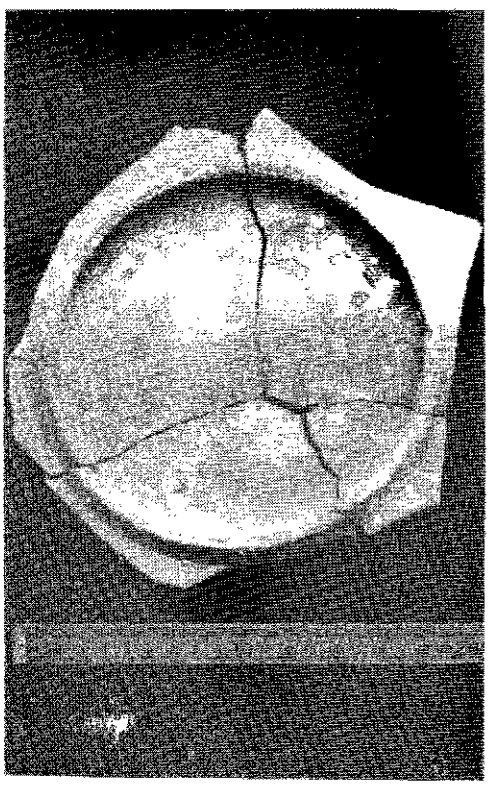
Pl. 39b

Pl. 39d

Four shards from the base of a Swatow dish have been found. Swatow wares are provincial wares made in kilns in southern Fujian Province and in the northern area of Guangdong Province, not far from the port of Shantou (named Swatow in seventeenth century Dutch records) from where these ceramics were exported. With few exceptions Swatow wares are large, heavy pieces such as jars and dishes made of stoneware and, occasionally, of porcelain. Distinctive features are the overall coarseness of the ware, this being particularly evident in the large amount of grit adhering to the footrings. The painting in either underglaze blue or enamels is bold and unrestrained with swift brush-strokes depicting naturalistic motifs that are often similar to those used to decorate Kraak porcelain. The four Swatow shards form the complete base of a dish of very coarse manufacture (*Pl. 40a,b*). The decoration of the center medallion is that of a phoenix in a garden setting, this being one of the most typical Swatow motifs. The phoenix or *feng huang* is the Chinese symbol of the empress but it also represents the sun and warmth of summer and the harvest which is carried out during that season. It is this second interpretation that is the one most likely represented in this low-quality provincial ware. The clay is reddish and slightly brittle, the glaze is grayish and the cobalt has failed to reach the desired blue, all indications of underfiring.

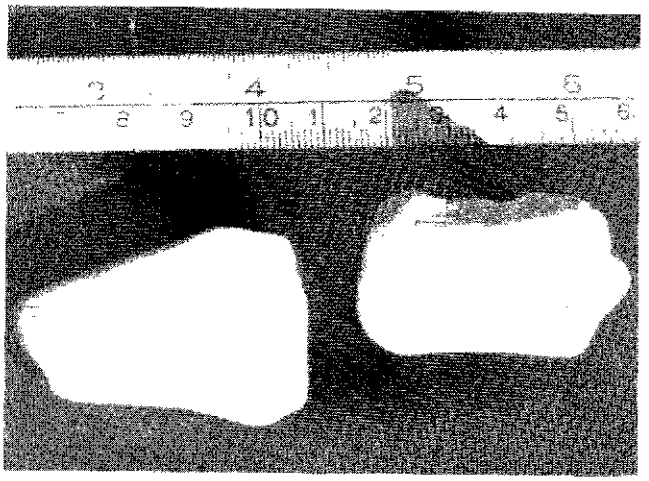


Pl. 40a



Pl. 40b

Two more shards have Swatow characteristics (*Pl. 41*). One is made from gray clay with many black impurities and the cobalt as well as the glaze have a grayish tinge. The second shard is made from a slightly more refined clay which is buff in color while the cobalt has turned blue, albeit with a dull hue, indicating that this shard was fired at a higher temperature and in a better-controlled reducing atmosphere than the first one.



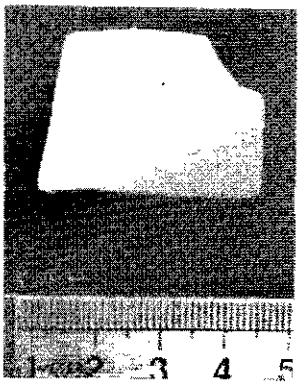
Pl. 41

Late Blue and White Shards

A small group of shards with some sort of blue and white decoration were found in the area of the wreck of the *Concepción* and they do not belong to the first half of the seventeenth century. Unfortunately, for the most part they are too small to offer positive identification but a nineteenth or even early twentieth century dating is possible. In fact, one or two of them seem to have a transfer decoration.

To find later-period porcelain together with the wares belonging to an earlier shipwreck load is not uncommon (Pijl-Ketel 1982, pp. 250-60). Since the *Concepción* wreck is very close to the beach, it is possible that the local population would have disposed of broken pieces by throwing them into the sea, with the shards falling in the same general area as the shipwreck.

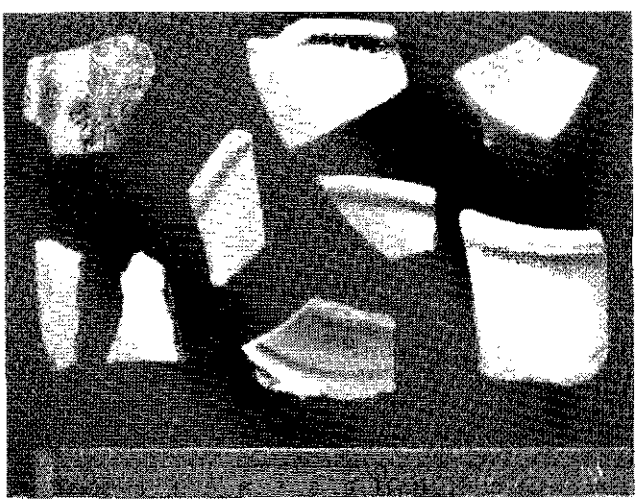
One shard is covered with a grayish, cracked glaze and is decorated with underglaze cobalt which has failed to produce the desired blue color (*Pl. 42a,b*). This shard bears a close resemblance to dishes of coarse manufacture which William Willetts has termed "Kitchen Ch'ing" and dated nineteenth century (Willetts 1981, p. 88).



Pl. 42a *Pl. 42b*

Only a photograph of the rest of these shards is included here, as they do not seem to offer any valuable information at this time (*Pl. 43a,b*).

Pl. 43a



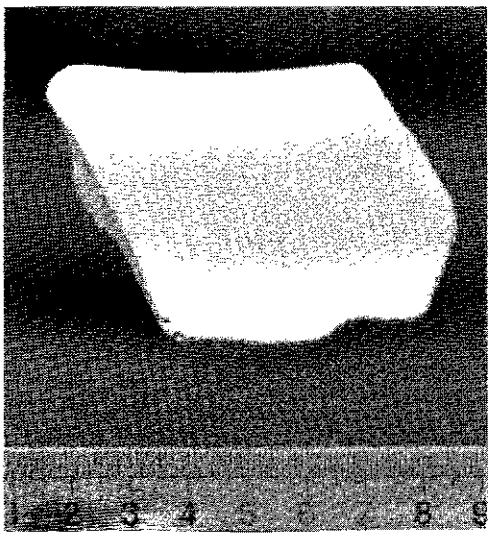
Pl. 43b

MISCELLANEOUS CERAMICS

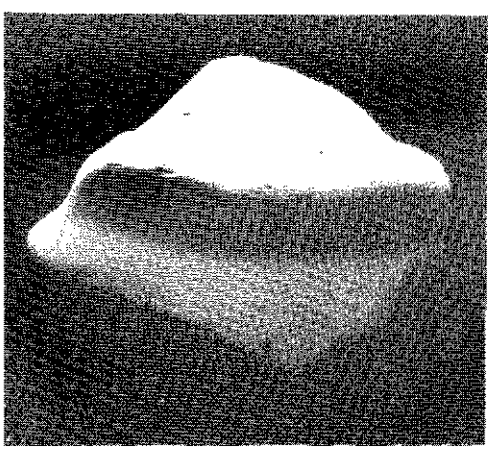
Celadon Shards

Of the few celadon shards found in the wrecksite, only one is large enough to give some information (Pl. 44a,b). It measures 7 cm in length and is part of a dish base. It is high-fired stoneware, heavy for its size and the footrim is thick and unglazed while the inside does not show any decoration. These characteristics correspond to a late Yuan period (fourteenth century).

Yuan Dynasty porcelain and stoneware are common in the Philippines, bearing witness to the brisk trade that Chinese and other merchants carried on between China and the archipelago at that time. Here again, these pieces may have been the treasured possessions of a Manila resident returning to Spain.



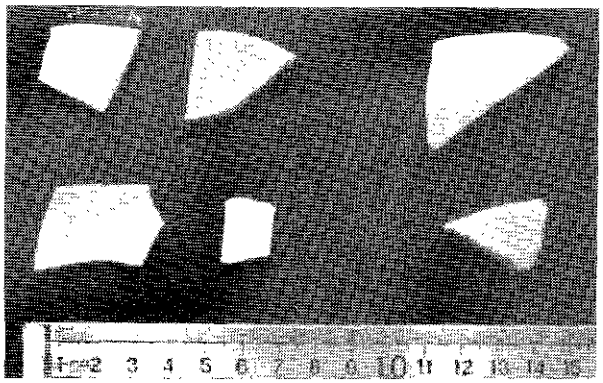
Pl. 44a



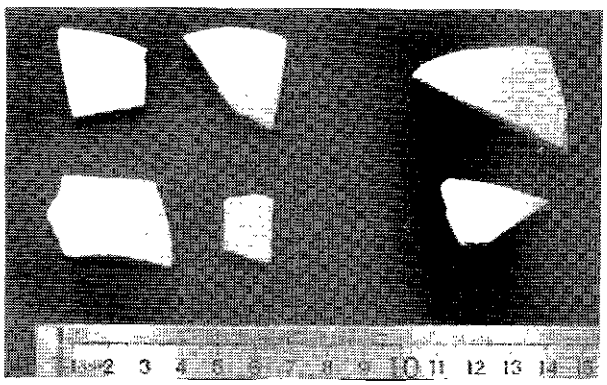
Pl. 44b

Qingbai[32] Shards

A small number of shards which are covered with a thin, bluish-green glaze may be from wares with a qingbai (also known as yingqing) type of glaze (*Pl. 45a,b*). It is somewhat difficult to be certain because the shards are very small (only a few centimeters long) and the glaze is fairly eroded.



Pl. 45a



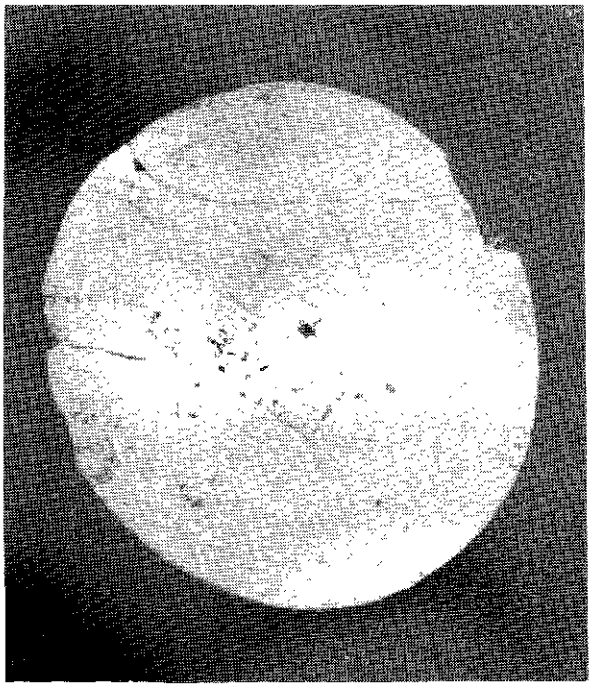
Pl. 45b

Four of these shards are convex and very thin, possibly from a small bowl; no decoration is visible (e.g. incised or slip). The clay is very white and the shards are high-fired, resulting in the perfect vitrification of body and glaze.

Two small shards are thicker and the body is made from a far less refined clay than the one used for the shards described above: it is buff and has some small impurities, and there is also a clear demarcation line between glaze and body and these characteristics indicate that they were not fired at a very high temperature. The glaze is thick and bluish-green.

Porcelain Support Disk

A support disk of 5.1 cm in diameter was found among the ceramics from the *Concepción* (*Pl. 46a*). It is extremely thin and made from very white clay. It shows a clear textile imprint because it was probably shaped by pressing a small clay slab on a piece of coarse cloth.



Pl. 46a

Clay disks such as this one were used as support for bowls which were placed inside the saggar, so that the porcelain vessel was not in direct contact with the bottom of the saggar. This is proven by traces of glaze in the shape of a circle, surely where the glaze had dripped off the footring of a small bowl which must have remained attached to the disk. Such an occurrence is not rare, as shown in *Pl. 46b* which illustrates a crowcup still stuck to a clay disk.

Several disks of this type were found at the *Mauritius* wrecksite; they were a little larger than the one described above (about 6.5 cm in diameter). Because they fitted the recessed bases of hole-bottom saucers found in that site, Michel L'Hour suggests that they were placed inside the base of these saucers as a buffer (L'Hour et al. 1989, pp. 170-1).

A similar clay disk was found in the Ko Si Chang One wrecksite (Green 1983, p. 32, KSC1 1983 387).

Pl. 46b

CLASSIFICATION OF STONEWARE AND EARTHENWARE JARS

Of the 156 archaeologically intact[33] storage jars salvaged from the *Concepción*, all are stoneware jars of Oriental provenance except for a small earthenware olive jar of European origin.

The jars are devoid of decorations, thereby stressing their purely utilitarian purpose. Jars of this type were used as storage containers for all sorts of commodities: for liquids such as wine, water or oil; for powders such as flour, saltpeter, salt, etc.; for food such as eggs and vegetables. They also served to protect fragile goods such as porcelain. These jars were used over and over again and a thriving market for second-hand jars existed all along the trading routes of Southeast Asia.

Jars were particularly coveted in those countries where the production of glazed stoneware was non-existent or minimal, such as in the tribal areas of the Philippines, Borneo or Indonesia where the better quality jars became precious heirlooms. It was a popular belief that some of these jars had magical powers and that some could even talk! Beyond the realm of the magic, the jars had the down-to-earth function of giving the measure of wealth and social status of the family. In many parts of Southeast Asia, jars were often used in burial rites. However, this was seldom the case for jars of the type found on the *Concepción* because, compared with the ornate jars favored by indigenous populations, they were quite unappealing in terms of design and craftsmanship.

In Asia, jars have been given different names by different people. The term "martavan" is well known among Westerners and Asian. It is a name that has been in use for centuries, certainly even before the first Europeans sailed across the Indian Ocean in the early sixteenth century.

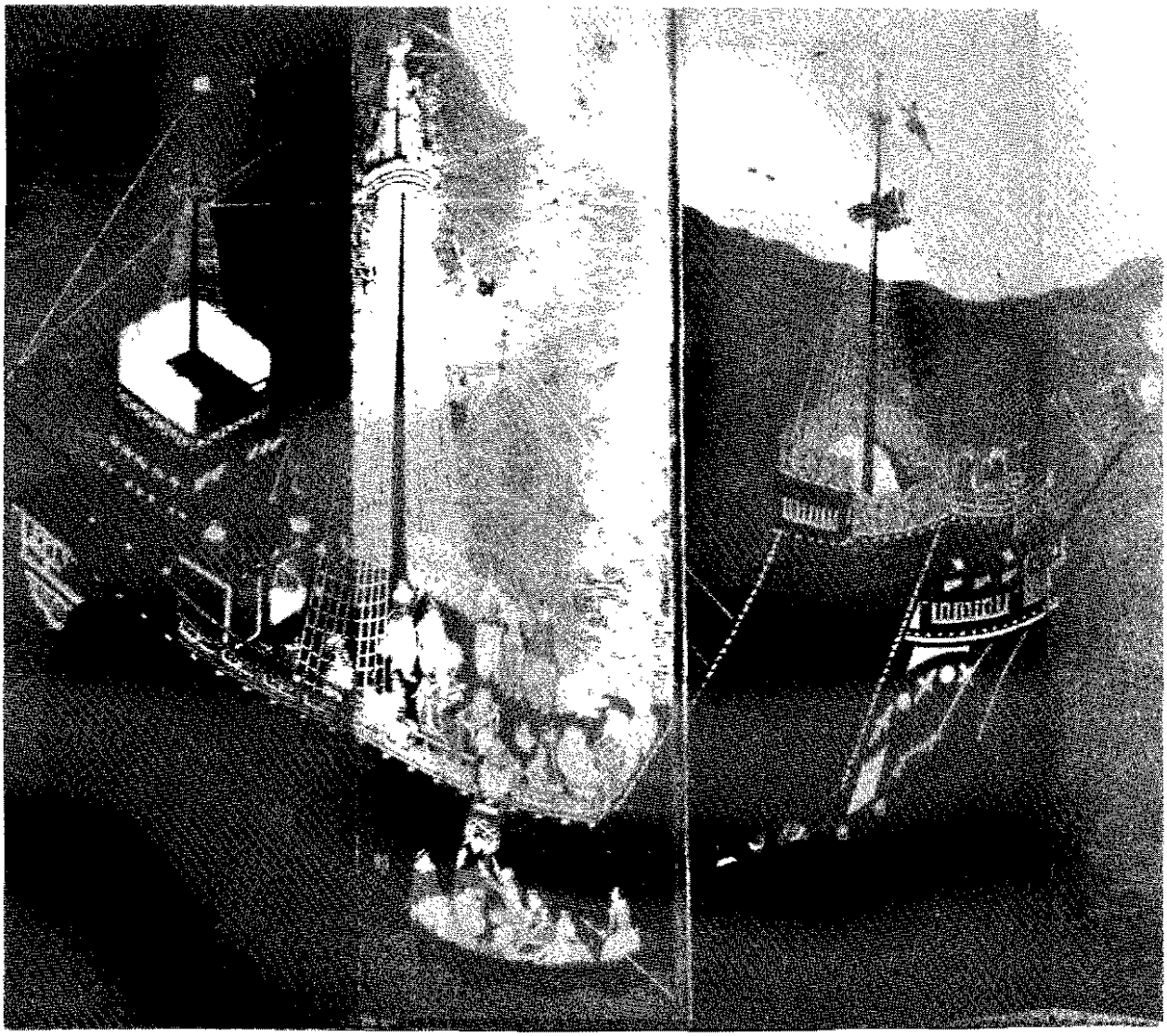
The name derives from Martaban, an important port in South Burma from where large quantities of ceramics, particularly jars, were exported. These were shipped from Bohmo at the western end of the famous "Burma Road" in Yunnan, South China; from the town of Pegu, not far from Martaban and a great producer of jars; and surely Thai jars must have been sold there also since the border between the two countries is nearby.

Other names used to describe jars usually found in Southeast Asia are: *tempayan*, an Indonesian word which means "container of cassave" (fermented rice), a very popular drink in Indonesia (Adhyatman 1984, p. 48). *Gusi* (or *guci*), *jampa*, *tajao*, etc. are terms also used to indicate jars, although they are more specific and are usually used to indicate a particular type of jar. As most of these jars are decorated with dragon motifs they are often also referred to as "dragon jars".

The jars have no handles and consequently are difficult to move. The question of how they were carried arises and the answer is to be found in one Japanese screen attributed to the Kano Domi school and painted between 1593 and 1600 (*Pl. 47*).

The screen depicts the unloading of a Portuguese *nao* in the Bay of Nagasaki. A detail of this screen (*Pl. 48*) shows two small jars at the far right end of the boat: they are encased in a rattan or rope net on which two handles have been woven. One can surmise that they were probably carried by one or two persons, depending on how heavy they were.

The jars are sturdily built and capable of withstanding a great deal of rough handling. This is made obvious by the fact that these are the ceramic objects which are most often recovered intact from shipwrecks. The prolonged life of these jars creates a serious problem in dating as they may have been in use for several decades prior to the occurrence of the shipwreck. Furthermore, stylistic changes which often define more sophisticated wares are minimal in the case of these utilitarian shapes, and the same types of jars may have been made for centuries.



Pl. 47

Pl. 48

A peculiarity of the jars in question is that, with few exceptions, they bear marks which have been carved through the glaze. These inscriptions, which appear on some jars as a series of letters and on others as symbols, could have been the owners' initials or they could have indicated the contents of jars. These markings are of the greatest interest since no other cargo either from Dutch or Portuguese shipwrecks has yielded jars with this type of marks. The marks have been studied in detail at the end of this chapter.

Only two jars have part of their contents intact. Analysis of this substance revealed that it is an aromatic resin: benzoin, the product of a tree of the Styrax genus. These trees grew in Sumatra and in Thailand but not in the Philippines, consequently this resin must have been bought in any of the above mentioned locations and transshipped in Manila. Benzoin, known in Malay as *kemeyan*, was a product of considerable value, so much so that it was part of the rich presents given in 1498 to Vasco da Gama by the Zamorin of Calicut. In Europe benzoin was particularly valued for its medicinal properties (it was used as an expectorant), as well as an aromatic product and in this respect it was considered even more valuable than frankincense. To have found this substance in the *Concepción* cargo does not come as a surprise since aromatic resins were among the items most often traded in Asia. Benzoin was also found in the Ko Si Chang One site (Green 1983, p. 27).

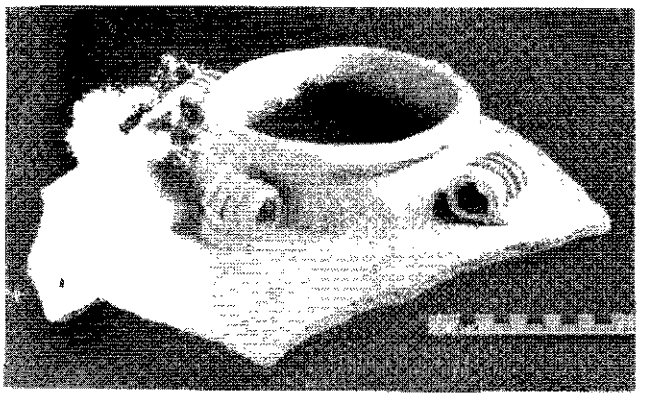
There are eight different types of jars recovered from the *Concepción* and here they have been classified by groups from A to H.

TYPE A

This is the largest group and contains 127 pieces. The jars have a rolled mouthrim, a short conical neck and wide rounded shoulders with the body tapering to a small base which is either flat or slightly convex (*Pl. 49*). Four grooved and rolled lugs are attached vertically to the base of the neck. The shape of the lugs can be surmised from a large shard which still has the four lugs attached to it (*Pl. 50*). The lugs are missing on all the other jars of this type.

Although the primary function of the lugs is to secure the lids, they were also used on board ship to tie the jars to one another and fasten them to a pole so that they would not roll in bad weather. It is obvious that when the ship foundered the lugs were unable to support the weight of the jars and were torn off.

Pl. 49

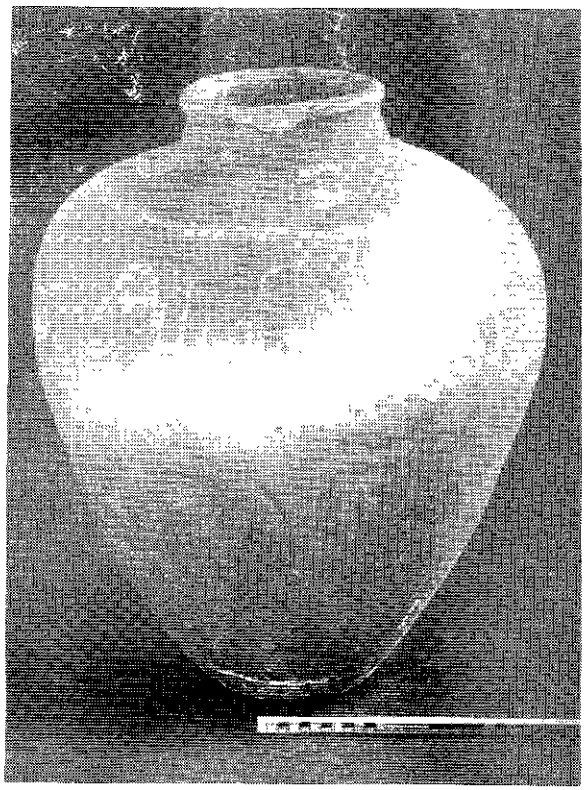


Pl. 50

The body material varies a great deal. Although the majority of jars are made from a fairly refined buff clay of different hues, some are made of an extremely coarse, sandy dark gray clay while others have a reddish, or at times grayish body.

The glaze, which, after 350 years under water is markedly eroded, usually stops short of the base and often shows signs of dripping. The insides of the jars are either completely or partially glazed. Bases are not glazed. The glaze colorant is an iron oxide usually fired in an oxidizing atmosphere and resulting in dark brown colors, although some of these jars have a glaze which has turned completely or partially greenish as a result of having been fired in a reducing atmosphere, albeit improperly controlled.

Another peculiarity of these jars is that most of them have one or more unglazed circles on the shoulders (*Pl. 51*). The purpose of these circles is unclear; they are perhaps the marks left by supports placed on top of the jars to allow a number of smaller wares to be fired together with the jars. The jars were fired one on top of the other which would explain why some do not have the unglazed circle.



Pl. 51

The provenance of these jars is the subject of some controversy among scholars. In her book *Pusaka. Heirloom Jars of Borneo* (Harrisson 1986), Barbara Harrisson gives a Vietnamese provenance to a jar (ibid. *pl. 74*) with characteristics very similar to those described here for jars of Type **A**, and in two letters addressed to Pacific Sea Resources Ltd. (dated 3 November and 8 December 1988) she indicates that these jars are Vietnamese, from the Go-Sanh kilns. Neither in her book nor in her letters does Dr. Harrisson offer any evidence to substantiate a Vietnamese provenance.

Mr. Ha Thuc Can is also of the opinion that these jars were made in Vietnam; however he too failed to provide any documented evidence for this claim[34].

On the other hand, Roxanna Brown disclosed to the author that only a few shards belonging to brown-glazed jars have been collected at the site of the Go-Sanh kilns and they belong either to jars decorated with dragons in relief or to jars decorated with incised motifs (see Roxanna Brown 1988, *pl. 22c* and *color pl. XVb, c*)[35]. The only similarities which these jars have with those presently under study are the rolled mouthrim and the conical neck. However, this does not seem evidence enough to assign the latter to the Go-Sanh kilns, particularly when other characteristics such as shape, clay and glaze do not match those found at the Go-Sanh kilns.

Among the experts contacted by the author to give their learned opinion, Sumarah Adhyatman is the only one to have studied the jars first-hand and in her opinion these jars are likely to have been made in Guangdong Province. Mrs. Adhyatman bases this affirmation on shards of similar type which she has studied in a recent trip to Guangzhou.

Tome Pires, the legendary early sixteenth century Portuguese adventurer, gives this evidence of Cochin China, which he places between the kingdom of Champa and China, "They have porcelain and pottery - some of great value - and these go from there to China to be sold"[36]. This could give some historical support to a Vietnamese provenance for these jars, but one should bear in mind that Tome Pires was often inaccurate and related second-hand information. Furthermore he wrote the above passage in the second decade of the sixteenth century and that information may not have been relevant a century later.

One reason for doubting a Vietnamese provenance is that among Oriental ceramics found in the Philippines, Vietnamese ceramics represent a very small percentage[37], whereas this type represents the great majority among the jars from the *Concepción*.

In assessing these jars one should bear in mind the following facts: the bulk of goods shipped to the Philippines came from South China, particularly from Guangdong and Fujian provinces; neither Chinese nor Portuguese merchants bartered the goods which they had brought from China for local products: they sold them for silver coins and consequently had no need to carry back the jars. It is obvious that the Spanish had a surplus of second-hand jars which they could use as storage containers on board their yearly galleon from Manila to Acapulco and certainly had no need to order storage jars especially from Vietnam, as suggested by Mr. Ha Thuc Can[38].

There is another reason why these jars may have been made in south China: although merchants along the Guangdong and Fujian coasts may have bought the superior Vietnamese blue and white wares which were probably cheaper and more easily available to them than Jingdezhen porcelain[39], Chinese potters were certainly capable of producing utilitarian wares such as storage jars and therefore merchants did not have to buy them from far away.

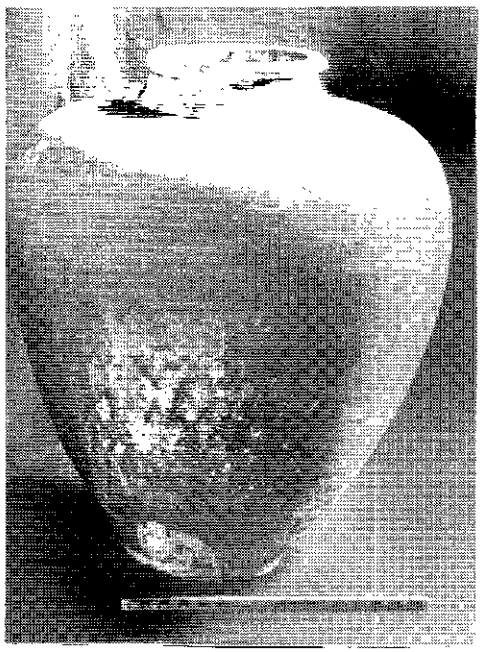
It seems that, while the possibility of a Vietnamese provenance should not be discarded,

it is quite likely that these jars were made near South China ports, such as Guangzhou, Amoy and Quanzhou.

Although of basically the same shape, there are some slight variations among Type A jars which suggest five subdivisions.

Type A. 1

There are 94 jars of this type (*Pl. 52*). The height varies between 47 and 56 cm, the widest diameter is between 41 and 49 cm, and the diameter at the mouthrim is usually between 16.5 and 17.5 cm although on a few jars the mouthrim measures up to 21 cm. Bases have about the same diameter as that of the mouthrim.



Pl. 52

The buff clay is generally found to come in a variety of hues, with some clay slightly grayish or reddish, and other clay very light. The clay also varies a great deal in quality, with some reasonably refined and other quite coarse with black and or white impurities. Occasionally it is possible to see that two different qualities of clay have been used for the same jar, that is to say one type of clay for the body and another for the lugs. On some jars it is far more vitrified than on others, indicating a considerable range of firing temperatures. Some of the jars have been coated with a slip of a different color than the body clay.

In most cases the glaze is heavily eroded. Still, it is consistently brown albeit in different shades. It is difficult to ascertain if the differences in shades of brown are due to an original difference in glaze color or to a more or less severe erosion due to the sand and salt-water action.

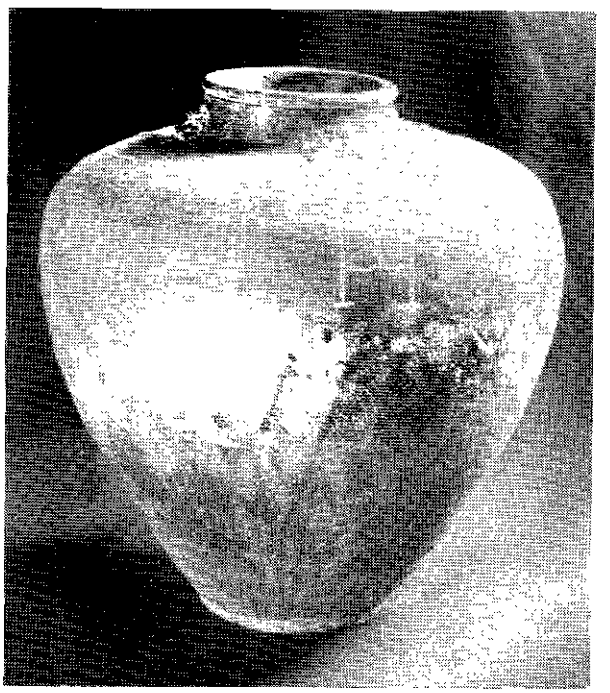
A few jars of this type were found in the cargo of the *Witte Leeuw* (Pijl-Ketel 1982, pp. 232-3) which was shipwrecked 25 years earlier than the *Concepción*.

Type A. 2

There are 14 jars of this type (*Pl. 53*) and they are all made with fairly refined buff or light gray clay.

The height varies between 46.8 and 56 cm while the diameter of the mouthrim goes from 16 to 19 cm; the widest part of the body measures from 42 to 47 cm in diameter. Although basically of the same shape as those in Type A. 1, these jars have somewhat different proportions: the walls rise from the very small base in an almost straight line until they reach the wide, rounded shoulders. This gives the jars a more elegant silhouette.

However, what most distinguishes these jars from the ones in the previous group is that they are covered with a glaze which has a distinct greenish tinge, showing that they were fired in a kiln where some degree of reduction was produced.

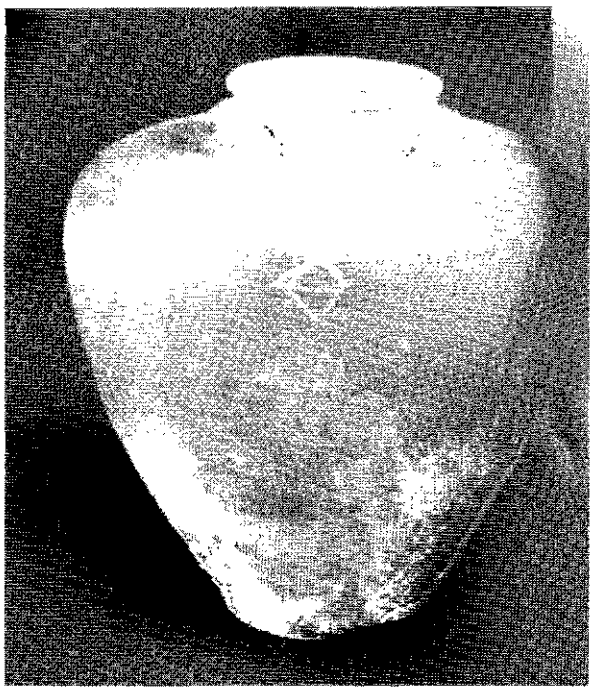


Pl. 53

Type A. 3

These nine jars are very similar in shape and glaze color to those of Type A. 1, except that they are all slightly smaller in size, measuring from 43 to 47 cm high, while the mouthrim measures from 15.5 to 16.5 cm in diameter. The largest diameter goes from 41 to 43.5 cm (*Pl. 54*). Bases are about 17.5 cm in diameter.

The clay used for these jars fired to a consistently buff color while the extremely eroded glaze was probably originally dark brown with an occasionally greenish area.



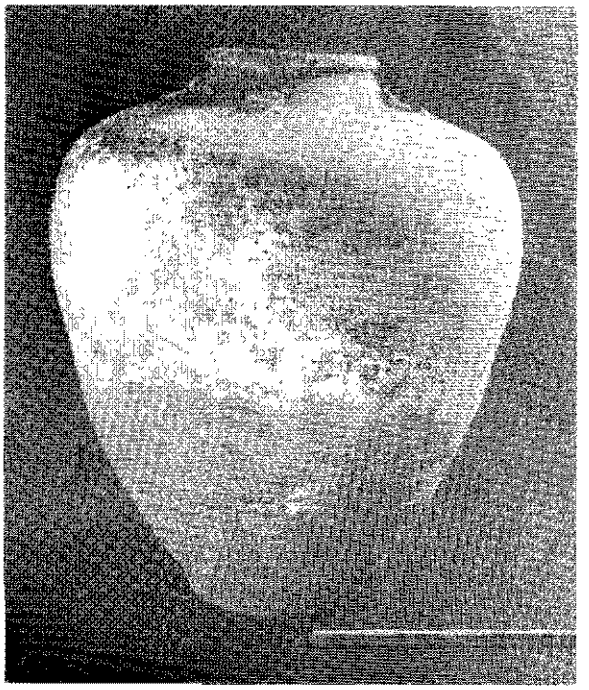
Pl. 54

Type A. 4

Six jars are slightly larger than average: they measure from 58 to 63 cm in height and the diameter of the mouthrim goes from 17 to 19 cm (*Pl. 55*). However, the typical feature is that they are made of a distinctive dark-red clay which clearly shows where the marks have been carved through the glaze.

The glaze, although extremely eroded, appears to have been black or very dark brown.

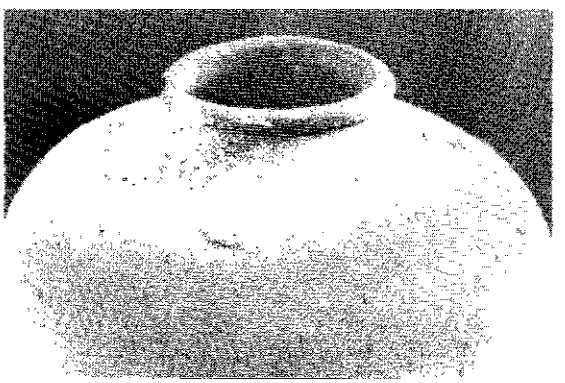
The bases are consistently flat and measure 19 to 20 cm in diameter.



Pl. 55

Type A. 5

There are only four jars in this last group (*Pl. 56*). One of them has a large hole on the side and another is broken into two pieces. Their distinguishing characteristic is that the clay from which they were made is the coarsest in the whole group. In fact, it is so coarse that the surfaces of the jars resemble sand paper. The color of the clay is very dark reddish gray, with many black impurities, and shows a high degree of vitrification. The glaze, which is extremely eroded, may have been black or very dark brown.



Pl. 56

TYPE B

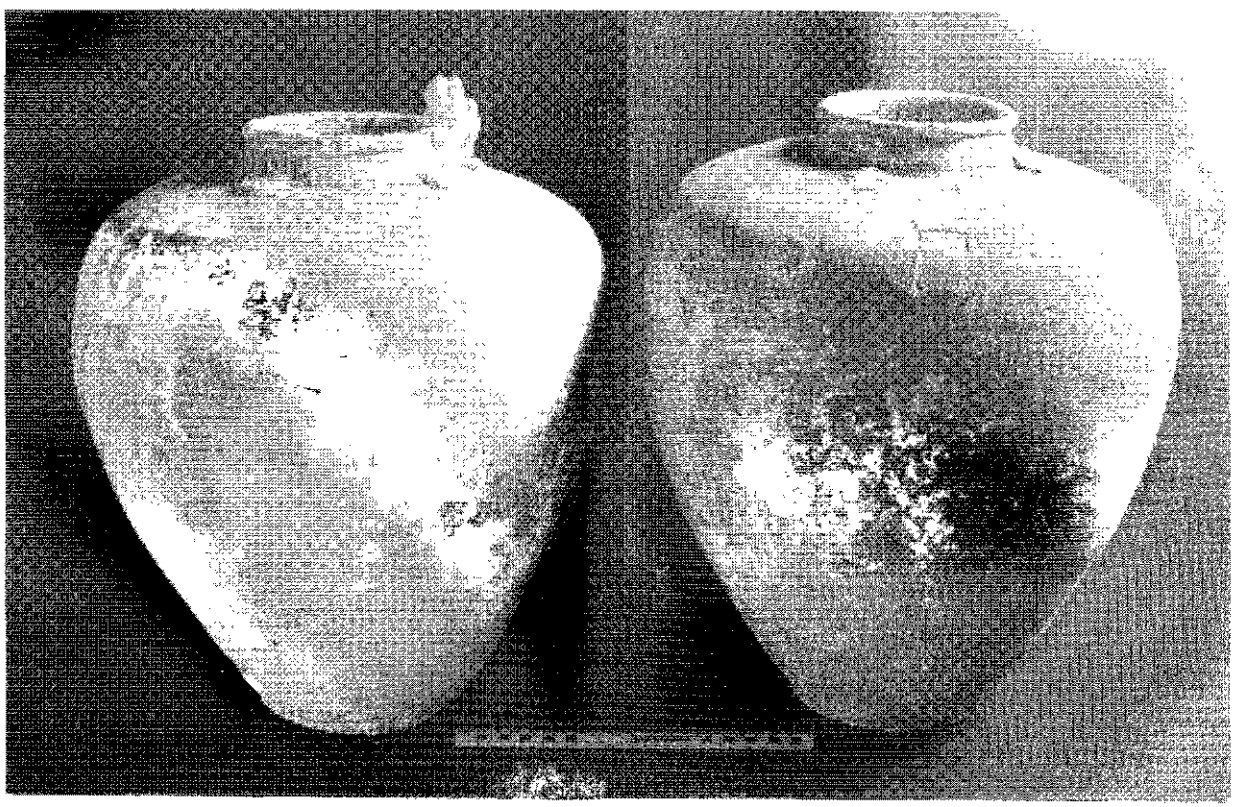
There are three jars in this group. The shape is very similar to that of **Type A** but the **Type** B jars have smooth, well-finished walls and are better potted (*Pl. 57a*). Under the almost completely eroded glaze (perhaps originally brown in color) the red clay from which they are made is clearly visible. The base is slightly concave.

Two of these jars are almost identical in height: 51 and 52 cm respectively, while the third is slightly taller. The widest diameter of about 47 cm is the same for all three jars.

Although similar in shape to the **Type A** jars, these jars have been grouped separately because they have three vertical Chinese characters stamped on the shoulder, near the base of the neck *Pl. 57b*). These characters translate in pinyin as "jili ji" and indicate the shop mark (ji) "good fortune" (jili).

However, these Chinese characters do not establish a definite Chinese provenance since it seems that Chinese characters were often used on Vietnamese wares[40].

Pl. 57b



Pl. 57a

TYPE C

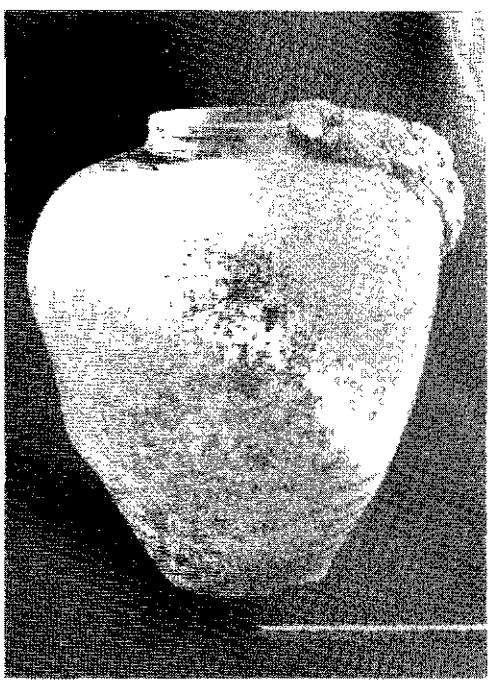
There is only one jar of this type and the shape is similar to that of **Type A** jars. However, this one has a straight mouthrim and almost no neck. Although all are missing, it is obvious that it had three lugs (instead of four as on jars of Type A) and that they were placed horizontally instead of vertically. The base is flat.

It stands at 55.8 cm and has a mouthrim diameter of only 15 cm. The maximum diameter is 47 cm. The clay is dark buff and it is covered with a brown glaze which, as on the other jars, is very eroded.

TYPE D

There is only one jar of Type D. With a straight mouthrim and a very short neck it is similar to that of Type C; however this one never had lugs (*Pl. 58*). The clay, which is poorly mixed, is red in some places and buff in others. This jar has a flat base.

The extremely eroded glaze may have been brown. The marks that have been carved through the glaze (five signs in all) may be from ancient Philippine palaeographs.



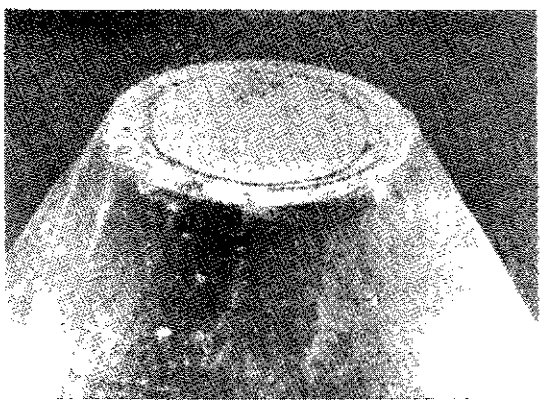
Pl. 58

TYPE E

Nine jars have been ascribed to **Type E.** The well-balanced, elegant shape seems to indicate jars made in the Chinese tradition, almost certainly in the kilns of South China. This opinion is shared by Barbara Harrisson[41] and Sumarah Adhyatman (Adhyatman & Ridho 1984, no. 80).

The jars are small, from about 34 to 38 cm high, with one only 30 cm high; the mouthrim is about 12 cm in diameter. The maximum width is in all cases almost exactly the same as the height.

The jars have no neck and the mouthrim, rolled and slightly everted, is attached directly to the shoulders. High on the shoulders are four simple horizontal lugs with the ends pressed on to the body (the lugs are missing on three jars only). The body swells in the middle and tapers towards the small base of about 14 cm in diameter which has a flat area around the slightly concave center (*Pl. 59a*).



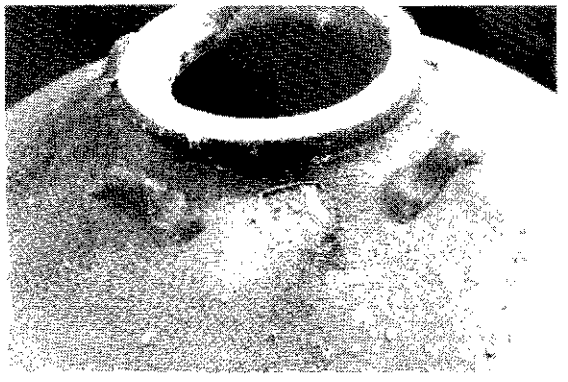
Pl. 59a

The clay is consistently light buff but it contains impurities which, in some cases, have burst through the glaze during firing.

The glaze is dark brown and covers both the inside and the outside of the jars except for the mouthrim and the base. This is because these jars were fired one on top of the other (flat area of base of one on top of mouthrim of the other) (*Pl. 59b*). These jars must have been fired very close to one another because most of them have marks on their sides which show that they stuck to each other during firing.

Pl. 59b

Almost all of these jars have a Chinese seal mark stamped high on the shoulder, between two lugs (*Pl. 59c*). Although erosion has rendered most of these chops illegible, three of them are clear enough to spell the character "qian" (money). It is of interest to note that although all three represent the same character, they have small differences showing that different chops were used to impress the marks. This could indicate that, although these jars have identical characteristics, they may have been made at different kilns.



Pl. 59c

Dr. Harrisson suggests that these jars may have been used as wine containers. They must have been very popular and it is likely that they were produced over a long period of time because, apart from the *Concepción*, they were found in two other wrecks which occurred at several decades' interval: the *Witte Leeuw* (Pijl-Ketel 1982, pp. 223-4 and Sotheby 1977, lot no. 976); and the Ko Kradat wreck in Thailand (Green et al. 1981, p. 27, no. 27).

TYPE F

Six jars were made in two halves with the upper half slightly larger than the bottom one, thus producing a poor fit at the juncture. The mouthrim is rolled and the neck is very short (*Pl. 60*). The lugs are missing but the marks left at the base of the neck indicate that, with one exception, there must have been four small lugs. One jar had only three lugs instead of the customary four. The base is slightly concave.

The height varies between 51 and 58 cm, the widest part of the body has a diameter which varies from 44.5 to 46 cm while the mouthrim diameter is about 14 cm in all instances.

Pl. 60

Four of the **Type F** jars were made with a light buff-colored clay and two with a reddish clay. Of the latter, one was made with two different-color clays: a lighter, reddish one for the bottom half and a darker one for the top half (*Pl. 61*). Yet this particular jar is slightly better-shaped than the rest of the **Type F** jars which are either carelessly built or badly warped.

Pl. 61

The glaze is dark brown but on some of the jars it is almost completely eroded. Some have as many as four concentric circles on the shoulder where the glaze has been scraped off, perhaps indicating where supports were placed for firing other wares.

So far, the provenance of jars such as these is unknown; Dr. Harrisson suggests that these crudely produced jars could have been made anywhere along the South China coast down to Vietnam.

Several jars of this type were found on the *Witte Leeuw* (Pijl-Ketel 1982, pp. 236-8).

TYPE G

Type G describes a group of jars that can be fairly safely assigned to Thai production. They are subdivided into two groups.

Type G. 1

There are four jars of this type. They are ovoid-shaped, have no neck and the mouthrim is thickly rolled. The clay is either gray or buff and contains many black impurities. Two-thirds of the upper body has been covered with a yellowish slip and it appears that the glaze has been either completely eroded or that these jars were originally unglazed (both types are known). The base is flat.

Distinctive features are the four thick loop-handles placed high on the shoulders - they are made out of a roll of clay with the ends pressed downwards - and groups of incised circles on the shoulders. The circles may be either in one group with the handles on top of them, or they may be in two groups: one where the handles are attached, the other about 4 cm below the handles (*Pl. 62*).

The jars are fairly small in size: only 41 to 47 cm high and from about 39 to 43 cm at the widest part of the body, which in these jars is midway between base and mouthrim. The diameter of the mouthrim measures about 18 cm.

Jars of this type have been found at late sixteenth and seventeenth-century sites and are well documented: from archaeological excavations of seventeenth-century kiln-sites at Bang Rachan in Singburi Province (Shaw 1985, pp. 81-2) and Suphanburi kilns[42]; from the *Witte Leeuw* cargo (Pijl-Ketel 1982, p. 239); from the site of the V.O.C. East Indiaman *Vergulde Draeck*, sunk near the Australian coast in 1656 (Green et al. 1987, fig. 38); from the Ko Kradat shipwreck site (Brown 1975, pp. 362-4, 367; and Green et al. 1981, nos. 36,38) and from the Ko Si Chang Three excavation (Green et al. 1981, p. 74, KSC3 101). Further references to similar jars in Southeast Asian collections can be found in Adhyatman and Ridho 1984, No. 179; Harrisson 1986, No. 52; Brown 1988, *pl. XLIII b.*

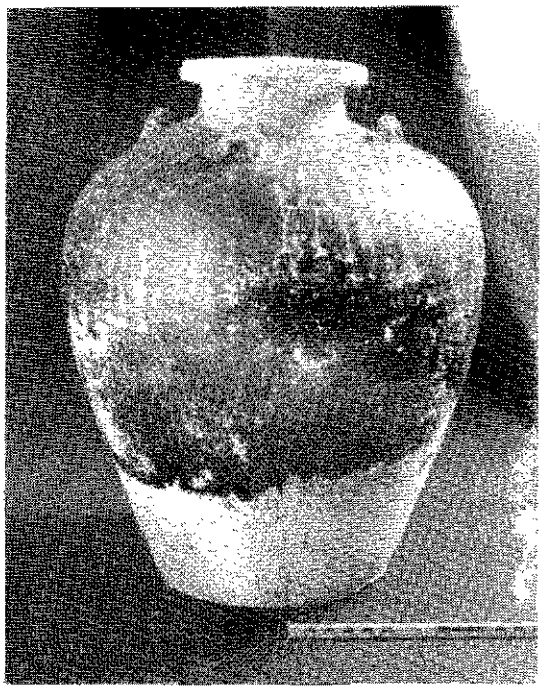
Type G. 2

Five jars fall into this category. They have an everted mouthrim above a well-shaped neck. Four medium-sized lugs are placed horizontally with the ends strongly pressed downwards. The body is graceful and well proportioned with wide shoulders tapering to the flat base.

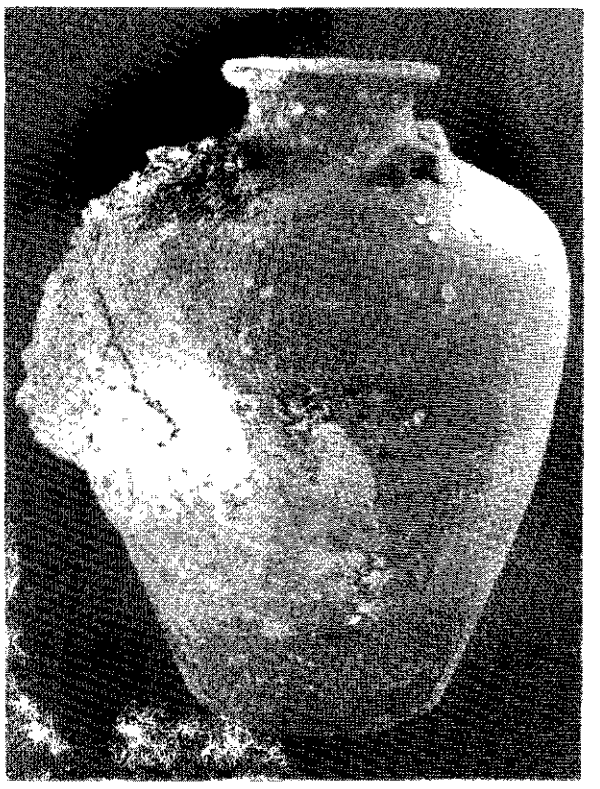
Pl. 62

One of the jars is 62 cm high, the widest part of the body is 46 cm in diameter and the mouthrim measures 21 cm in diameter. The clay from which it is made is refined and light buff in color. From the neck to below the waist the body is covered with an unctuous dark brown glaze, somewhat reminiscent of a Khmer-type glaze (*Pl. 63*).

The second jar is slightly larger measuring 64.5 cm in height and 47.5 cm at the widest part of the body while the mouthrim is 21 cm in diameter. The glaze of this jar is almost completely eroded showing a buff clay which has burned a reddish color where it was not protected by the glaze (*Pl. 64*).

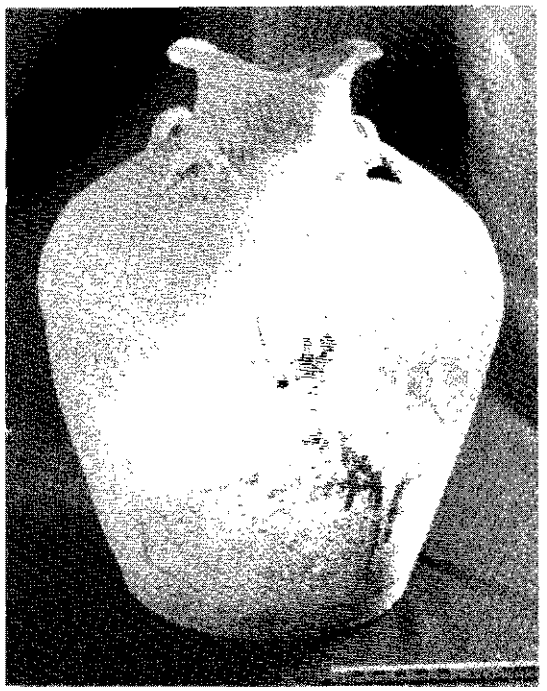


Pl. 63



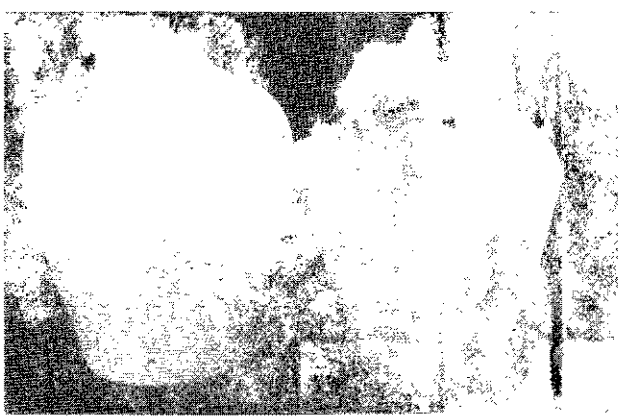
Pl. 64

The size of the third jar is similar to that of the other two (62 cm high, 47.5 cm in diameter and 21 cm in diameter at the mouthrim); however, it is made from a much coarser clay, dark gray in color and with many black impurities. The upper part of the body has been covered with a yellowish slip while the glaze is completely eroded (*Pl. 65*).



Pl. 65

The last two jars (*Pl.* 66) were made with reddish clay while the glaze is almost completely eroded. Although the shape is the same, one jar is smaller than the other (the height is 62 cm for the larger one and 55 cm for the smaller one).



Pl. 66

John Shaw, foremost scholar on Thai and Burmese ware, believes that these jars were also made at the Bang Rachan kilns (Singburi)[43] which, archaeologists have discovered, is a very important site with many large kilns where both unglazed and glazed stoneware were fired.

Type H

Type H refers to the only earthenware jar of European origin found in the area of the *Concepción* wreck (*Pl. 67*). It is of small size: only 27 cm high and 24 cm in diameter. It has a thickly rolled mouthrim over an oval-shaped body and a rounded base. This shape is known as "olive jar", possibly because in the beginning they were used to carry olives although later they were used as a container for a variety of goods. It is an extremely common shape in Spanish ceramics.

Pl. 67

The production of olive jars goes from the late fifteenth to the early nineteenth century. Over the centuries the basic shape was considerably modified and those of the shape described above are termed "middle" olive jars (Goggin 1960). Because they were found in several Central American archaeological sites dated to the last third of the sixteenth century, it is believed that production of this type might have started somewhere around the 1570's (Deagan 1987, p. 33) and continued throughout the seventeenth century. The former dating was

confirmed when jars of this type were found in the *Atocha*[44], and it is further confirmed by the one being studied here.

These jars may be unglazed or covered with lead glazes varying in color from green to yellow, brown and blue (Deagan 1987, p. 34); the one from the *Concepción* belongs to the unglazed variety.

The walls of this jar are fairly thick, and although it has been suggested that jars of this type may have been made in two halves and joined at the shoulders - implying that they were thrown on the wheel - it is the author's opinion that, because of the wall thickness and deep ridges, this jar may actually have been built by the coiling technique.

Wooden Jar Lids

Eleven wooden lids, fashioned so that they would fit the mouthrim of the stoneware jars described above, were recovered from the wrecksite (*Pl. 68*). They are made most probably of teak wood.

Pl. 68

Marks

Chinese character marks are not discussed in this section as they have already been described under the relevant jar types. The marks that are of interest to us here are those that have been carved over the surface and through the glaze of most of the jars, possibly with the intent of identifying their respective shippers or contents. Some jars have only one mark while others have as many as nine indicating that the same jar was used repeatedly.

Occasionally the same mark appears on more than one jar. For instance the following three marks were each used on four different jars:  ,  ,  ; several others were used on two or three jars. Other marks were repeated more than once on the same jar as is the case with , which appears three times on one jar (jar no. B2543), and twice on another (jar no. B1728).

Of the 156 storage jars found in good condition in the area of the wreck of the *Nuestra Señora de la Concepción*, about 21 have no visible marks; however, eight of these are almost completely covered with accretions while the rest, including the "olive jar", have some accretions that could hide a mark.

There are four distinct types of marks:

1. initials or conjoined initials
2. Filipino script
3. standard element symbols
4. arbitrary symbols.

1. Initials

The majority of marks may be the initials of shippers; however, in some cases what appears to be initials is in fact an abbreviation for a name. For example DO SALA on jar no. B2467 is short for Domingo Salazar. In other cases the initials are not those of an individual. The OP occurring mostly on jars of **Type E** is the sign of the *Orden de Predicadores* or Dominican Order.

A few other jars bearing marks of this type are known: a jar in the Museum of International Folk Art, Santa Fe, New Mexico (U.S.A.) has a mark but it does not match any of the ones from the cargo studied here (Mather 1983, p. 75); a Sung Dynasty jar found on a land site in Palawan, Philippines carries the mark also used on

two jars from the *Concepción* (Type A.1 and Type A.3; refer to *Pls. 52,54*), which bears testimony to the durability of stoneware jars as this one appears to have been in use for three centuries after it was made; a shard from the *San José* is also marked. Olive jars with initials are not rare (Deagan 1987, p. 34) but these are either incised or stamped before firing, not carved through the glaze. Furthermore, they are probably the potter's initials, however, one of the olive jars recovered from the *Atocha* has a mark carved on the shoulder but it does not resemble any of the marks carved on the jars studied here.

To the author's knowledge, marks similar to the ones found on the jars from the *Concepción* have not been found on any of the storage jars recovered from V.O.C. or Portuguese shipwrecks. This would suggest that the engraving of marks to indicate ownership or content was exclusively a Spanish custom. However, this practice was not restricted to storage containers: silver ingots from the *Atocha* bear many shippers' marks, most of them in the form of conjoined initials. These are the marks of the merchants consigning the bar to the ship's register and they can be seen listed on the manifest which still exists. Sometimes an individual consigned a bar on behalf of another, and we can assume that the same occurred with the jars of the *Concepción*.

2. Filipino Script

Several of the jars are marked with what John R. Francisco, scholar of Philippine paleographs, has identified as ancient Philippine palaeographs. When the Spanish reached the archipelago many Filipino groups were literate. They used scripts derived from Pali or Sanskrit, the two primary, classic forms of writing in ancient India. Unfortunately, the writing was nearly all done on bamboo or similar organic materials which were not durable. As a consequence, surviving examples of this writing are very rare. In fact, the only known example of one of these scripts is on an earthenware jar from a thirteenth or fourteenth century burial site in Batangas, Philippines. The inscription on this jar has so far defied translation.

In their quest to convert the natives to Christianity the Spanish priests translated religious works into Tagalog script. The *Doctrina Christiana* was translated into Tagalog in 1593. The original script was written vertically in columns but the translations were done in the European system of lines. Since the script on the jars is horizontal, it is possible that a Spanish priest or merchant used the script as his own mark, or perhaps a prominent native owned the jar previously. However, it is unlikely that the oppressed natives would have been in a position to trade with Mexico.

Three identical jars have been found, all bearing inscriptions written in a script of the Mangian tribe in the Philippines. However, these inscriptions have been carved on the base of the jars, not on the walls. One jar found in Kalimantan, Borneo is now in a private collection in Indonesia, another is in the Princessehof Museum in Leeuwarden and the third is in the Ethnographic Museum in Dresden. It would seem that the last two were found in Indonesia (Adhyatman 1984 pp. 53 and 61 and *Pl. 109*).

3. Standard Symbols

Often the marks represent one of the symbols used throughout the middle ages for various elements or chemicals and denote the content of the jar. Among the symbols on the jars, the following are recognizable:

auricalcum[45] 

antimony 

saltpeter 

salt 

Sol. Gould 

alumen or allum 

water 

vinegar of beer 

wine vinegar 

4. Arbitrary Symbols

In some instances symbols which do not have a specific meaning were used. Examples of these arbitrary symbols would be the anchor on jar no. B2128 or the crown on jar no. B2315/6. These were probably the marks chosen by a merchant instead of the normal conjoined initials. However, as the original manifest no longer exists, this theory cannot be confirmed.

LIST OF CREDITS

Plate #	Description
2	Detail. "Moth-eaten" edges on a Kraak dish rim. (Photo M. Rinaldi)
4	Kraak dish with single flowers on rim and bird with flowers in center medallion. From the Hatcher Cargo. Private Collection, Singapore. (Photo M. Rinaldi)
5	Kraak dish with "sunflower" motif on rim and auspicious symbols in center medallion. Diameter 26.5 cm. Provenance: China. Moongate, Singapore. (Photo M. Rinaldi)
6	Diameter 26.5 cm. Provenance: China. Moongate, Singapore. Rinaldi Collection
13c,b	Crowcup. Diameter 12.9 cm. Rinaldi Collection, Singapore. (Photo M. Rinaldi)
14c	Crowcup. Height 7.7 cm. Rinaldi Collection, Singapore. (Photo M. Rinaldi)
19c	Crowcup without panels. Diameter 9.5 cm, height 5.5 cm. Groninger Museum.
20b	Bowl with figures and "tulips". Gemeentemuseum, Arnhem, on loan from the State-owned Art Collections Department, The Hague. (Photo Gemeentemuseum, Arnhem)
21b	Blue and White jar. Private Collection, Singapore. (Photo from *Chinese Blue and White Ceramics*, courtesy of Arts Orientalis)
23c,d	Bowl with landscape scene and Chenghua mark on base. From Hatcher Cargo. Diameter 9 cm, height 5 cm. Moongate, Singapore. (Photo M. Rinaldi)
28c	Bowl with dots on rim. Kensoon Asiatic Art, Singapore. (Photo M. Rinaldi)
29c,d	Bowl with peach spray in the center. Diameter 8.5 cm, height 5.5 cm. Moongate, Singapore. (Photo M. Rinaldi)
38c	Barrel-shaped jar. (Photo by A. C. Cooper, Courtesy of Christie's, London)
39c	Wide, cylindrical, slightly waisted brush pot. Ming, high transitional. c 1635-45. Diameter 20.5 cm, height 19.5 cm. Butler Family Collection.
39d	Rolwagen. (Photo by A. C. Cooper, Courtesy of Christie's, London)
46b	Crowcup with clay disk attached. Private Collection, The Netherlands (Photo by the owner)
47	*Biombo Namban Screen*, Whole, attributed to Kano Domi 1593-1600, courtesy Instituto Portugues do Património Cultural for the Museu Nacional de Arte Antiga, Lisbon
48	*Biombo Namban Screen*, Detail, attributed to Kano Domi 1593-1600 courtesy Instituto Portugues do Património Cultural for the Museu Nacional de Arte Antiga, Lisbon

* All other photographs were taken by M. Rinaldi

ACKNOWLEDGEMENTS

The author is deeply grateful to Mrs. Lise Young Lai for helping in cataloging the jars and for editing the English text, and to Mr. K. T. Goh for lending his expertise in identifying some of the shards and in interpreting the Chinese marks.

NOTES

1. Although Bartolomeu Diaz had rounded the Cape of Good Hope in 1488, it was not until 1498 that Vasco da Gama actually inaugurated the route to India.

2. The Indies or Spice Islands are the Moluccas, a small group of islands in the Indonesian archipelago.

3. Portugal did not formally acknowledge Spanish control over the Philippines until 1750.

4. Portuguese trade was conducted in the following manner: slaves were brought from East Africa and sold in Goa. The money thus obtained was used to buy Indian cotton, subsequently bartered in Southeast Asia for aromatic products which in turn were exchanged in China for silks and porcelain. Both commodities were very much in demand in Japan where they were exchanged for silver which was abundant and cheap. The silver was carried back to China where it had five times its original value and was used to buy more silks, porcelain and other Chinese goods. Part of these goods were exchanged in Malacca for southeast Asian projects including, of course, spices. All this was in turn carried to Goa from where it was transhipped and sent to Persia, Arabia, Africa and Europe. A tremendous amount of inter-port trading also took place among Southeast Asian countries, including the Philippines.

5. It is believed that *El Pinal* (a pine grove) was on the island of Hong Kong (Schurz 1959, p. 66, note 3).

6. *Nao* is the term which the Portuguese used to indicate a carrack. During the sixteenth and first half of the seventeenth centuries the carracks were the ships most commonly used by the Portuguese.

7. The citizens of Macao.

8. In a footnote Professor Boxer states that the word *tentago* is derived from Tamil and describes white copper (Boxer 1984, p. 76, note 15).

9. Unfortunately, the Chinese term *ci qu*, which refers to both porcelain and stoneware, is often incorrectly translated as "porcelain" thus creating a great deal of confusion for the western reader who does not know whether the author is referring specifically to porcelain or to high-fired wares in general.

10. The word is derived from the name of a hill called *Kaoling* or "High Ridge", from which the substance was mined.

11. This is a romanization of *baidunzi* or "little white bricks" and refers to the shape is which petuntse was transported to the potteries after having been crushed to powder and then pressed into rectangular blocks.

12. Stoneware is usually fired at temperatures ranging between 1,200° C. and 1,275° C. while porcelain reaches maturity at temperatures between 1,275° C. and 1,350° C.

13. Secondary clays are primary clays which have been carried to lower ground by wind and water, gathering impurities on the way, such as pebbles, leaves, etc.

14. The author owes this information to Roxanna Brown.

15. In Europe, the secret of porcelain-making was discovered in 1710.

16. Shipping involved a number of transfers from larger to smaller boats and vice versa depending on which river or lake the boats were navigating. Occasionally the merchandise had to be transported over land.

17. In Confucian China merchants ranked lowest in society while scholars were the most highly regarded.

18. Most of the non-Kraak Blue and White porcelain from the *Concepción* is decorated with landscape scenes (see *Pls. 22a,b*).

19. The author is indebted to Richard Kilburn for generously providing most of the literature regarding the Huizhou merchants.

20. Wooden boxes were certainly carried on board ships (see *Pl. 48*) but these may not have survived the ravages of time.

21. *Vereenigde Oostindische Compagnie* or the Dutch East India Company.

22. Unfortunately Captain Hatcher neglected to recover any stoneware jars from this wreck.

23. A Kraak dish was found in the tomb of a close relative of the Wanli Emperor who died in 1603 (Wenwu no. 8, 1982 "Jiangxi Xian Wenwu gongzudui") and dealers in Hong Kong and Singapore have for some time been selling pieces of Kraak ware, especially dishes, which they claim to have been found in Jingdiezhen. All these pieces have imperfections, such as fire cracks or warping, and usually show no sign of having being used (e.g. scratches, etc.) thus indicating that they were kiln wasters or rejects.

24. A *klapmuts* is a shape which is between a deep dish and a shallow bowl with a flat rim. It resembles an upturned woollen cap which is what the Dutch word *klapmuts* means.

25. The "sunflower" motif evolved from the auspicious motif of the peach spray. Over the years the "peach" was depicted surrounded by leaves, thus becoming more similar to a sunflower than a peach spray (Rinaldi 1989, *pl. 91*).

26. Kilburn compares the sizes of dishes found in the *Witte Leeuw* and in the Hatcher Cargo. For the larger dishes, the average size in the *Witte Leeuw* is 49 - 52 cm while in the Hatcher Cargo it is slightly smaller, about 47 - 47.5 cm (Sheaf and Kilburn 1988, p. 37).

27. The deer is a Daoist symbol of long life as it is thought to be the only animal capable of finding the sacred fungus or *lingzhi* which gives immortality.

28. There were only a few pieces with the deer motif on the *Witte Leeuw* (Pijl-Ketel 1982, pp. 139, 141) and they are almost certainly from an earlier period. There were none on the *Banda*.

29. During the second half of the sixteenth century the Dutch traded regularly with the Ottoman Empire, their natural ally against Spain. It is at this time that the Dutch first imported to Holland both Iznik wares and tulip bulbs; in a few decades tulips became the craze in the Netherlands. About 1625, when the Dutch began ordering wares from Chinese merchants (Jorg 1989, p. 433 and note 3), these porcelains were decorated with specific motifs: the tulip was often painted on Transitional wares while the Iznik motifs were depicted mainly on Kraak porcelain.

30. This jar was exhibited in Singapore in 1978 (Yeo and Martin 1978, *pl. 117*).

31. This incised decoration, also known as an *anhua* decoration (secret decoration) had first been used during the Yongle period (1403-24) and remained popular ever after.

32. Here the term *qingbai* is used to indicate a type of glaze and not the Song/Yuan ware.

33. Many large shards (the size of about half a jar) were also salvaged but they have not been counted here.

34. Mr. Ha Thuc Can, a Vietnamese dealer in antique art residing in Singapore and Hong Kong, expressed this opinion in the course of a private interview with the author on 11 July 1989.

35. From a letter to the author from Roxanna Brown dated 26 July 1989.

36. The author is in debt to Sumarah Adhyatman for pointing out to her this information.

37. In this respect Locsin says that "Annamese wares, which were exported in considerable quantities to Indonesia, form a relatively modest percentage of the ceramics traded into the Philippines' (Locsin 1967, p. 11). Roxanna Brown comments that "Only an estimated 2-4 percent of...foreign ceramics excavated in the Philippines are Vietnamese" (Brown 1988, p. 23).

38. Mr. Ha Thuc Can discussed this possibility with the author on 11 July 1989.

39. When Chinese merchants bought Vietnamese ceramics it was to barter them in Southeast Asian markets rather than to sell them to the home market. Vietnamese ceramics were bought by the Chinese most probably during a stop-over on their way to Indonesia.

40. The author owes this information to Mr. Ha Thuc Can.

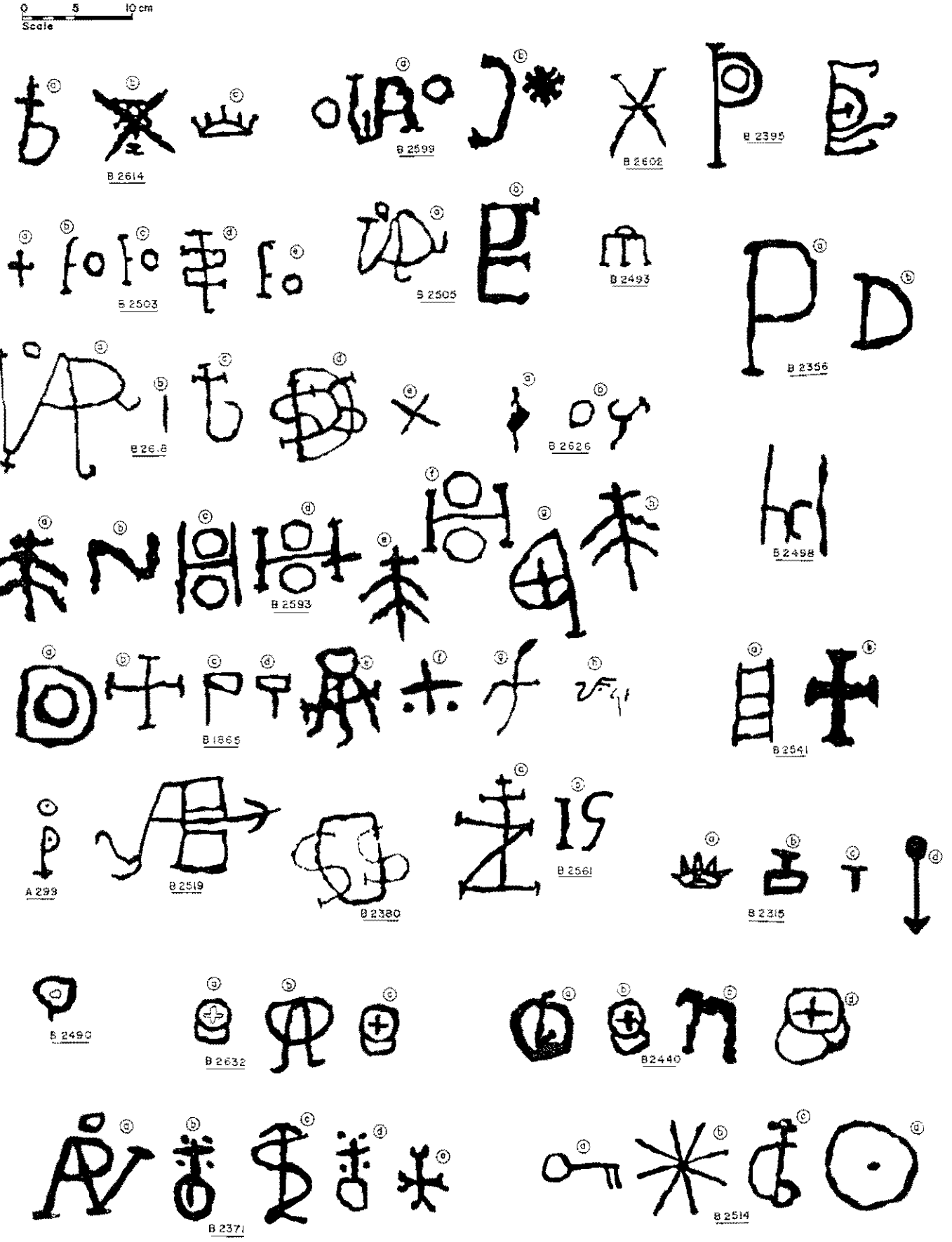
41. Barbara Harrisson gave this opinion in a letter addressed to Pacific Sea Resources dated 3 November 1988.

42. From a letter to the author from Roxanna Brown dated 26 July 1989.

43. From a letter to the author from Roxanna Brown dated 1 September 1989. Ms. Brown has shown photographs of these jars to John Shaw.

44. The *Nuestra Señora de Atocha* is a Spanish galleon which sank in 1622 near Florida. Its cargo was recovered in 1985 (Marken 1986).

45. Auricalcum is a chalk that contains gold.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B 2395
B 2503
B 2505
B 2493
B 2356
B 26.6
B 2626
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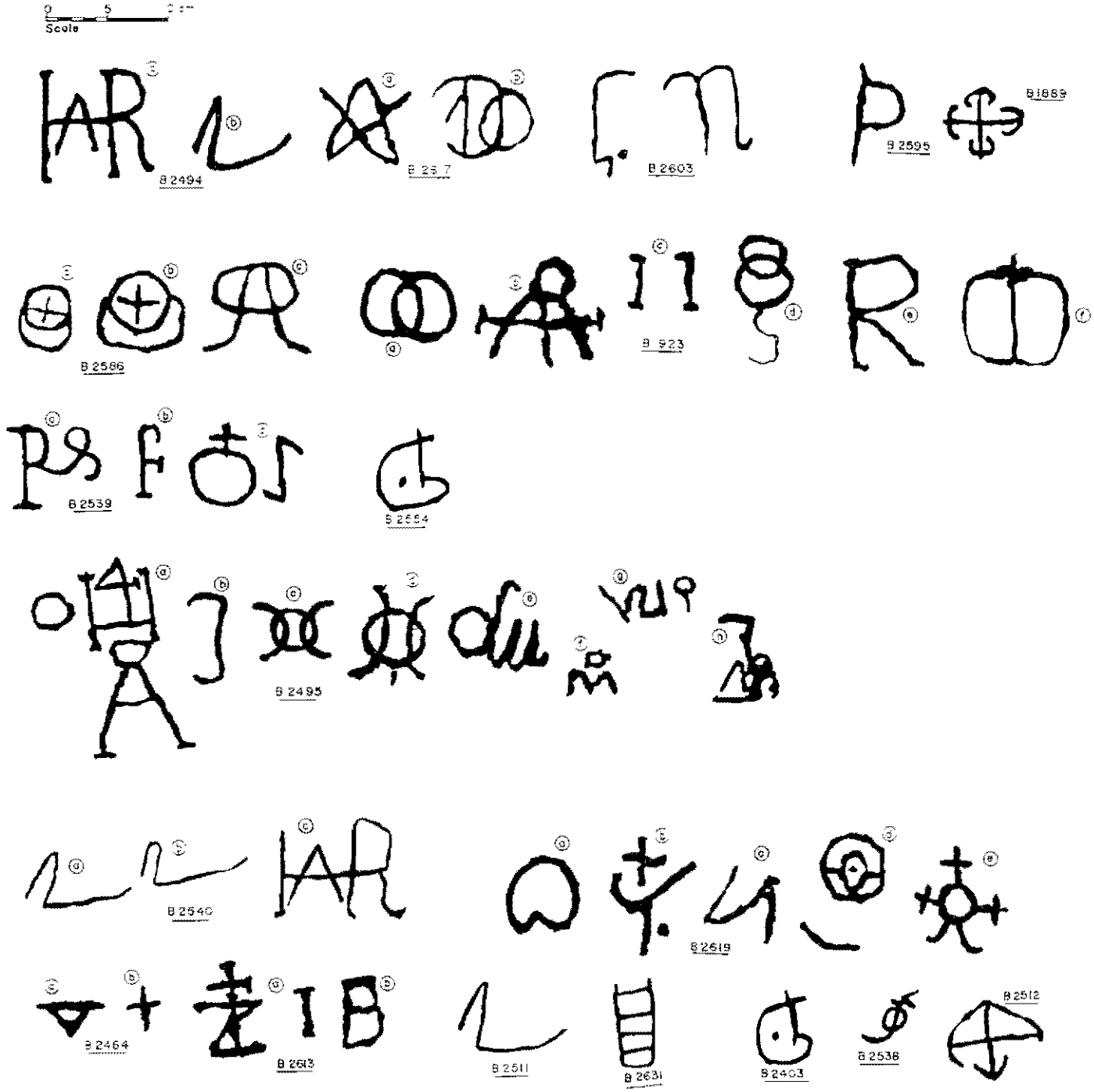
B 2593
B 1865
B 2541
A 299
B 2519
B 2380
B 2561
B 2315
B 2490
B 2632
B2440
B 2371
B 2514


0 5 10 cm
Scale
B 2504
B 2574
B 2473
B 2481
B 2502
B 2182
B 2474
B 2414
B 2357
B 2555
B 2412
A 959
B 2584
B 2501
B 2413
B 2370
B 2295
B 2296
B 2394
B 2513
B 2600
B 2529


0 5 10 cm
Scale
B 1677
B 2634
B 2633
B 2598
B 2562
B 2630
B 2601
B 2500
B 2296
B 2583
B 2472
B 2471
B 2462
B 2483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B 2595
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B 2586
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B 2554
B 2495
B 2540
B 2619
B 2464
B 2613
B 2511
B 2631
B 2403
B 2538
B 2512


0 5 10 cm
Scale
B 1646
B 2335
B 1727
B 1726
B 1888
B 1674
B 1891
B 1728
B 1859
B 2439
B 1687
B 1884
B 1883
B 1890
B 1861


0 5 10 cm
Scale
B 2128
B 1885
B 2180
B 2181
B 2151
B 2466
B 2463
B 2176


0 5 10 cm
Scale
B 1628
B 1634
B 1631
B 1625
B 343
B 1620
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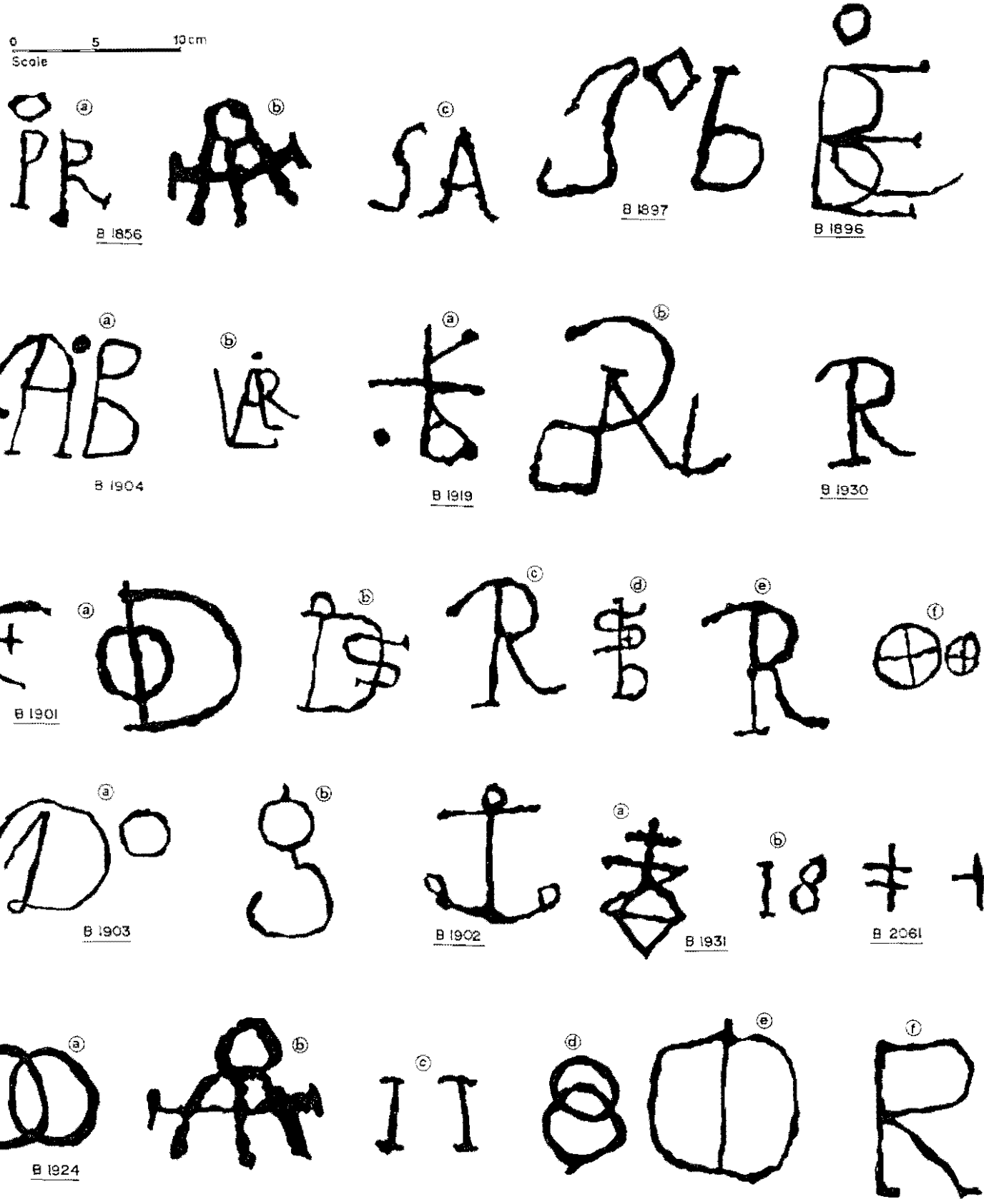
B 1629
B 1872
B 296
B 1619
B 1625
B 1676
B 2336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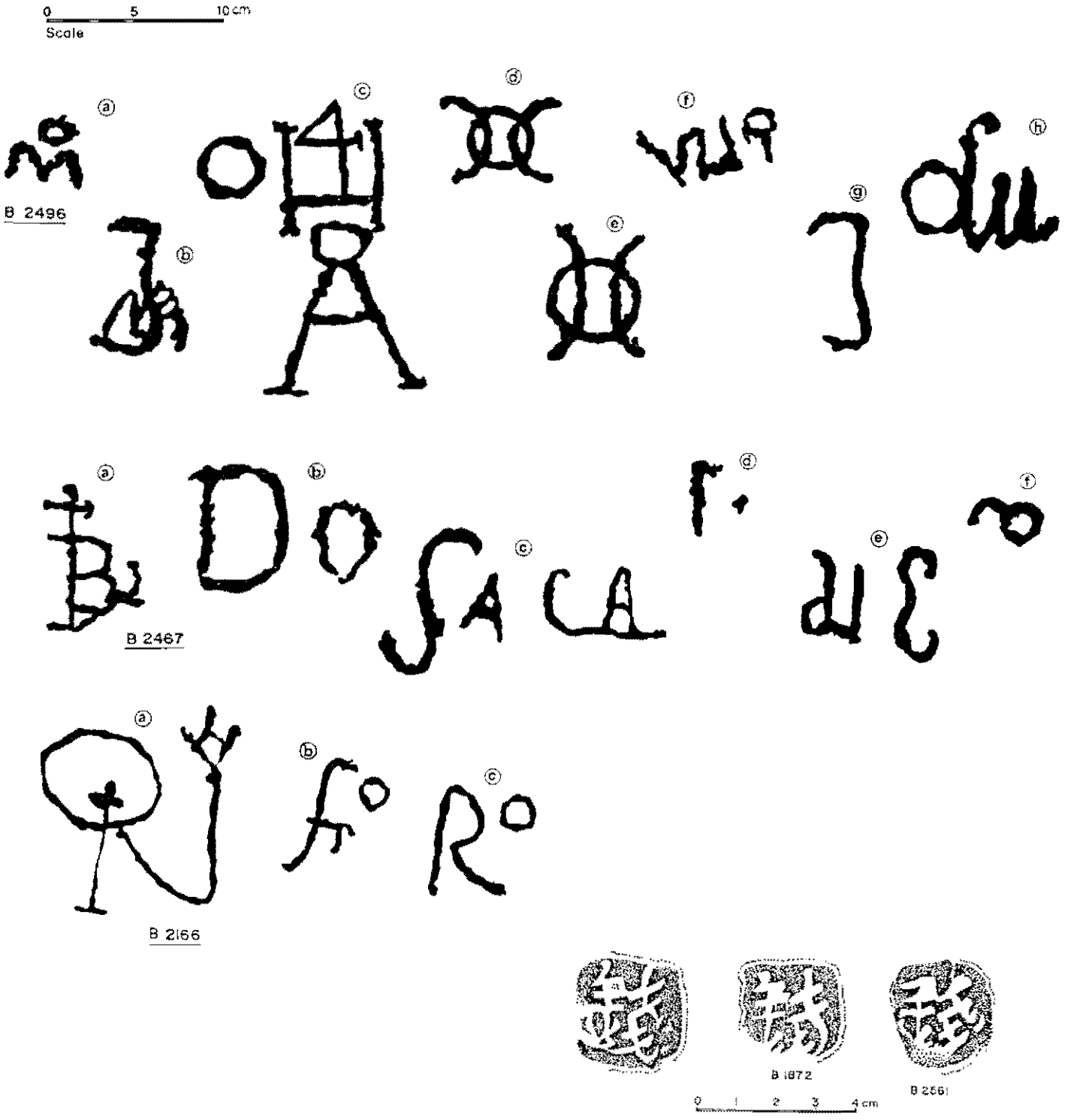
B 1904
B 1919
B 1930
B 1901
B 1903
B 1902
B 1931
B 2061
B 1924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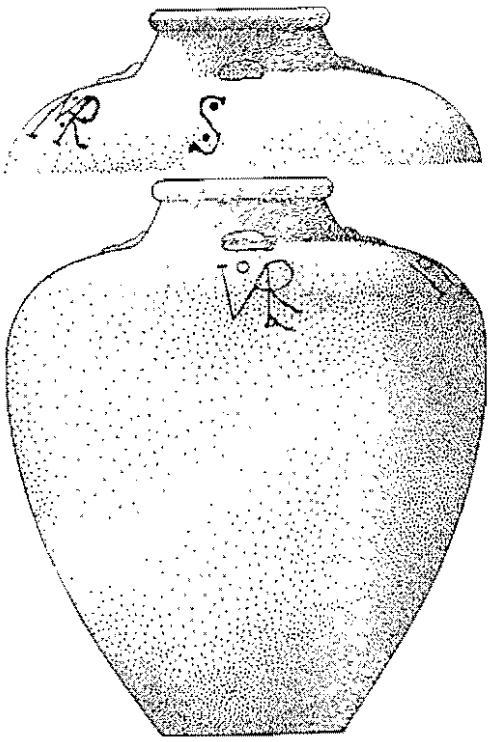
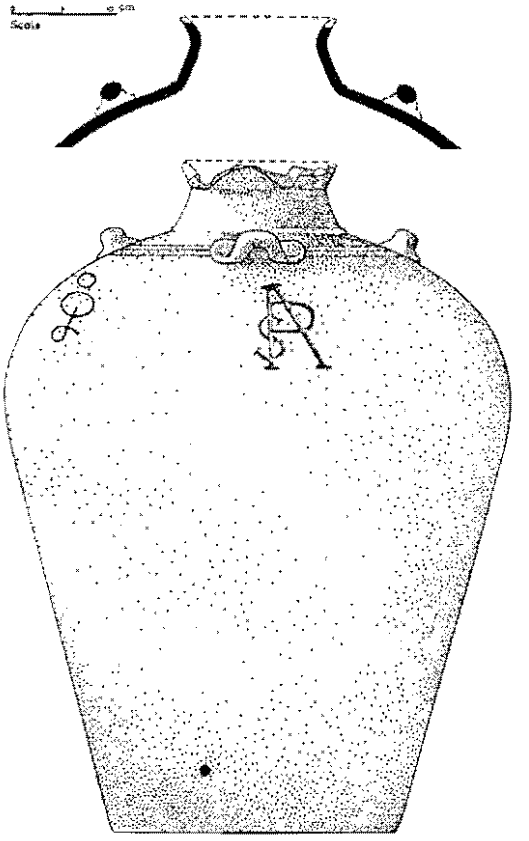
STONEWARE STORAGE JAR WITH SHIPPERS' MARKS
A 858



GLAZED STONEWARE STORAGE JAR
A 616



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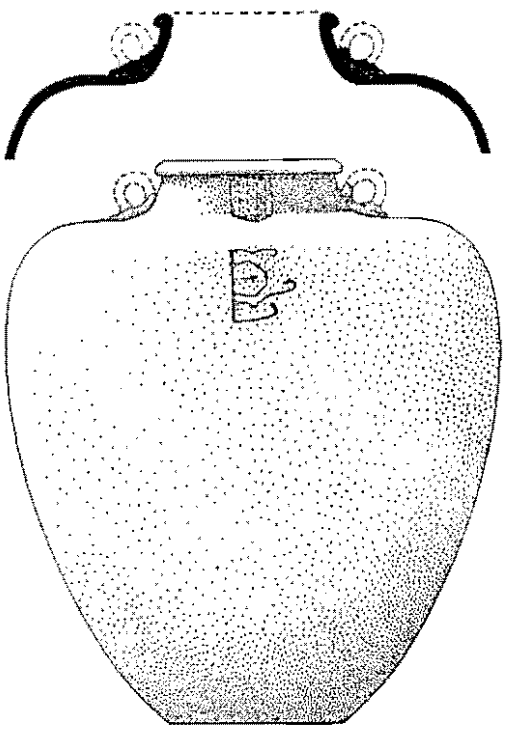

STONEWARE STORAGE JAR SHIPPERS' MARKS
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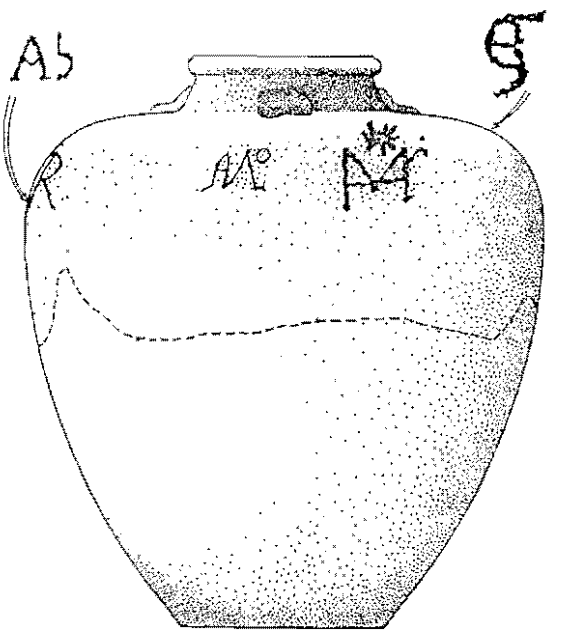

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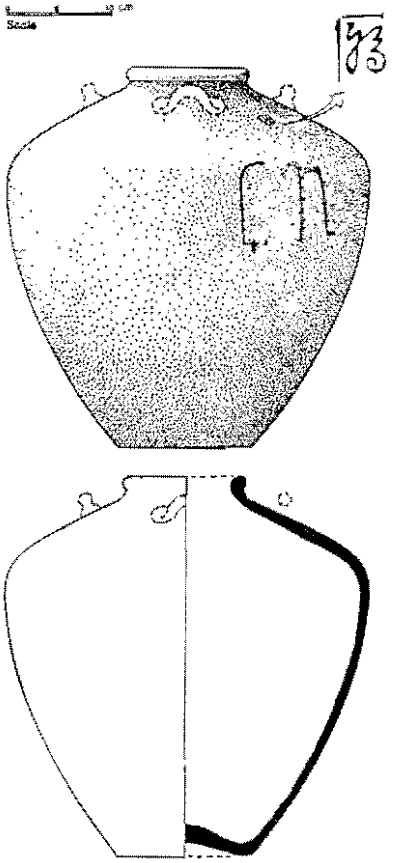
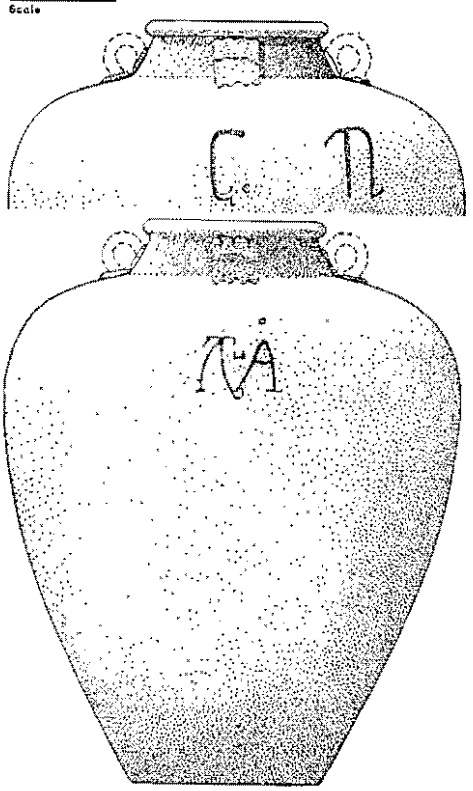


STONEWARE STORAGE JAR WITH SHIPPERS MARKS
A 605



STONEWARE STORAGE JAR

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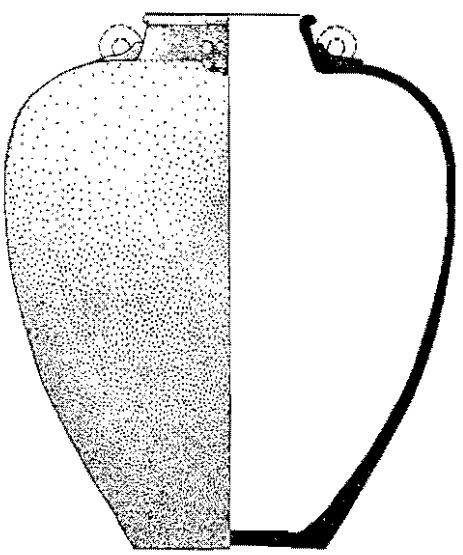

STONEWARE STORAGE JAR

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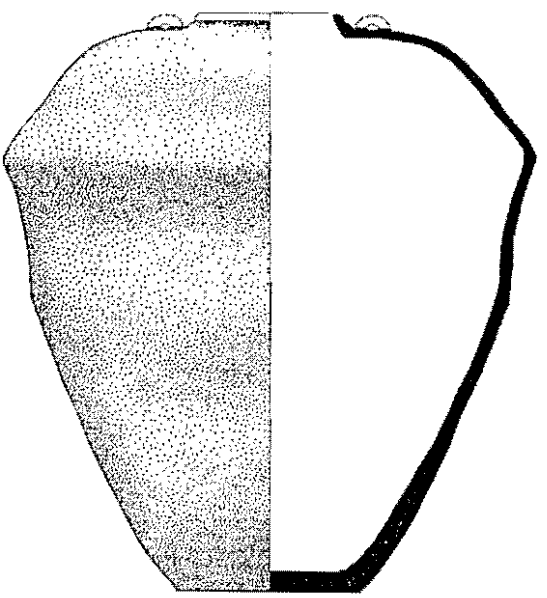

STONEWARE STORAGE JAR

Scale

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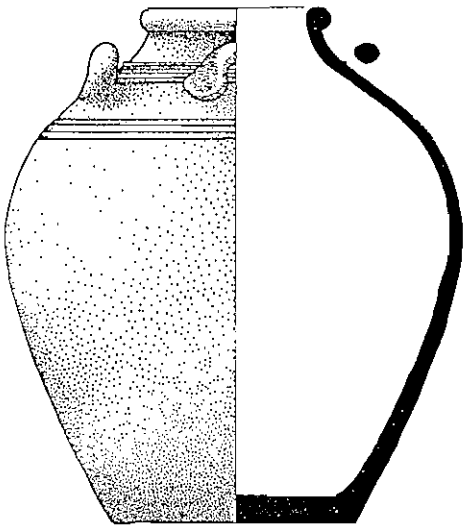

STONEWARE STORAGE JAR

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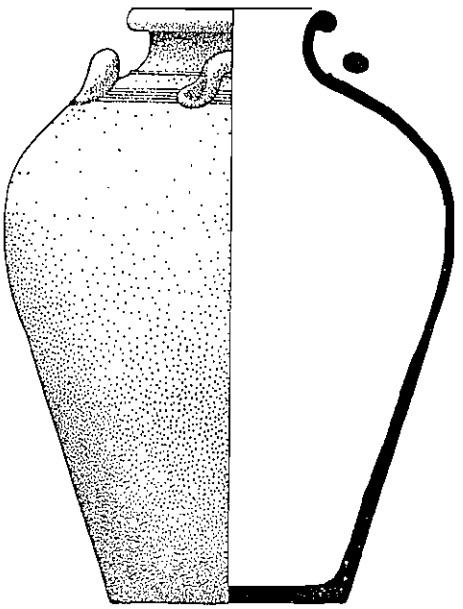
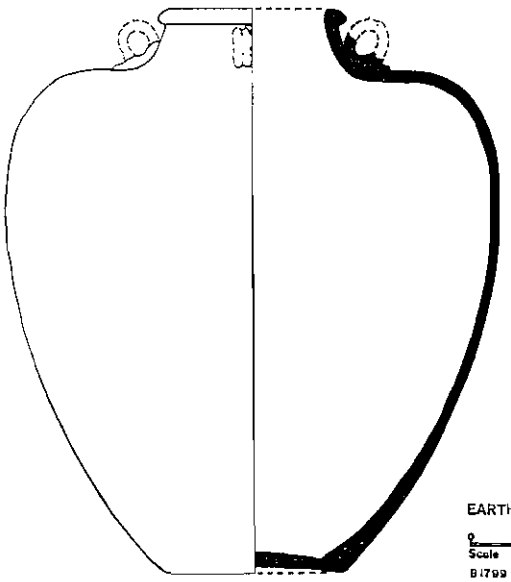




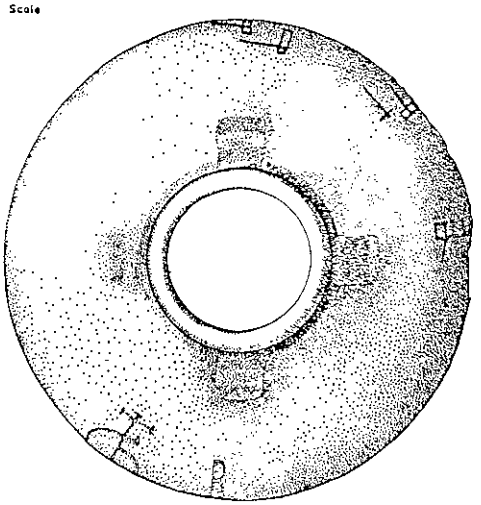
A 637

STONEWARE STORAGE JAR

STONEWARE STORAGE JAR RIM / SHOULDER SECTION WITH SHIPPERS' MARKS

A 581

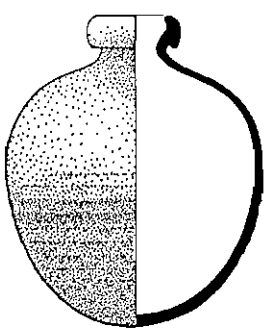
Scale

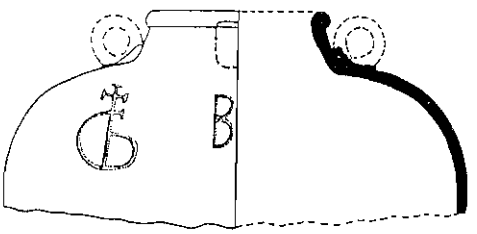


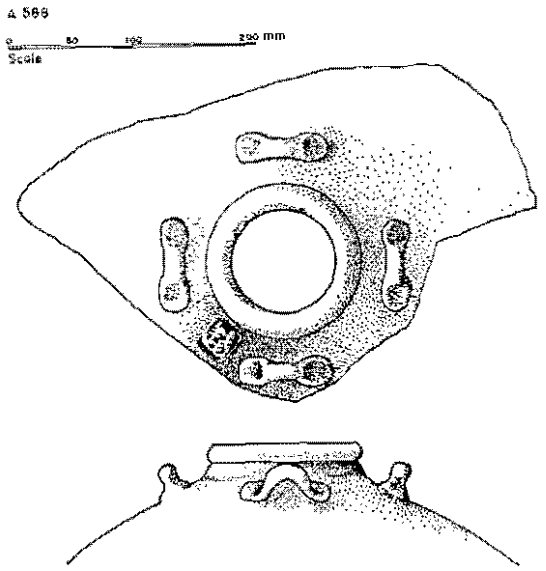
EARTHENWARE OLIVE JAR

Scale

B 1799



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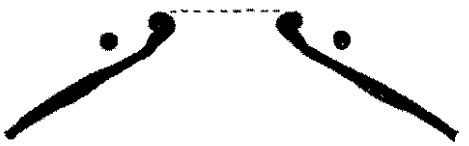

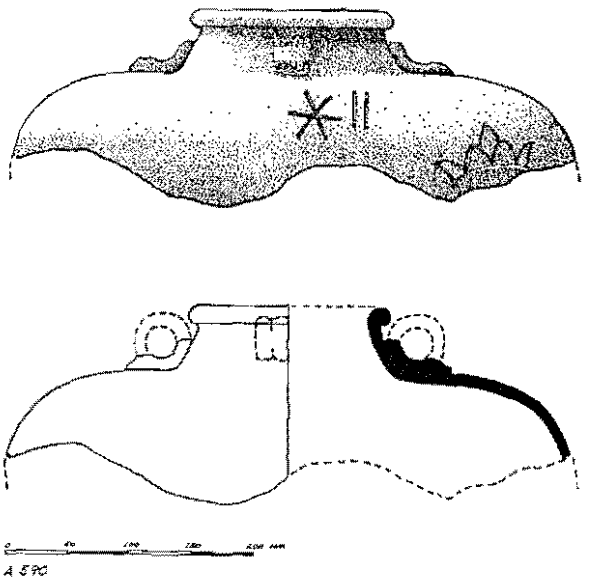
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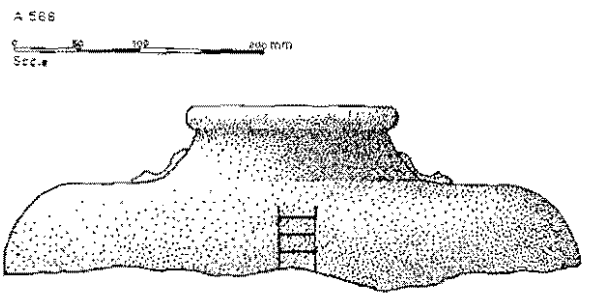
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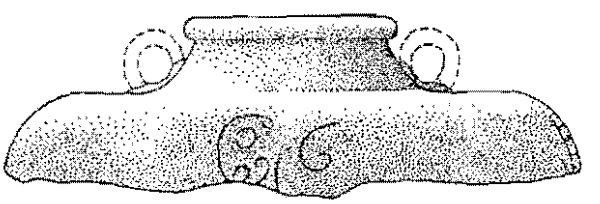

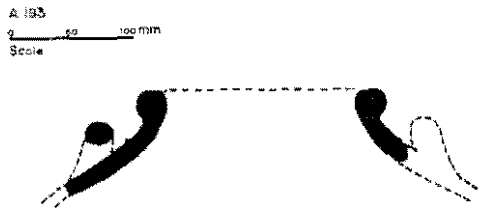
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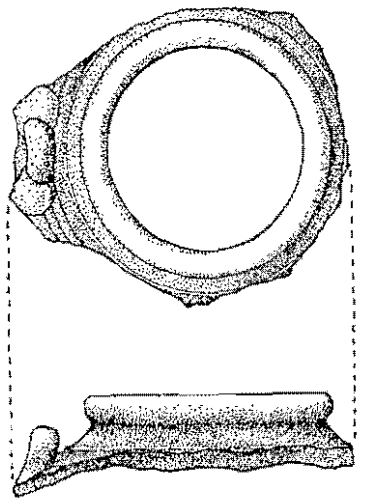

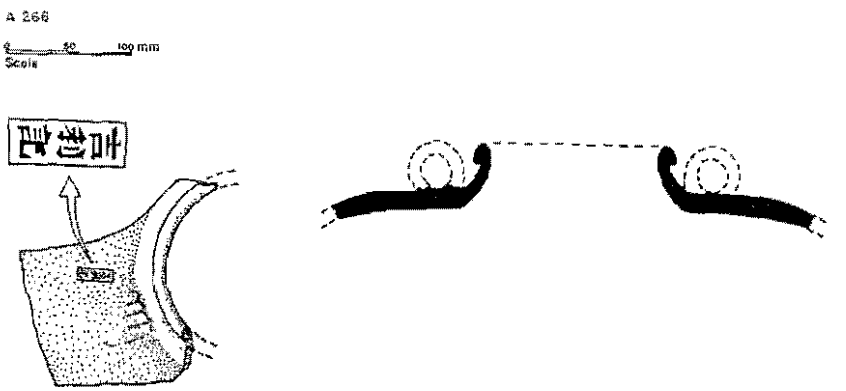
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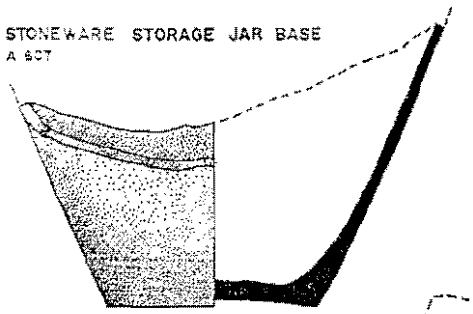
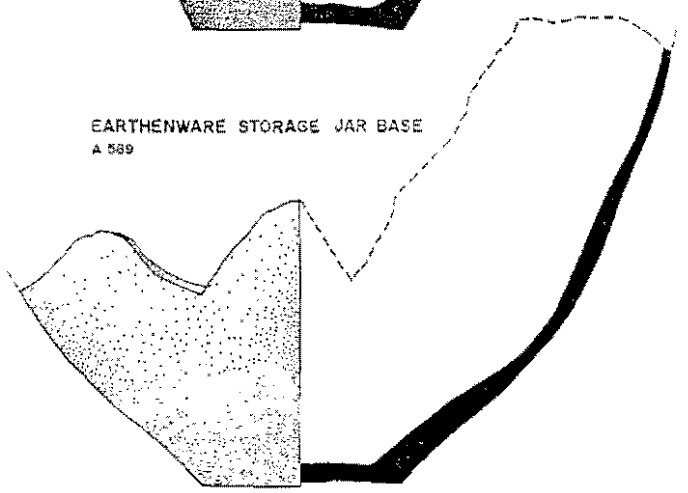
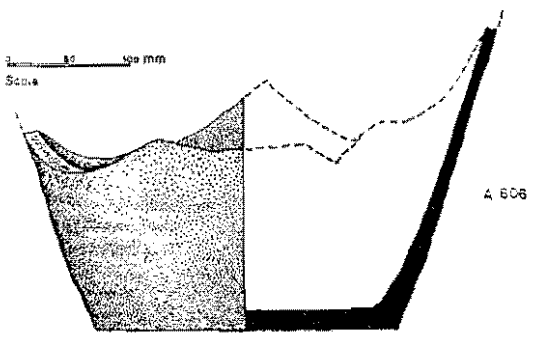
Scale

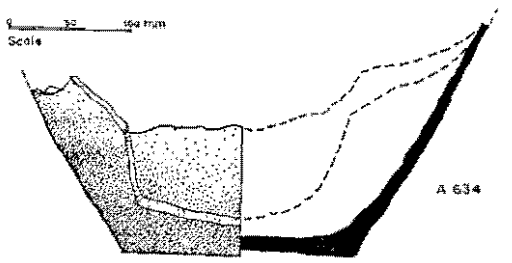
STONEWARE STORAGE JAR BASE
A 607

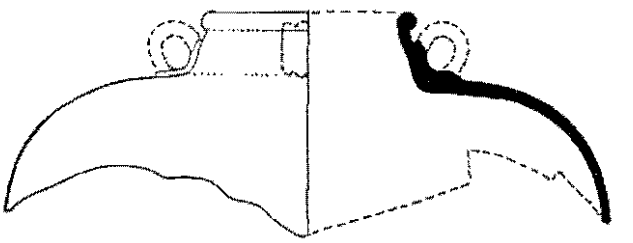


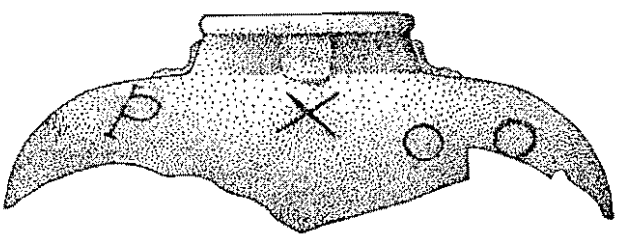
EARTHENWARE STORAGE JAR BASE
A 589

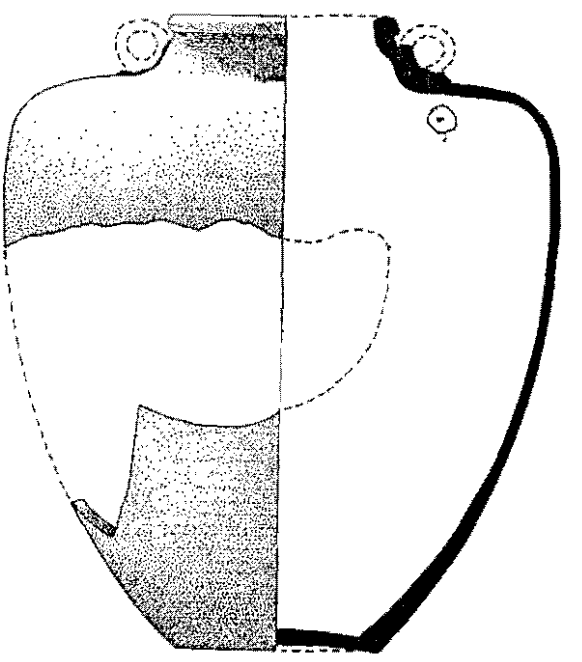


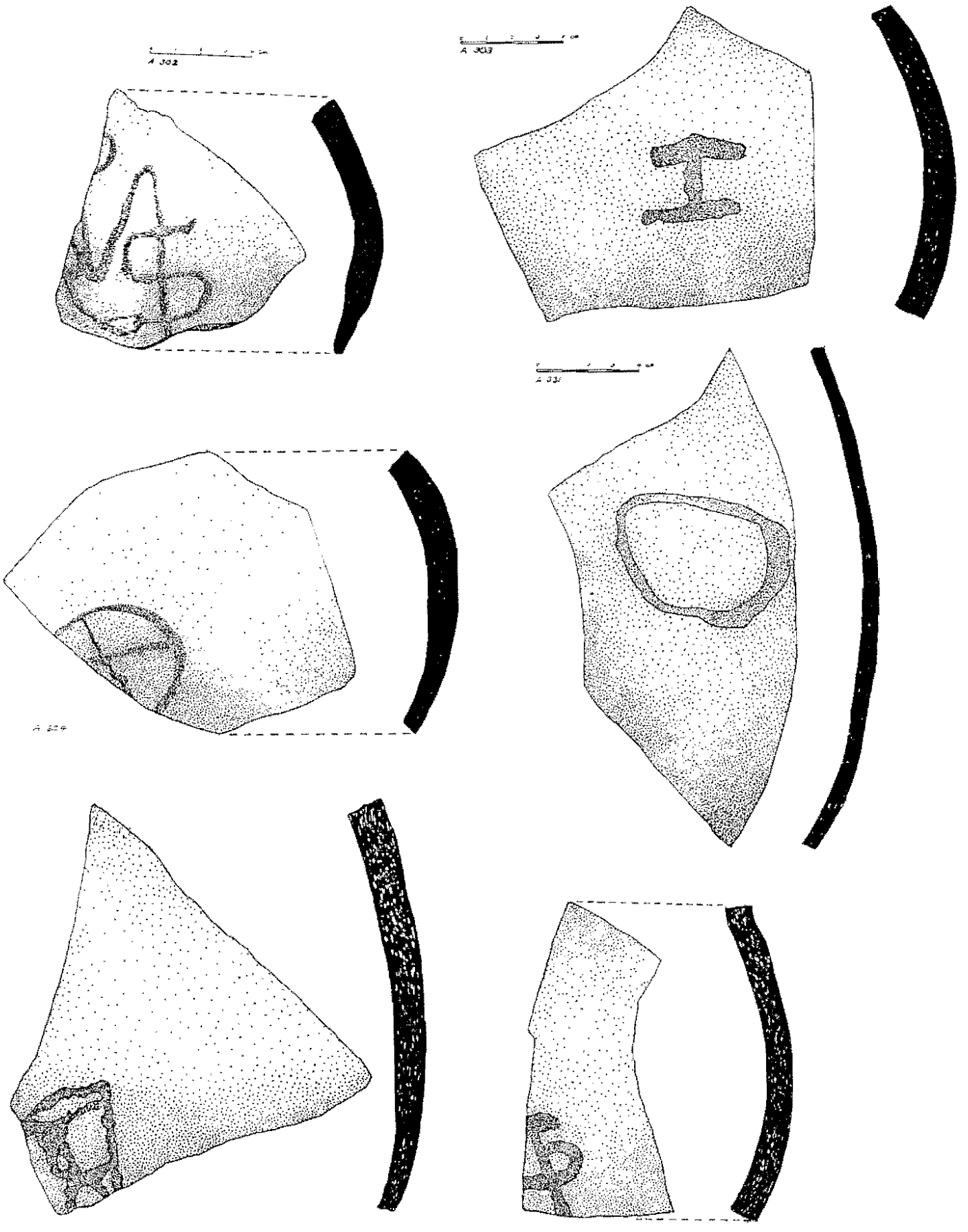


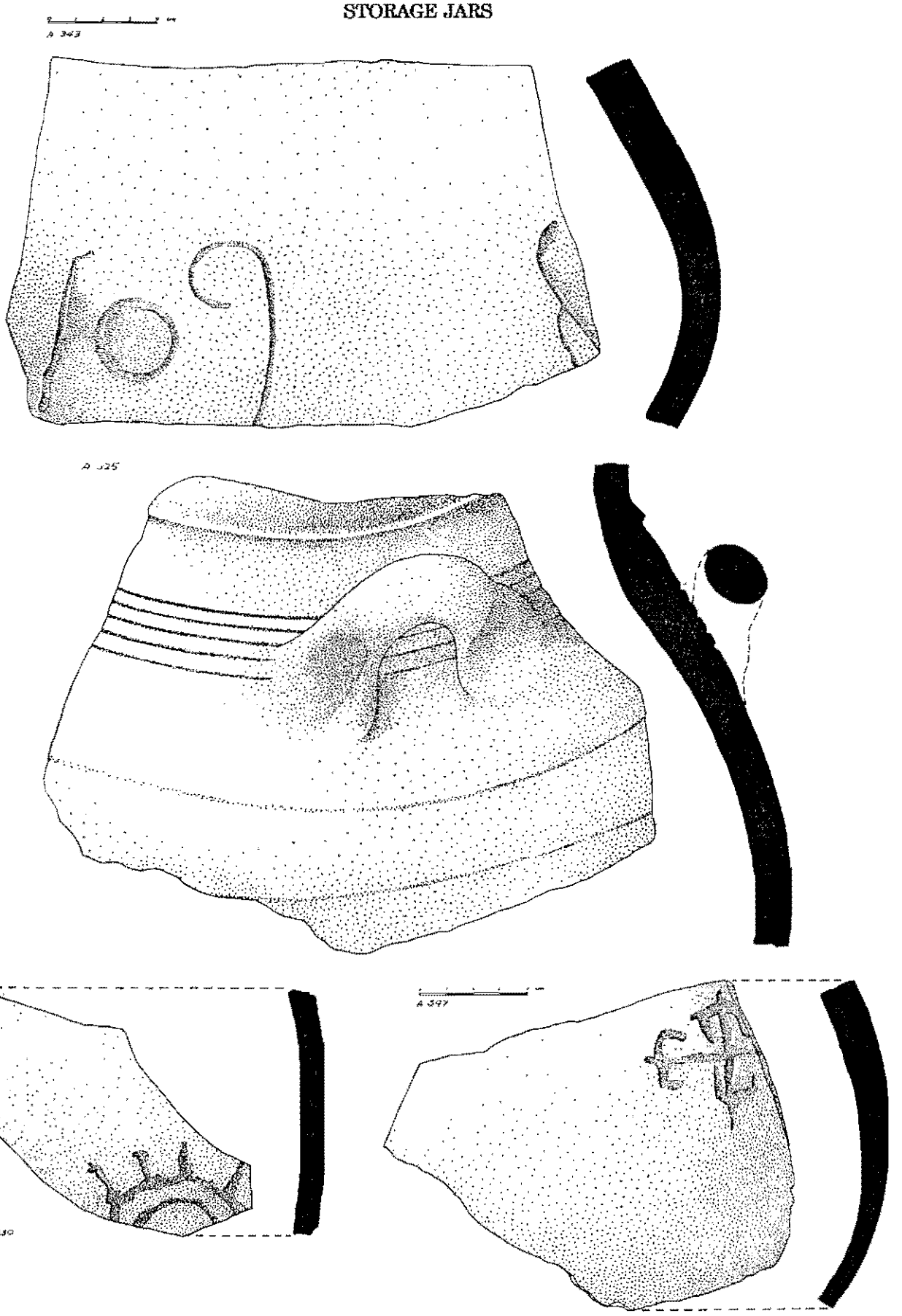


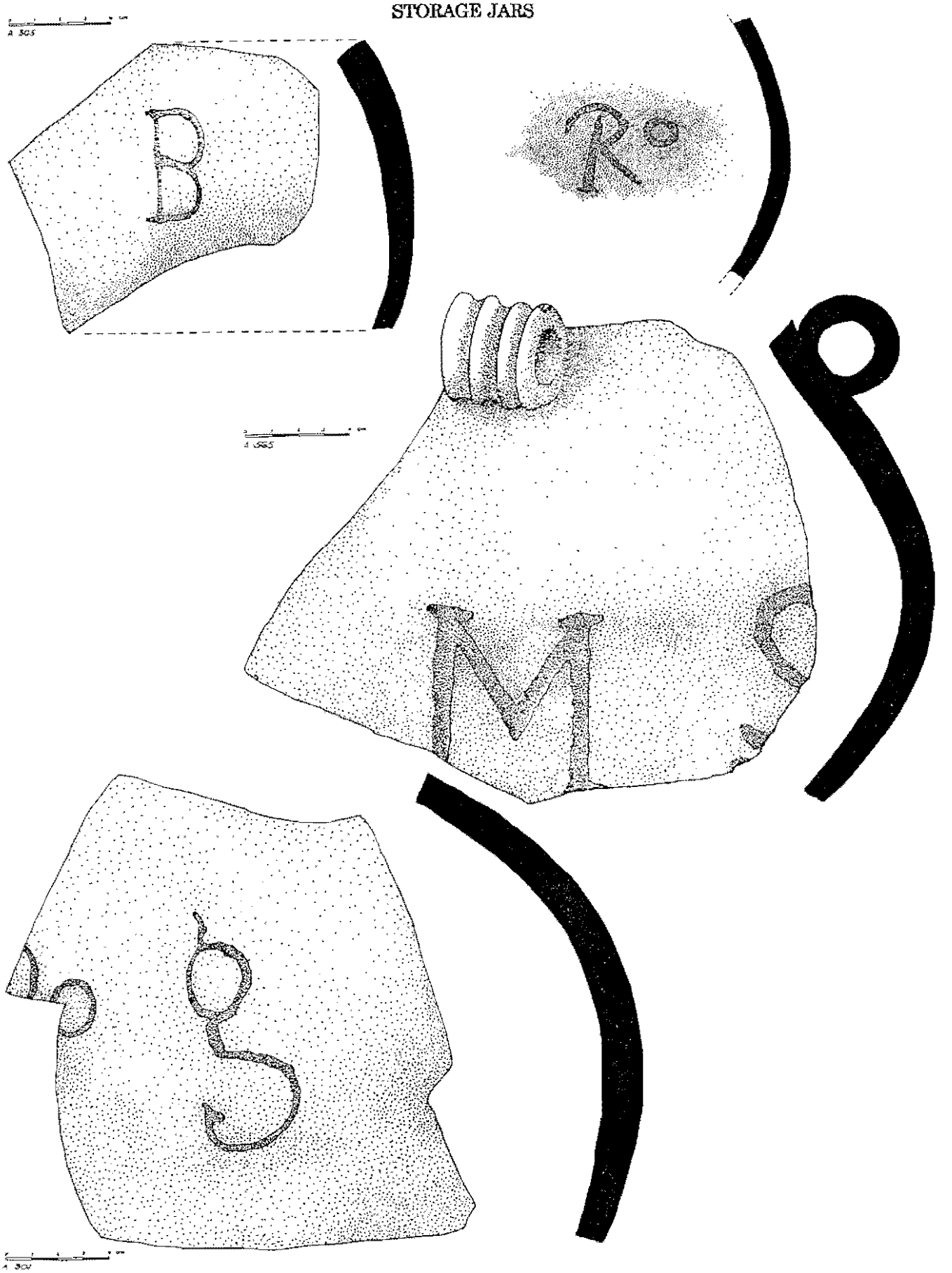


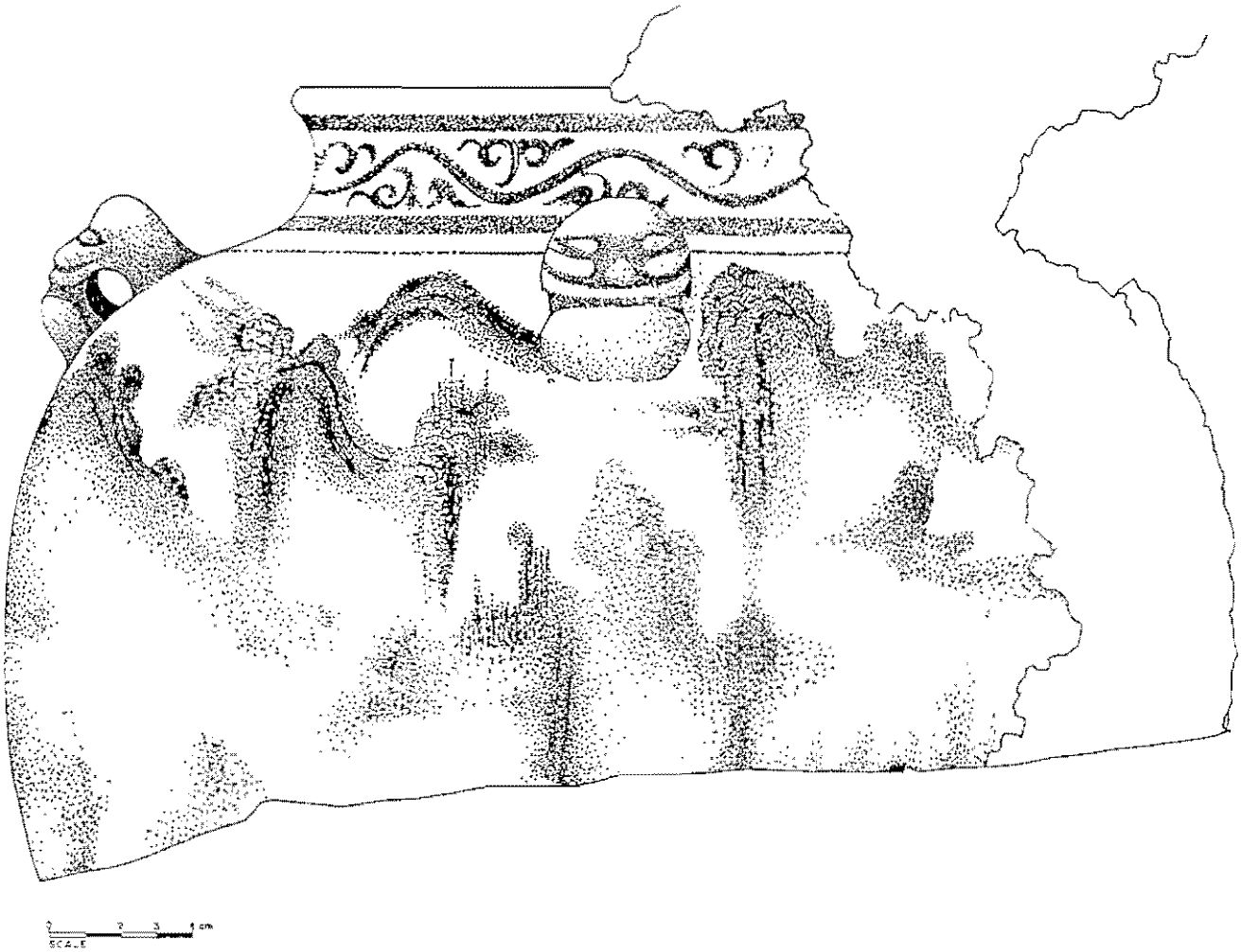


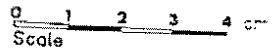


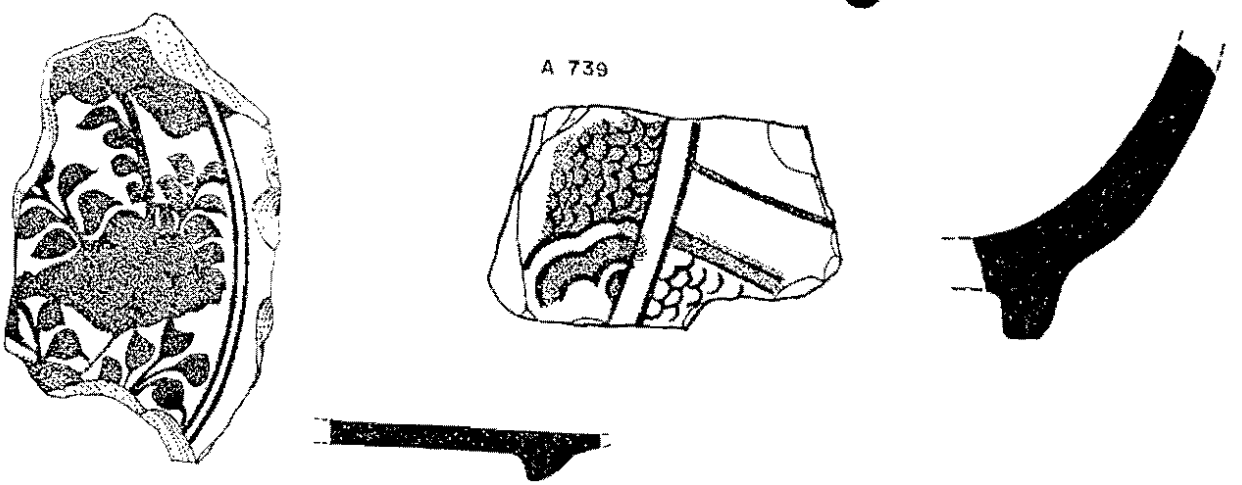


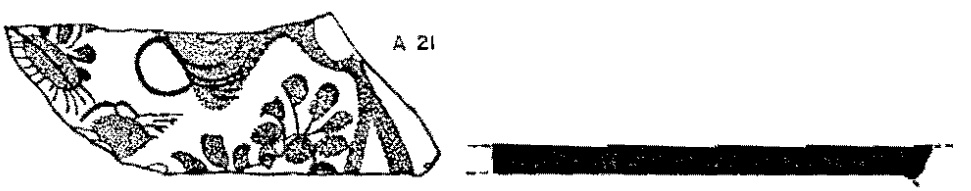


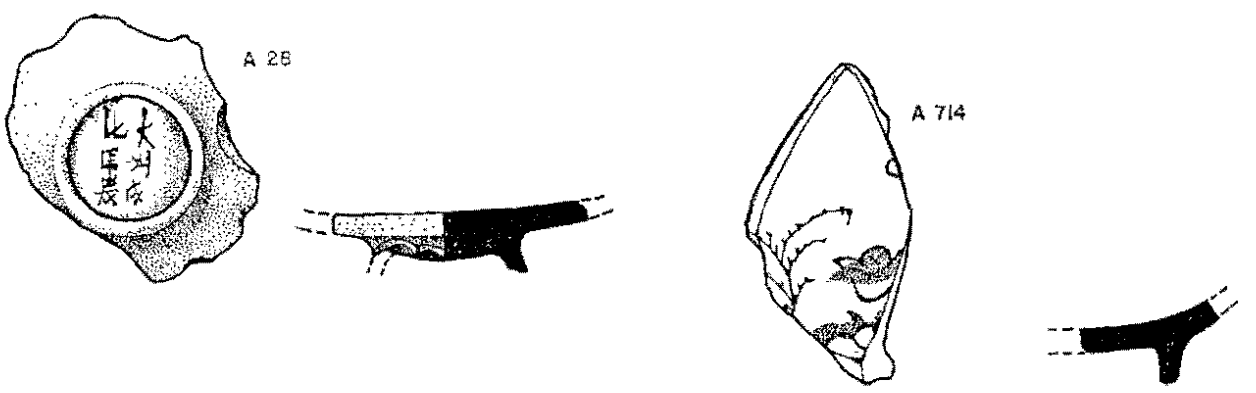





0 1 2 3 4 cm
Scale

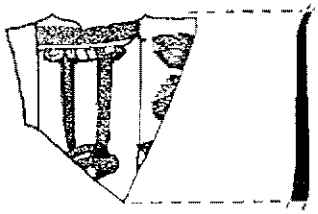

A 739


A 21

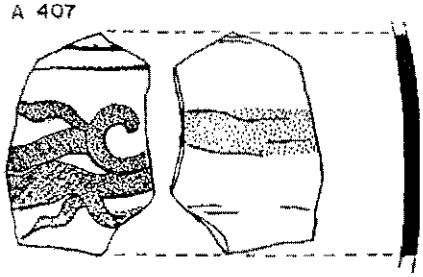

A 28
A 714

0 1 2 3 4 cm
Scale

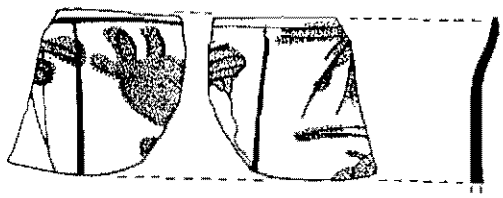
A 475



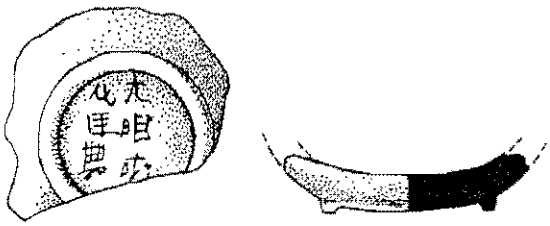
A 407



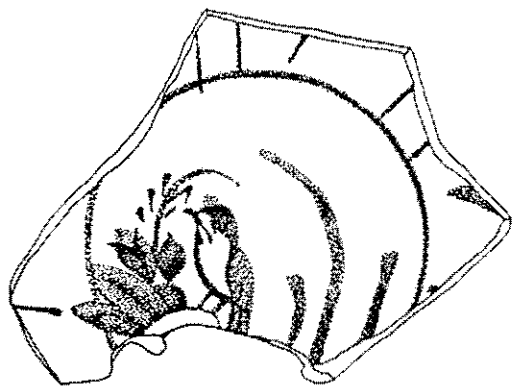
A 600



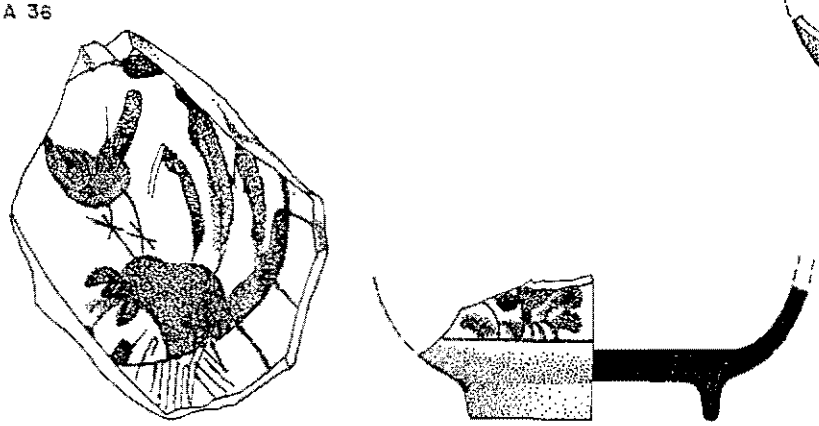
BLUE AND WHITE PORCELAIN BASE WITH FORGED CHENG HUA REIGN MARK
A 125

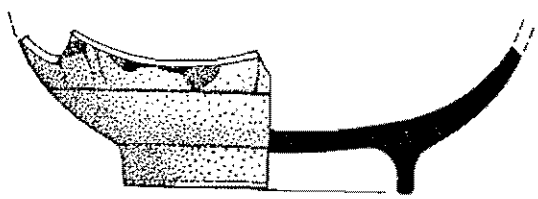


BLUE AND WHITE PORCELAIN BASE
A 137



BLUE AND WHITE PORCELAIN BASE
A 36





SWATOW WARE (?) BASE
A 408