

THE DRAKE AND CERMEÑO EXPEDITIONS' CHINESE PORCELAINS

AT

DRAKES BAY, CALIFORNIA

1579 AND 1595

by

Clarence Shangraw

and

Edward P. Von der Porten

Santa Rosa and Palo Alto, California

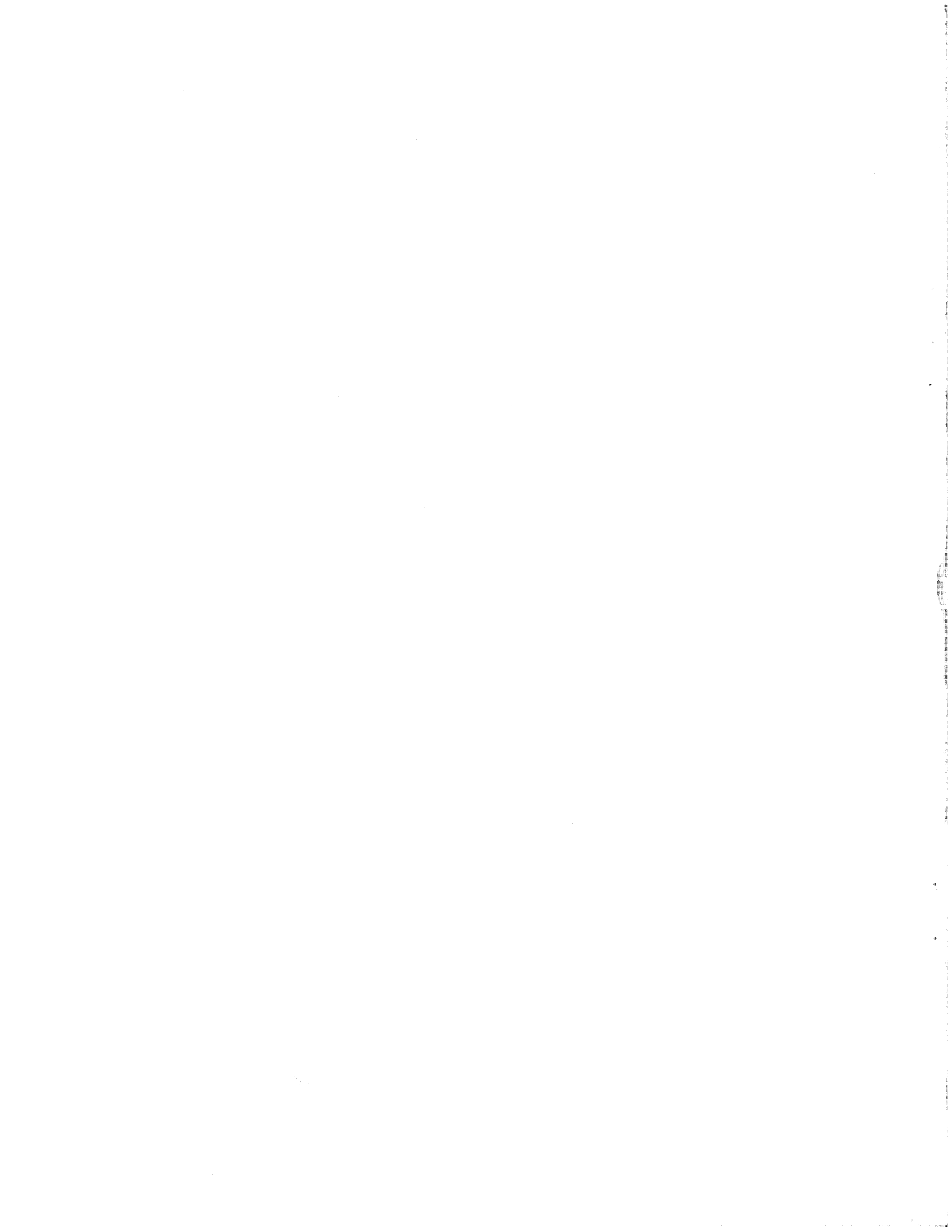
Santa Rosa Junior College

and

Drake Navigators Guild

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Production of this report was made possible through the use of facilities of Santa Rosa Junior College, where Dr. Roy Mikalson, President, and Mr. John Healy, Dean of Adult & Continuing Education, have provided generous support of many aspects of the research for many years.

Photography was done by Mr. James Dotta, San Francisco State University; Mr. Don Cabrall, Sonoma State University, and Mr. James Helmer, Santa Rosa Junior College, unless noted otherwise.

Illustrations of complete porcelains are from the Gemeentelijk Museum het Prinsessehof, Leeuwarden, the Netherlands; the Östasiatiska Museet, Stockholm, Sweden, and a private collection. No complete Ming porcelains have been found in the Point Reyes Peninsula. Photographs of sherds are approximately original size. Shape and design sketches are also full size. Photographs of complete porcelains are full size except the largest ones, which have been reduced to fit the pages.

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INTRODUCTION

Four decades of archaeology in Coast Miwok Indian village sites in the Point Reyes Peninsula, California, have uncovered significant parts of the earliest Manila Galleon cargoes still in existence. The great bulk of the surviving material is blue-on-white Chinese porcelain fragments from the first half of the reign of the Wan-li Emperor, who ruled from 1573 to 1619. Much analysis has been done and much has been written about these finds,¹ but not until 1980-1981 was the entire porcelain collection subjected to the combined scrutiny of an Oriental art historian and an historian-archaeologist. The results of that new analysis are presented here.

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1. The most important reports are Robert F. Heizer, "Archaeological Evidence of Sebastian Rodriguez Cermeño's California Visit in 1595," California Historical Society Quarterly, XX:4 (December 1941), pp. 315-328; Clement W. Meighan, "Excavations in Sixteenth Century Shellmounds at Drakes Bay, Marin County," Berkeley, Reports of the University of California Archaeological Survey, No. 9, Paper 9, November 20, 1950, pp. 27-32; Clement W. Meighan and Robert F. Heizer, "Archaeological Exploration of Sixteenth Century Indian Mounds at Drakes Bay," C.H.S.Q., XXXI:2 (June 1952), pp. 98-108; Richard K. Beardsley, Temporal and Areal Relationships in Central California Archaeology, Berkeley, Reports of the University of California Archaeological Survey, Nos. 24, 25, November 30, 1954; Adan E. Treganza, "The Examination of Indian Shellmounds in the Tomales and Drakes Bay Areas with Reference to Sixteenth Century Historic Contact," MS on file at State of California, Office of the State Historian, Sacramento, 1959; Adan E. Treganza and Thomas F. King, "Archaeological Studies in Point Reyes National Seashore, 1951-1962," MS on file at U.S. Department of the Interior, National Park Service, Region Four Office, San Francisco, 1968; Robert E. Schenk, ed., Contributions to the Archaeology of Point Reyes National Seashore, San Francisco, Treganza Museum Papers, No. 6, San Francisco State University, 1970; Edward P. Von der Porten, Drakes Bay Shell Mound Archaeology, 1951-1962; Von der Porten, Drake-Cermeño: An Analysis of Artifacts; Von der Porten, The Porcelains and Terra Cottas of Drakes Bay; Von der Porten, "Drake and Cermeño in California: Sixteenth Century Chinese Ceramics," Historical Archaeology, VI (1972) pp. 1-22, and Von der Porten and René K. Péron, Archaeology in the Point Reyes National Seashore, 1973.

Archaeology by University of California researchers found the first blue-on-white porcelain at Drakes Bay in 1940,² and the University followed up with further excavations in 1941 and 1949-50.³ Large-scale work was resumed by San Francisco State University researchers in 1959 and was continued by that institution through 1967.⁴ Santa Rosa Junior College, in coordination with the Drake Navigators Guild, a private research organization, began work in 1961, and these two institutions have been active in the region until the present time.⁵

The porcelain collections are kept in two places: The University of California finds at the Lowie Museum, Berkeley (112 sherds), and the others at the Treganza Museum, San Francisco State University, in trust for their owners: The Guild (98 sherds) and the National Park Service, which has owned the land since the late 1960's (497 sherds).

The only American exhibition of parts of the collections was the "Chinese Blue-and-White Porcelains from Drakes Bay" exhibition in June and July of 1979 at the Asian Art Museum of San Francisco, Golden Gate Park, San Francisco. The exhibition, and considerable scholarly interest in the collections, led the Museum's Senior Curator, Mr. Clarence Shangraw, to propose a re-study of

2. Heizer.

3. Meighan; Meighan and Heizer, and Beardsley.

4. Treganza; Treganza and King, and Schenk.

5. Von der Porten, Shell Mound Archaeology; An Analysis of Artifacts; Porcelains and Terra Cottas; "Sixteenth Century Chinese Ceramics," and Von der Porten and Péron.

the sherds to Mr. Edward Von der Porten, the historian-archaeologist who has done much of the analysis of the Drakes Bay historical artifacts over the last twenty years.

In early April 1980, the collections at San Francisco State University were borrowed and taken to the study area of the Museum. For the first time, over 80% of the sherds were spread out for analysis as a unit.

The first task was to separate out the sherds (most of them tiny chips) which probably match other sherds but cannot be identified specifically with other sherds. That left the sherds and matched-sherd groups which can be taken as statistically significant: that is, each sherd or sherd group represents a complete bowl, plate, cup or vase of the original sixteenth-century shipments and will be referred to as one item in this study. This sorting has been an on-going process since the early 1960's, and most of the catalog cards had already been marked for statistical significance by Mr. Von der Porten, so this process was rapid. Mr. Shangraw separated a few more sherds which could not be identified by kiln source, bringing the total to 129 sherds not used and 193 sherds and sherd groups (composed of 466 sherds) used in this study.

The collection was then analyzed for two sets of characteristics: whether or not the sherds showed evidence of surf damage, and whether their places of manufacture, shapes, qualities of potting and painting, and styles of painting could be used to date them accurately. These two sets of characteristics were then correlated to see whether it would be possible to develop conclusions about the expedition or expeditions which brought the shipments to Drakes Bay in the late sixteenth century.

These studies were completed and a preliminary draft report was drawn up in the spring of 1980. In the late fall, the Berkeley collection was made

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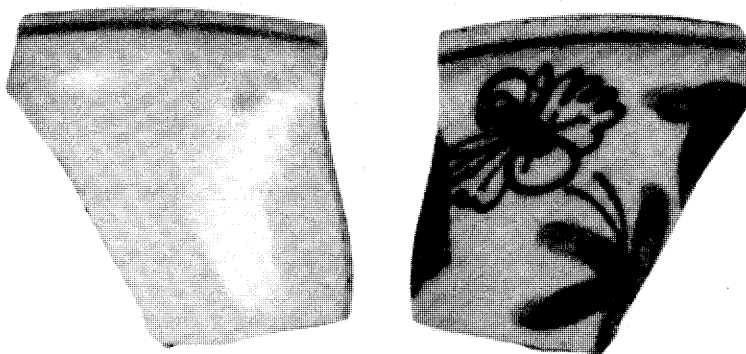
The collection was then analyzed for two sets of characteristics: whether or not the sherds showed evidence of surf damage, and whether their places of manufacture, shapes, qualities of potting and painting, and styles of painting could be used to date them accurately. These two sets of characteristics were then correlated to see whether it would be possible to develop conclusions about the expedition or expeditions which brought the shipments to Drakes Bay in the late sixteenth century.

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EVIDENCE OF SHIPWRECK

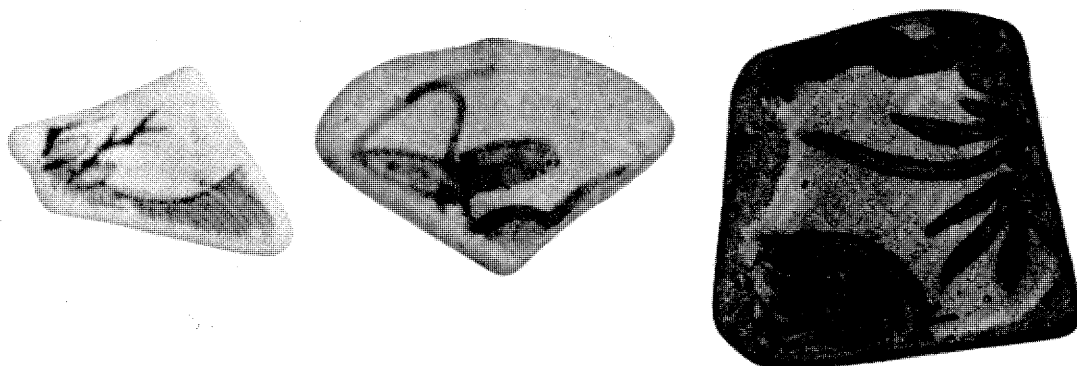
All the statistically significant sherds were spread out on their catalog cards and examined for damage which occurred when some of them were tumbled in the surf before they were taken to the Indian villages. The traces of such damage are, in order of severity,

1. slight rounding and smoothing of broken edges;
2. slight loss of glaze luster at rims, and at base and exterior of foot rings;
3. loss of glaze luster on all convex surfaces, with interior surfaces of deep bowls and both surfaces of bowl and plate bases affected least;



INTERIOR

4. and finally, complete destruction of the glaze.



Mr. Von der Porten had undertaken this study in the past, but this restudy, searching for every trace of damage and using magnification, revealed more surf-damaged sherds than had been suspected in the past: 148 surf-damaged out of the total of 235 in the study, or 63%. These statistics must be seen in context. A very few lightly damaged sherds may have been abraded in some other way on land, but this is not very likely, as the evidence of surf damage is distinct from evidence of other forms of wear and deliberate damage, and the soils chemistry of the Indian sites does not damage the sherds. On the other hand, a few undamaged sherds, especially base sherds, may be small sections of large sherds, or of whole bowls or plates, which were lightly surf damaged at their edges but not over their whole surfaces. The number of such undamaged sherds derived from damaged larger sherds cannot be large, because it would assume that quantities of whole or quite large sections of bowls and plates reached the surf line, a problem to be discussed later, and because many of the undamaged sherds include parts of the rims or foot rings, the areas most subject to damage. The breakdown into damaged and undamaged sherds, then, can be taken to be accurate whenever reasonably-sized groups of sherds of specific shapes, decorative designs, and kiln sources are compared, since such groups contain adequate numbers of the damage-sensitive rim and foot-ring sherds.

The significance of the damaged versus undamaged porcelains lies in their possible sources: extensive research shows that only two late-sixteenth-century expeditions came ashore in central California, that of Francis Drake in June-July 1579 and that of Sebastian Rodriguez Cermeño in November-December 1595. Drake had four chests of porcelains which he had taken from a Spanish ship off Central America, and strong evidence indicates that none of it reached

England, with California his most logical abandonment spot.⁶ Cermeño's San Agustin, after a voyage from the Philippines, was wrecked by a storm while anchored in Drakes Bay with most of her crewmen on shore. Although the survivors escaped to Mexico in a small craft, none of the cargo could be taken with them.⁷

Porcelains were tightly packed in wooden chests, probably with clay between the individual plates and bowls.⁸ The great weight of the chests and their imperishable contents led to their being stowed very low in the ships' holds as part of the ballast used to stabilize the ships.⁹ When the San Agustin dragged her anchors in the storm surge and began to pound on the bar off the mouth of Drakes Estero, her staunchly built lowermost hull would have held together while her upper works and the sides of the hull above the turn of the bilge were wrenched apart,¹⁰ a process which produced porcelain sherds which show dramatic evidence of the effects of massive shearing forces, notably on the 2½-inch (6cm)-tall small bowls (Type VII). It is clear, then, that at least some of the chests were ripped apart in the shipwreck.



INTERIOR OF A SMALL BOWL

Did some of the porcelain-filled chests remain intact? There is no way to know, but any that did would have been so heavy that they would have sunk into the roiled sands rather than tumble ashore, in contrast to the much more buoyant chests of waxes and silks. Only waxes and silks are mentioned as being salvaged by Cermeño's crewmen.¹¹

Did individual plates, etc., wash ashore intact? A few vessels from broken boxes may have tumbled ashore intact--but very few, given the destructive forces at work.¹² If any porcelains were used by the ship's officers, which is unlikely because of their great value, they would have been high in the stern of the San Agustin and would also have had little chance of remaining intact during the wreck. Considering their value, it is unlikely that any were brought ashore before the wreck for day-to-day use in the temporary camp.

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6. Von der Porten, Porcelains and Terra Cottas, pp. 26-28.
 7. Henry R. Wagner, ed., "The Voyage to California of Sebastian Rodriguez Cermeño in 1595," C.H.S.Q., III:1 (April 1924), pp. 3-24.
 8. Von der Porten, Porcelains and Terra Cottas, pp. 24-25.
 9. Ibid., p. 25.
 10. Raymond Aker, The Cermeño Expedition at Drakes Bay, pp. 36-38.
 11. Ibid., p. 37.
 12. Von der Porten, Porcelains and Terra Cottas, pp. 24-26. Although that study listed eight sherds as coming from plates and bowls that had been abraded only on the exterior and therefore had come from porcelains that had reached the beach intact, it is now realized that the same effect could have been created by very large sections of vessels, particularly deep bowls such as Type VII. Because of this uncertainty, no attempt has been made in this study to create categories of surf damage.

Could whole or broken porcelains have tumbled ashore without showing abrasion? Considering the wreck site approximately four hundred yards off shore,¹³ and the destructive nature of surf-and-sand roiling, the answer once again must be few or none.

Could Francis Drake's porcelains, if abandoned to the Coast Miwoks, have been lost in the surf and then recovered? Again, few or none.

The conclusion must be drawn that water-and-sand-damaged sherds are, with few if any exceptions, from the 1595 wreck of Sebastian Rodriguez Cermeño's San Agustin. A few non-abraded sherds may also be from the San Agustin, but the great bulk of the non-abraded porcelain sherds should be ascribed to a non-Cermeño source: the 1579 expedition of Francis Drake in the Golden Hind.

Does the nature of the sherds in the collection support or refute these conclusions?

13. Aker, Cermeño Expedition, p.36.

II

EVIDENCE OF THE PORCELAINS

The great Chinese export porcelain trade emerged during the Ming Dynasty's Wan-li era (1573-1619), concurrently with a dramatic decline in court patronage of the former imperial kilns. To offset this severe reduction in demands on the Ching-te Chen porcelain factories, idled potters set up many private, short-lived kilns. In their new endeavours, they remained, at first, in the far-inland Ching-te Chen area with its extensive clay deposits, kilning materials, and well-developed inland waterway transportation system. Eventually, however, the art found its way into a network of kilns near the seacoast which had ready access to overseas shipping. This led ultimately to the creation of a vast assortment of qualities and styles of export porcelains, with a burgeoning production in the late sixteenth century as local potters also took up the art. Thus, lack of patronage at home and rapidly growing overseas demands, especially the birth of the Manila Galleon Trade in 1572,¹⁴ caused a resurgence and redirection of a fading industrial art.

Even though the variety of these Chinese blue-on-white export porcelains proliferated in forms and decorations during the late sixteenth and early seventeenth centuries, they have been little studied until recently. Traditionally, historians of Chinese ceramics have concentrated their studies on the exquisite official (imperial) wares produced under court patronage at the Ching-te Chen kiln complex in Kiangsi Province. Only in the past two decades has that inattention

14. The Spanish trade from the Philippines to Acapulco, Mexico, began in 1565. Manila became the seat of government in 1571, and large-scale trade between Manila and China began in 1572. William Lytle Schurz, The Manila Galleon, pp.15 , 25, 27.

been corrected, and today we have an appreciably clearer understanding of the more prosaic ceramic export categories. Using the continually expanding archaeological data from the People's Republic of China (excavated kiln sites, documents rediscovered, and dated tomb contents) scholars today are assiduously establishing reliable dates and provenances for these porcelains, defining them in terms of technical control, form, decorative idiom, and painting style.

In the West, research is augmented by knowledge derived from the porcelain cargoes retrieved from the remains of firmly dated shipwrecks of the sixteenth and seventeenth centuries, from commissioned porcelains bearing sixteenth century European coats-of-arms, and from reliable inventories of collectors' cabinets in Europe, particularly royal collections.

Although the exportations of Chinese ceramics, both over land and sea, had occurred as early as the late T'ang Dynasty (618-906 A.D.), reaching a peak of activity in the thirteenth and fourteenth centuries, these exports had been essentially monochrome-glazed stone-and porcellaneous-wares. Then, in the Middle Ming (late fifteenth century) some blue-on-white porcelain wares were first designated for the export market. By the mid-sixteenth century, new forms and decorative styles were beginning to be developed specifically to cater to foreign tastes.

Only one early Chinese text refers to this trade and its rapid development:

"At the time of the late fifteenth century, Chinese porcelains were used extensively in India, the Philippines, Java, Sumatra, Borneo, Persia, Arabia and Zanzibar. As well, during the reign of the Wan-li Emperor (1573-1619) we encounter the statement in the records of the supervising port censors, 'those foreigners living beyond the seas -- in Thailand and Cambodia -- have sapan-wood, spices, rhinoceros horn, and ivory tusks, all of which are needed by China. Also, in the

states of Lu-sung (Luzon) and Fo-yin (as yet unidentified) there are mountains of silver, which the foreigners have produced only as cast silver coins, and in return these foreigners are satisfied with porcelains from Chiang-hsi (Kiangsi) as well as lacquer wares, fruit and porcelains from Fu-chien (Fukien)."¹⁵

This passage, published in the seventeenth century, is the only known early written Chinese reference to the extensive Southeast Asian porcelain trade and, in particular, to South-and Central-American silver (not Philippine as the author assumed) in the Manila Galleon Trade, with Manila on Luzon Island as its trading center.

Initially some wares originally intended for the Chinese market proved to be acceptable items overseas. In time, the extensive kiln complexes of Ching-te Chen began to produce some ceramics specifically for trade, but within a short time, the innumerable kilns in South China, particularly in the provinces of Fukien, Kwang-tung and Kiangsi were developed intentionally to make export wares at locations with ready access to seaports. Those kilns were all provincial. Because they were far removed from the influence of the court and official patronage (that is, the wares made at Ching-te Chen) and because so many of them sprang up almost spontaneously and operated for only a generation or two, unique problems exist in traditional dating. Thus, the art historian has had to treat these export wares differently from the official wares.

Sir John Addis, the foremost Ming porcelain authority, has noted, "by the Chia-ching reign (1522-1566) certain export types were already being created for the export market, and by the first decade of the seventeenth century, certain

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15. Chuan (scroll volume) 96 of T'ien-hsia chun-kuo li-ping shu (a seventeenth-century compilation of geographical information taken from various provincial gazeteers and histories), cited in A Draft History of Ceramics at Ching-te Chen (Ching-te-chen t'ao-tz'u shih-Kao), p.251. The system used to Romanize Chinese words in this study is Wade-Giles.

shapes and styles already had been codified for the European trade."¹⁶ It is precisely within this experimental development era that the Drakes Bay blue-on-white porcelains belong. The changes in trade habits and production can be observed by studying materials found in dateable shipwrecks, in particular the firmly attributable material carried on the San Agustin wrecked off Limantour Spit, Point Reyes Peninsula, California, in 1595. The San Agustin deposition is the earliest-known dateable wreck in which Chinese blue-on-white porcelains were being carried as cargo.

During this germinal stage of creation and production, astute traders demanded more and more porcelain wares of types most appealing to their markets. As a result, there developed certain styles in form and decoration exclusively for export. A complex system of supply and demand developed as competitive potters scurried to take advantage of these newfound lucrative markets. Decorative styles and painting qualities varied tremendously. Often a style long out-of-fashion at home was revived for export. Many wares, particularly at the provincial seacoast kilns, were mere imitations of the formerly fashionable styles. Repetition of a design or decoration over a long period of time often resulted in the motifs and idioms being reduced to abstraction or mannerism. On the other hand, the more technically proficient potters and painters attempted and successfully perfected invigorating and progressively expanding design categories.

All of these events were occurring simultaneously, and extremely keen observation and analysis of stylistic variations are required to discriminate one product from another and to properly attribute a particular object. To identify an object there must be a thorough knowledge of the output and dis-

16. Sir John Addis, South-east Asian and Chinese Trade Pottery, p.6.

tinguishing characteristics of the provincial kilns and the official kilns, and of the original source style, the locally or provincially imitated style, provincially recreated copies of formerly fashionable styles, and the seacoast localized style.

In analyzing various blue-on-white export porcelains, variations of decoration and type are immediately observed. Changes in design, manner of application, and styles of decoration occur for a multiplicity of reasons. Nevertheless, decorative change, decorative elaboration, and decorative innovation, as they appear on Chinese export ceramics, have consistently fallen into an absolutely clear pattern. When a new design or decorative idiom was first used, it was painted with precision, but after a while, because the wares were hand-worked and produced in quantity, the application tended to become casual because the task became boringly repetitious -- and anyway their newfound customers were neither discriminating nor that demanding. Another consideration is that the central decorative theme might change from piece to piece whatever the schematic layout, but a border decoration might continue to be used for a decade before phasing into a more elaborate design, the results of experimentation based on the previous design. The provincial kilns continued for convenience to copy the old decorations from Ching-te Chen, at first perfunctorily, and then, through continuous repetition, the decorations rapidly devolved into near abstraction. These phenomena, and changes in schematic decorative layout and their elaboration, are particularly relevant to studying the Drakes Bay porcelains.

These characteristics can be easily observed on the Kraakporselein, a Dutch term for the blue-on-white porcelains first transported by carracks, a Portuguese ship type. Kraak ware, as a group, is only just now becoming fully

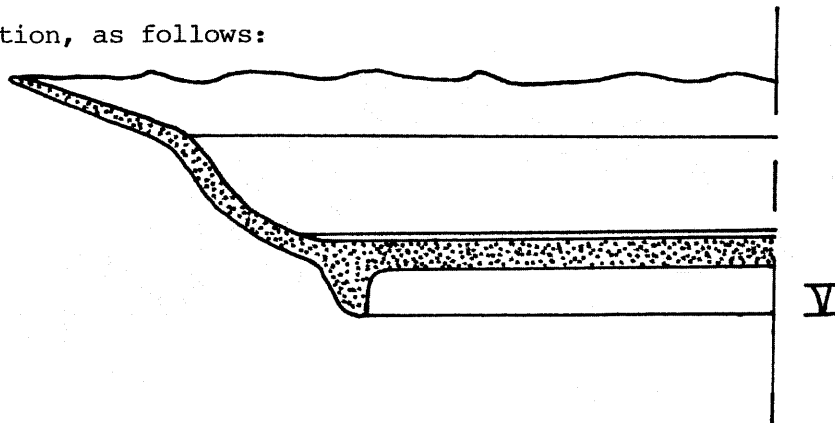
understood from the viewpoint of form and design evolution.¹⁷ Kraak ware was first made in Fou-liang (the Ching-te Chen kiln complex), Kiangsi Province, with production beginning about 1550 and ending about 1640. Kraak was made and exported in large quantities and had tremendous influence on early European ceramics such as Delft, which copied it closely. The Kraak potters adopted a fresh naturalistic decorative repertoire, deviating from official decoration. In shape, Kraak is distinct, being moulded into panels radiating around a central area which contains a naturalistic motif. Its potting is very brittle and thin-walled. A sub-category of Kraak-type ware, more perfunctorily made and with slightly thicker walls, is attributed to provincial kilns in Fukien, and often bears a gritty footring, the one distinct characteristic of Fukien-made porcelain.

Kraak porcelain research is particularly relevant in evaluating the Drakes Bay blue-on-white sherds because a sizeable quantity of those sherds is Kraak of various types.

17. Brian S. McElney, "The Blue and White Wares, (post-15th Century)," in Sir John Addis, South-east Asian and Chinese Trade Pottery, pp. 34-36.

Kraak Wares

Brian S. McElney's study¹⁸ divides Kraak porcelain plates (Type V in the Drakes Bay typology) into various design groups according to chronological stages of production, as follows:

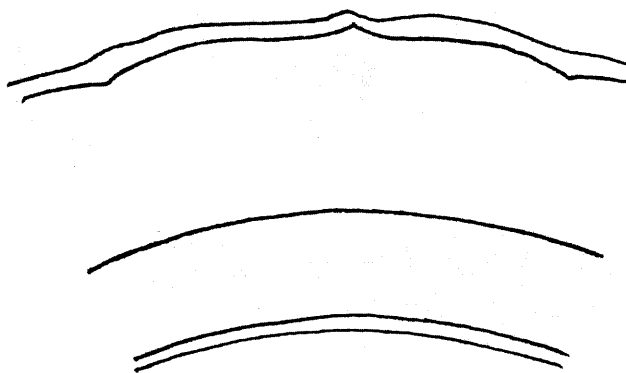


Group I:

Central naturalistic motif with undecorated rim and cavetto (cavetto is the hollow between the flattened rim and the flat interior); most bear a Chia-ch'ing mark (1522-1566). No sherds from this group were found at Drakes Bay.

Group II:

Central naturalistic motif with decorated rim, usually flat, with an undecorated cavetto.

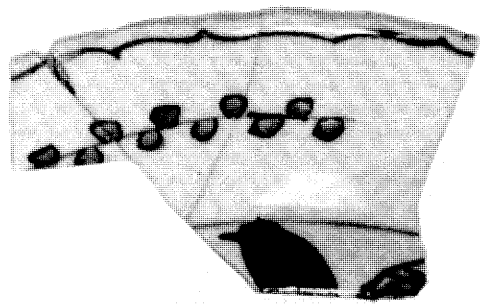
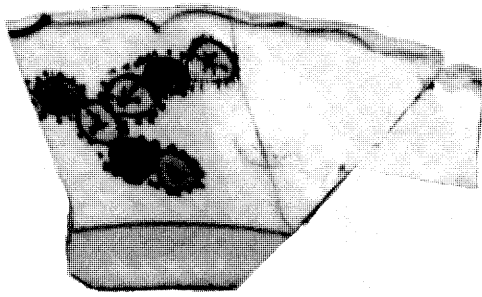


18. Ibid.

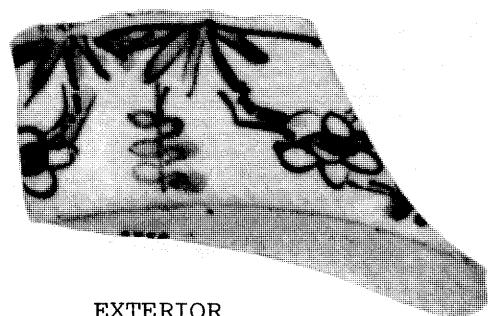
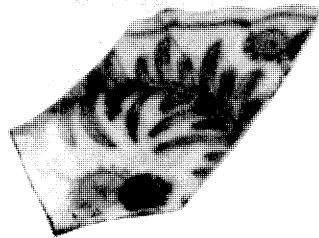
Specimens of this type occasionally bear a Chia-ch'ing mark. All Kraak wares from the famous Ching-te Chen kilns in this category are attributed to the third quarter of the sixteenth century by McElney.



ORIGINAL SIZE: 8-INCH (20 cm.) DIAMETER



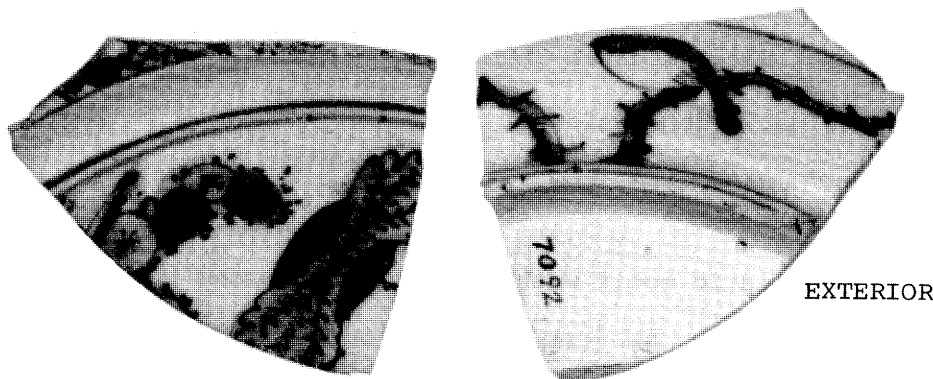
EXTERIOR



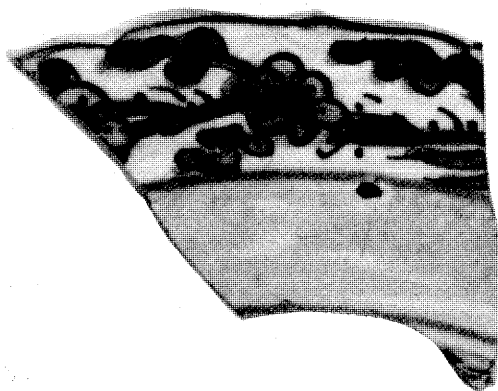
EXTERIOR



Twenty-seven sherds from this group have been found at Drakes Bay. The sixteen surviving rims are flattened and foliate edged and bear a continuous decoration of a naturalistically rendered aquatic scene. Eleven surviving central panels show deer in scenes with trees, foliage, rocks and cloud scrolls, while one has an aquatic scene.



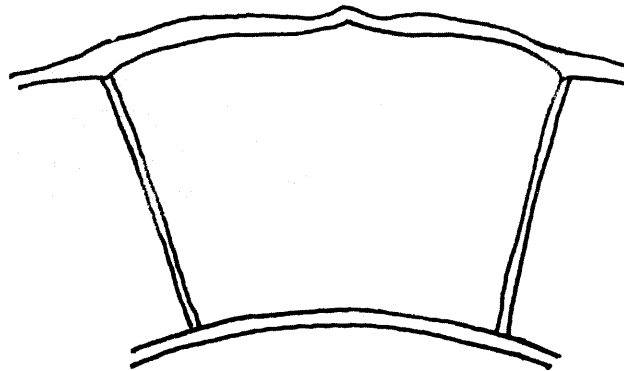
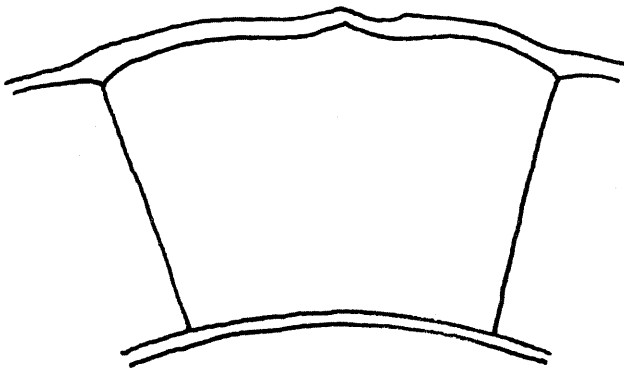
The painting on 14 of the 27 is carefully delineated and skillfully done, examples of genuine Kraak porcelain from Ching-te Chen and the nearby Fukien kilns. None of these are water worn. Ten of the well-potted sherds show water wear, and the painting is inept and in light silver blue. Three more waterworn sherds have a greyish-white body, are medium walled, and casually painted -- distinctly cruder than the preceding group. One of them has a floral rim strip.



These two waterworn groups manifest a provincial origin: they are examples of pseudo-Kraak produced in Fukien province later than the well-painted Kraak wares of the third quarter of the sixteenth century. The pseudo-Kraak pieces of this group, because of the time lag commonly occurring between original and copy, must be attributed to the fourth quarter rather than the third quarter. (McElney's study and attribution used only the "classic" Kraak wares made at Ching-te Chen; thus, it has been necessary to amplify his valuable conclusions.)

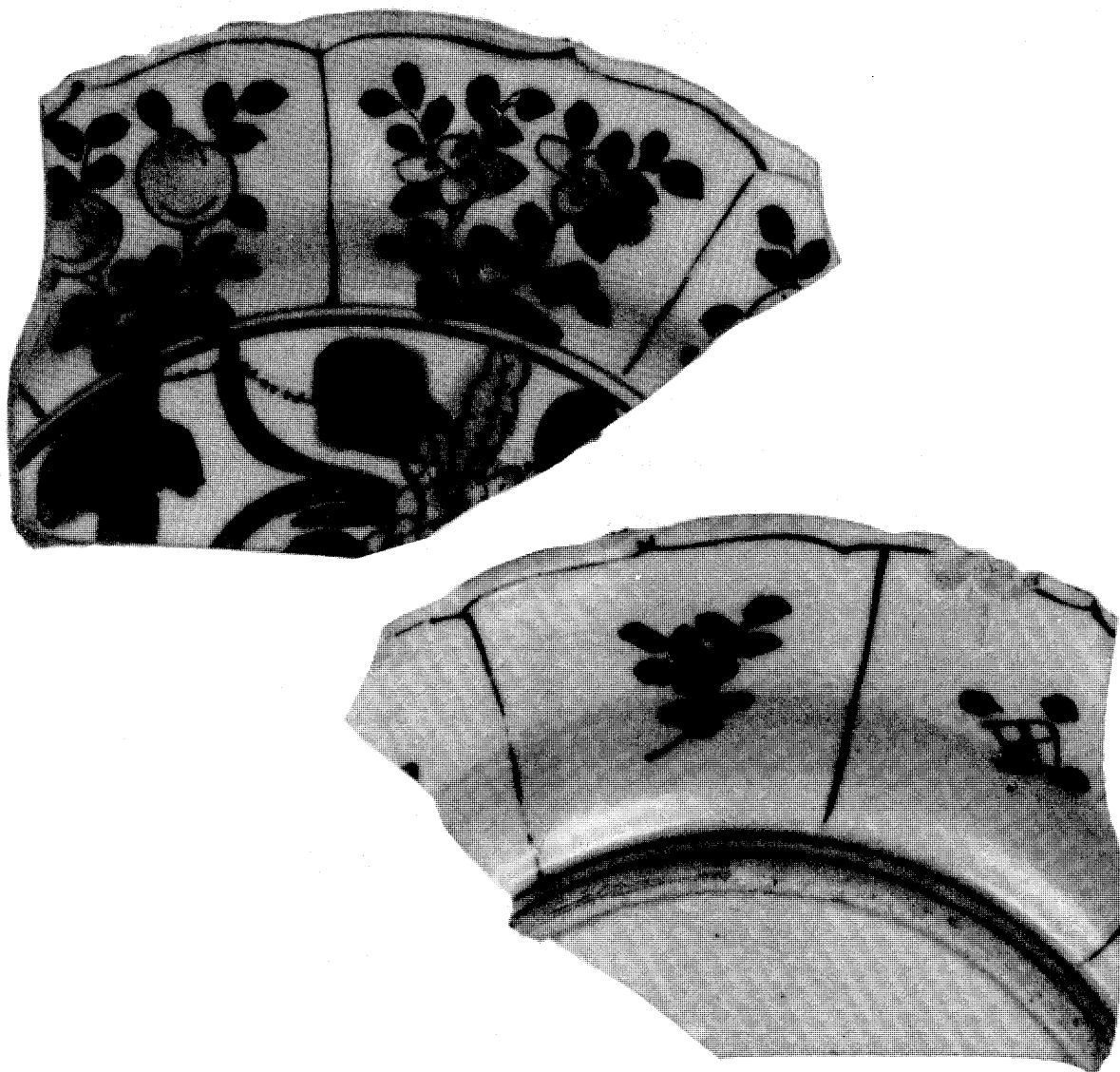
Group III:

Central naturalistic motif with a cavetto and broad border divided into segments, separated merely by lines.



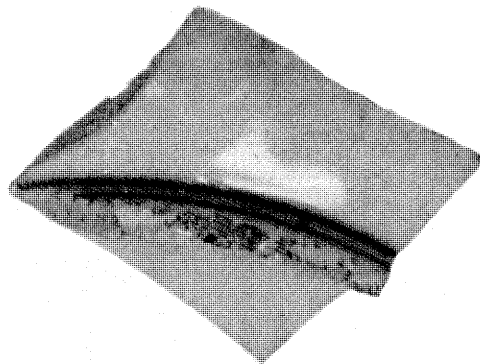
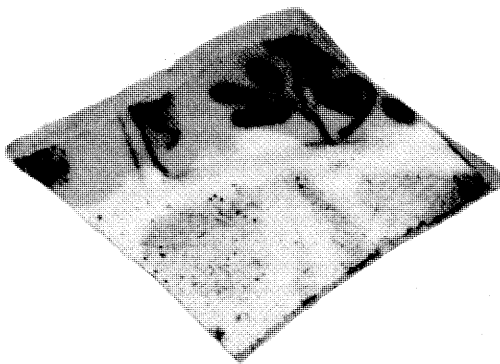
This group is attributed to the fourth quarter of the sixteenth century by McElney. Shangraw and Von der Porten further divided the 3 sherds in this group into two subgroups: those with segments separated by single lines, and those with segments separated by double lines.

Only one sherd with single-line separators exists. It has boldly and sharply drawn foliage and fruits in the panels, is a dark blue, and is not water worn.



EXTERIOR

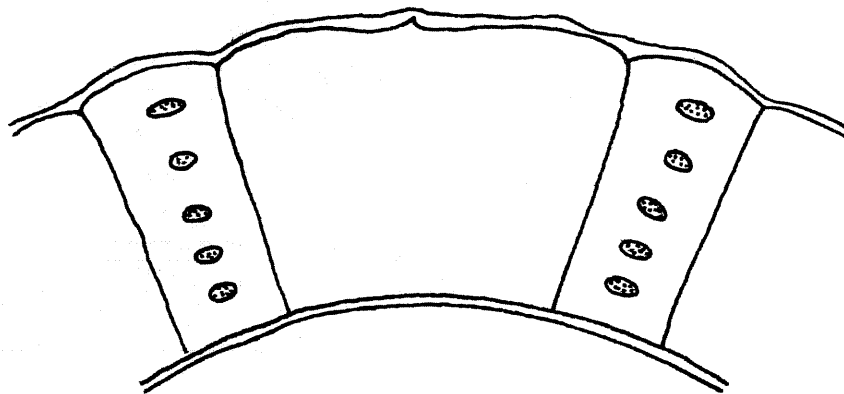
Two sherds with double-line separators have been found, one without and one with water wear. The latter is rather heavily potted, and has a gritty foot ring.



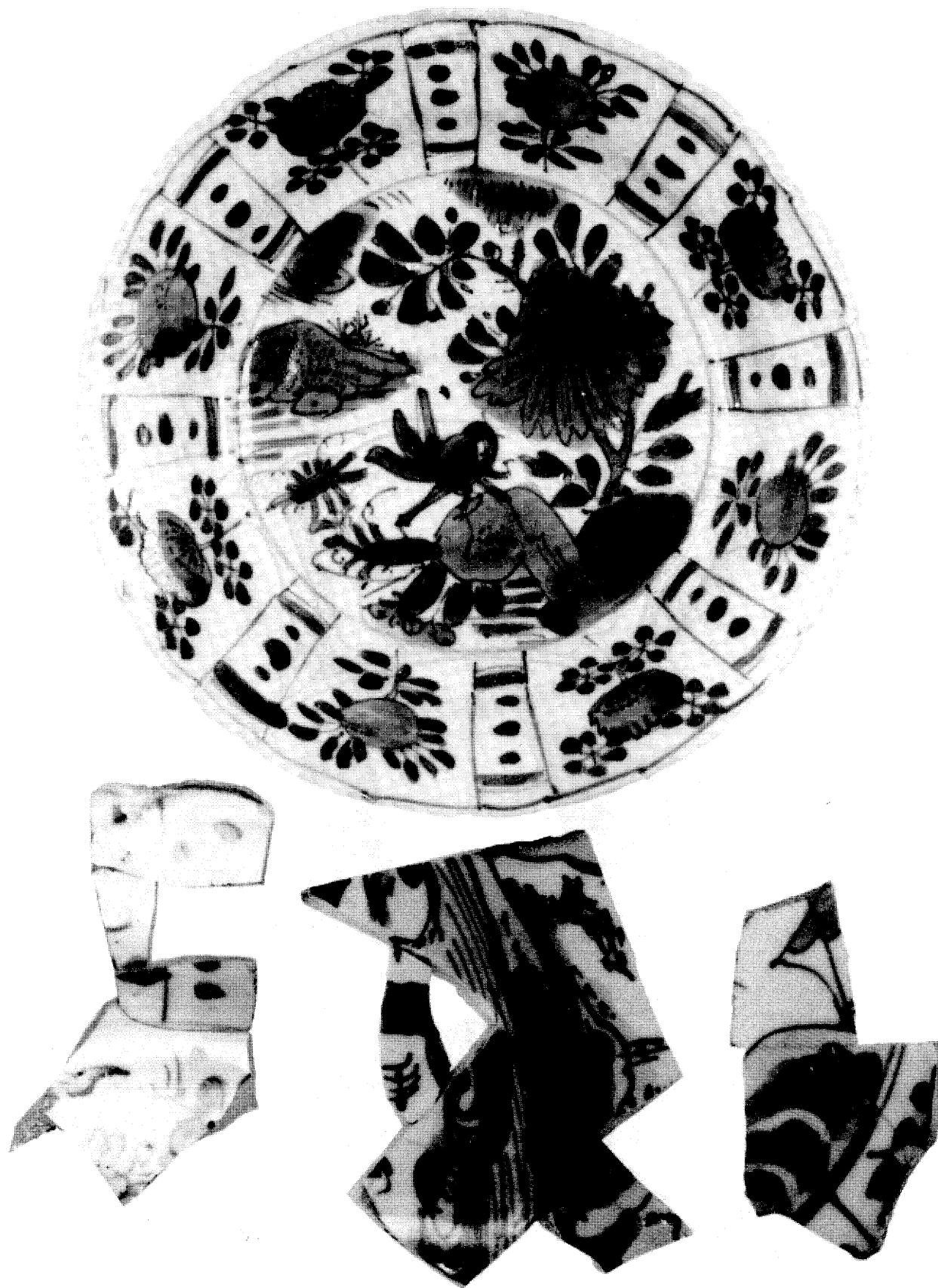
EXTERIOR

Group IV:

Central naturalistic motif with a broad border in which the segments are separated by small outlined panels containing dots representing perfunctorily-stylized tassels and pendants.

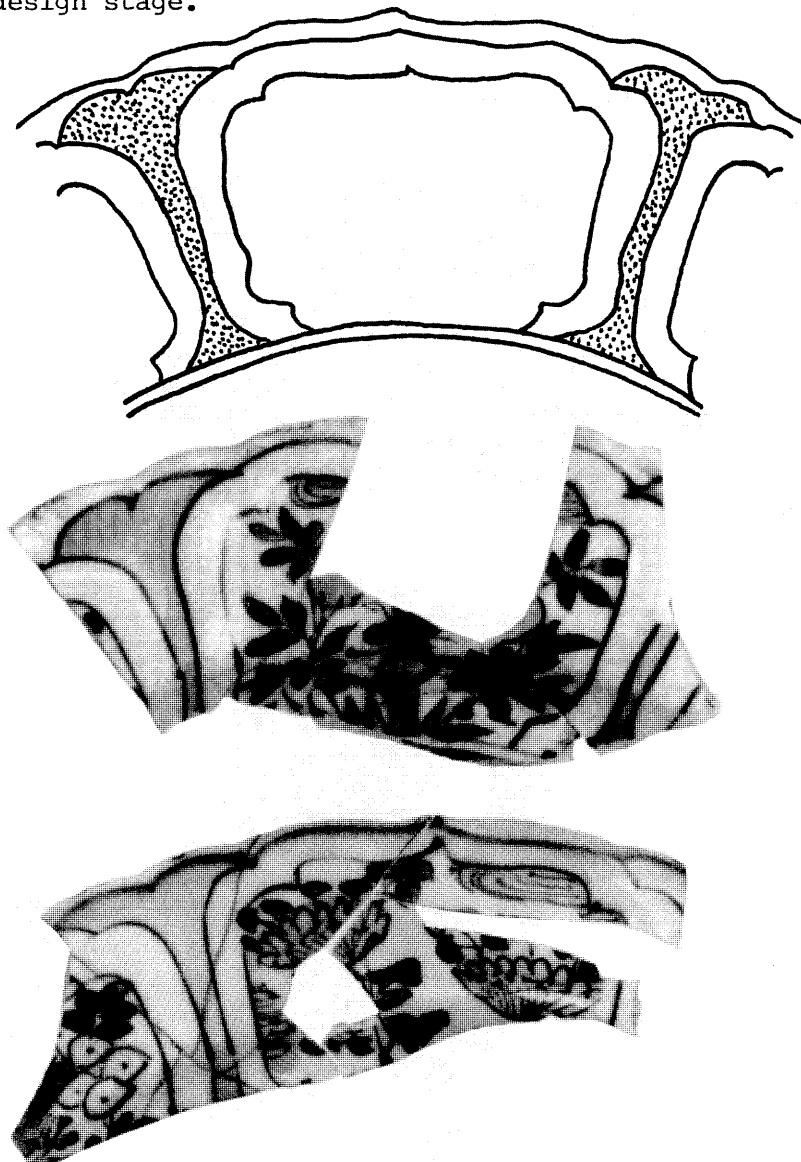


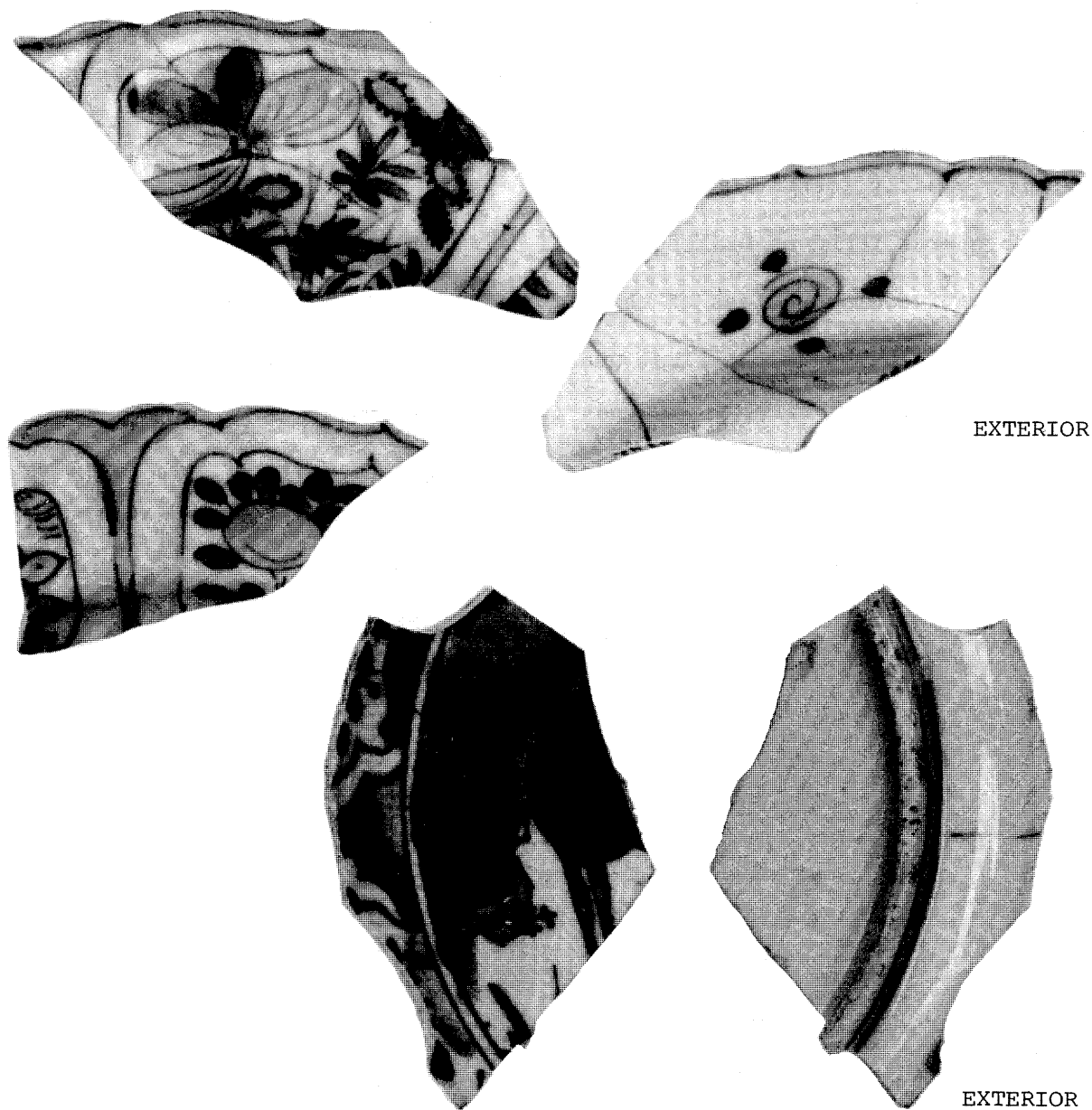
This group is attributed to the fourth quarter of the sixteenth century by McElney.



Three of these "beaded pendant" sherds have been found, two of them not water worn and boldly and well drawn in dark blue. One of them has the gritty foot. The third sherd is very heavily potted and is water worn.

Another variant of the segmented-rim idea has its rim panels surrounded by cartouche-like white borders and separated by blue "I" shaped "wedges" -- an advanced design stage.





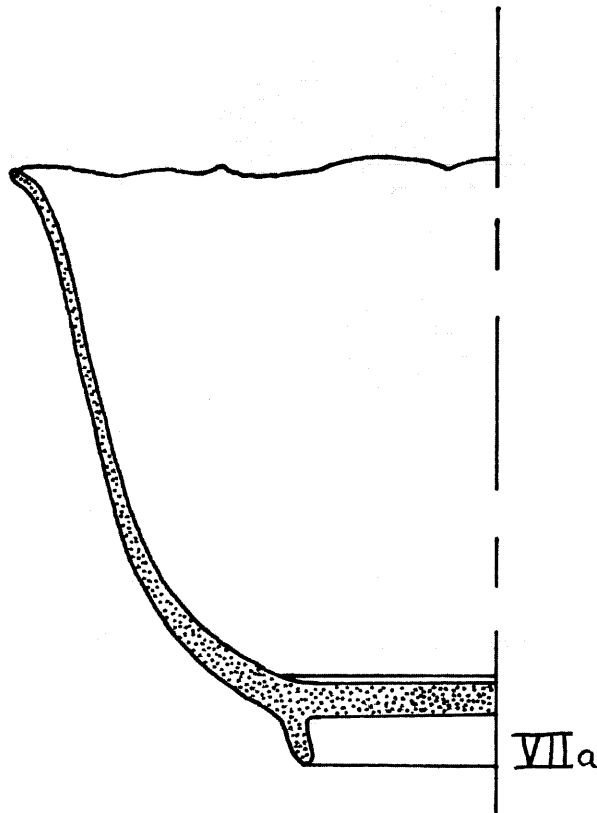
Eight sherds with wedge-separated panels are in the collection, and seven are water worn. Although they are generally carefully drawn, as would be expected from a new design, the panels are crowded, the drawing rather fussy, and the color a light, silvery blue. The potting is often a bit heavy. All these are characteristics of approximately the last decade of the sixteenth century. Two on which the foot ring survives show the Fukien

grit on the foot.

Ten more plates have been identified, but their design groups cannot be ascertained. Two are water worn and eight are not. They are similar to the more clearly identified plates.

No sherds found at Drakes Bay fall into McElney's Groups V, VI or VII: all decorative elaborations of the simplicity of the first four groups; V and VI being attributed to the first quarter of the seventeenth century, with counterparts recovered from the 1613 wreck of the Witte Leeuw, and VII being attributed to the second quarter of the seventeenth century.

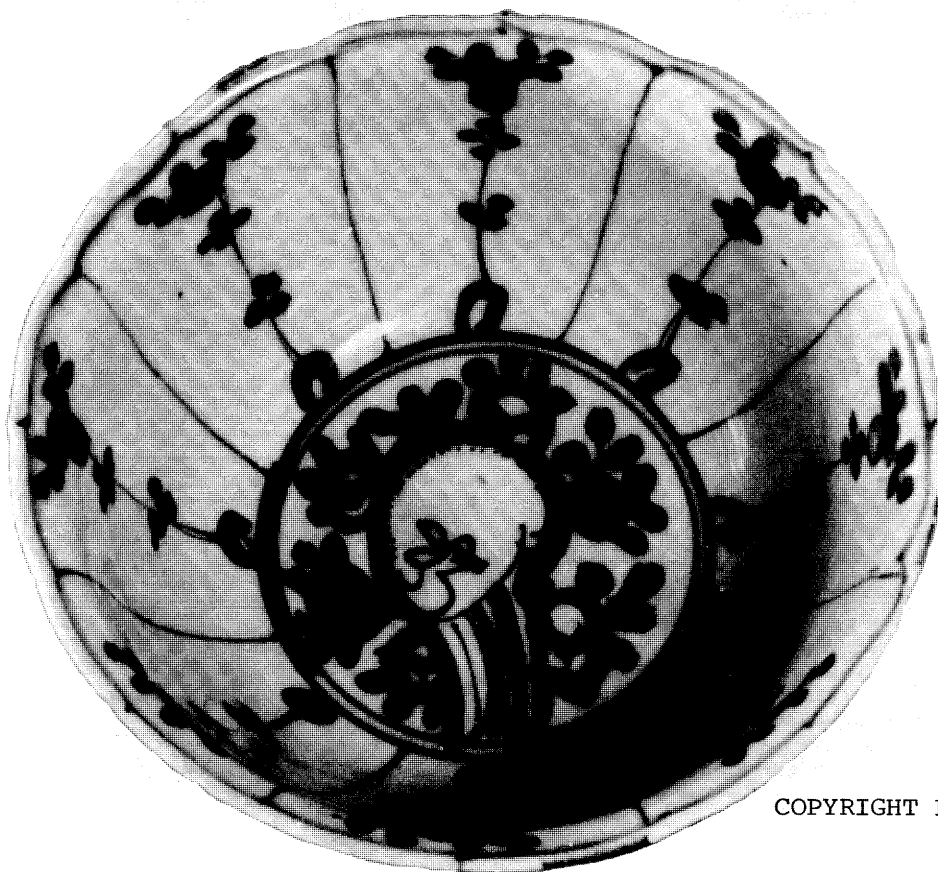
A second Kraak shape is the steep-sided bowl (Type VIIa). It follows the general pattern of the plate decorative types.



The largest group consists of sixteen bowls decorated with deer surrounded by foliage in panels separated by single lines on the exterior and with simple foliage in panels on the interior.

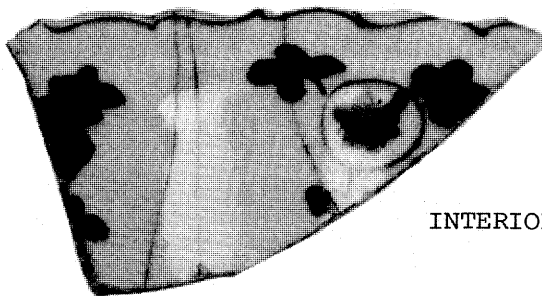
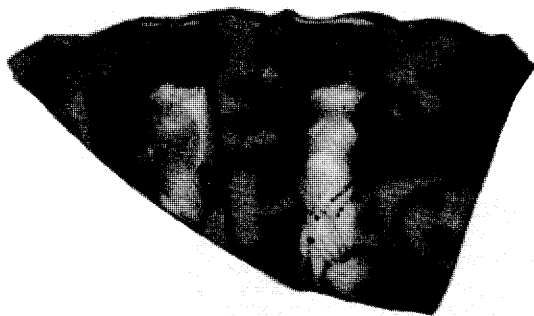


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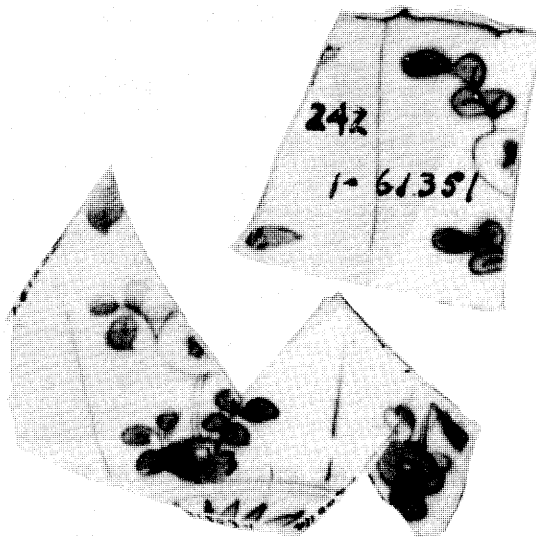
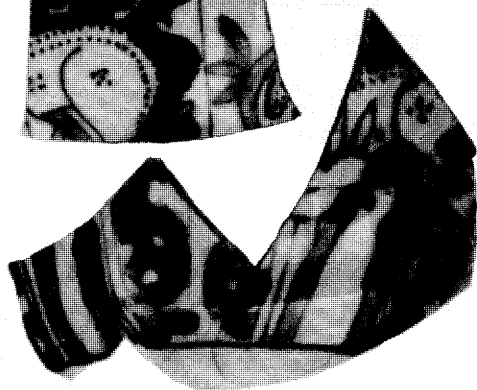


INTERIOR

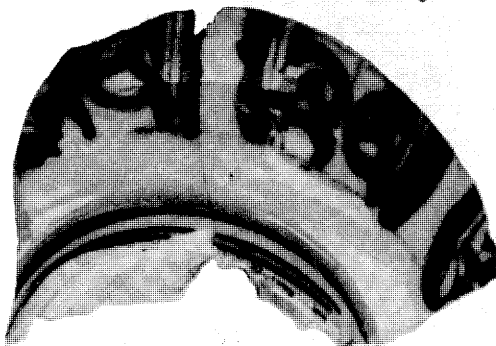
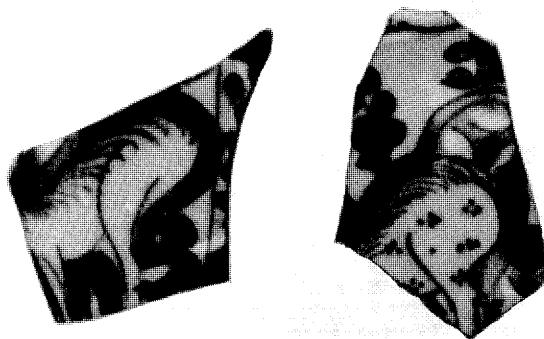
COPYRIGHT PRINCESSEHOF MUSEUM



INTERIOR



INTERIOR

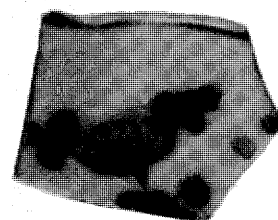
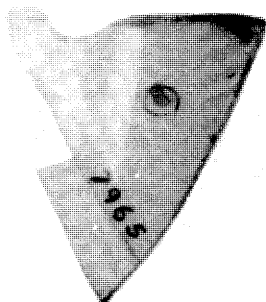


INTERIOR

The eleven non-waterworn bowls are boldly painted in dark blue, while the five waterworn bowls are poorly painted in light silvery blue.

The remaining bowls of this shape are decorated on the exterior with designs below the rim, then a white zone, and finally a row of overlapping petals just above the foot ring.

The simplest of these designs is a continuous strip around the bowl.

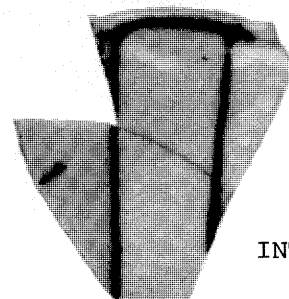
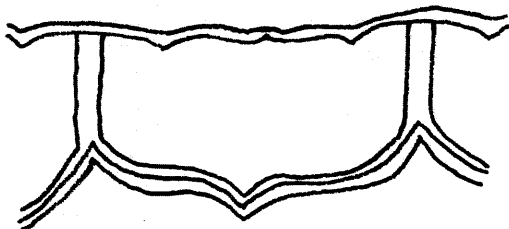


INTERIOR

INTERIOR

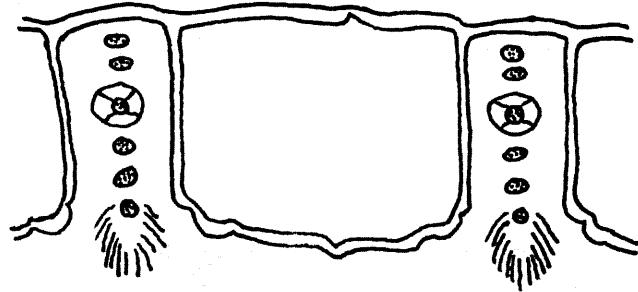
Two survive: one with a flying horse over waves, the other with a floral design. Both have poor quality painting and both are water worn.

A single example of a flying horse over waves in a panel separated from the next panel by two lines is well drawn and not water worn.

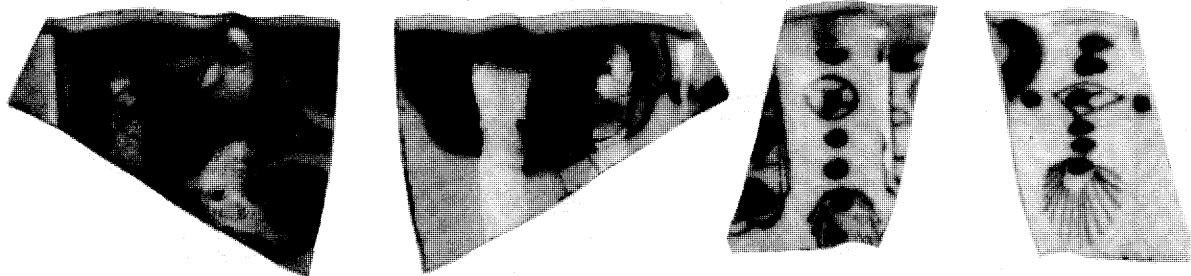


INTERIOR

Six bowls have flying horses over waves in panels separated by beaded pendants. The interiors have beaded pendants separating cloud collars around flowers.



THIS IS A SLIGHTLY LATER EXAMPLE. COPYRIGHT PRINCESSEHOF MUSEUM

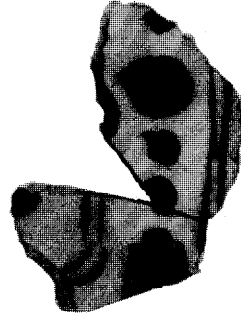


INTERIOR

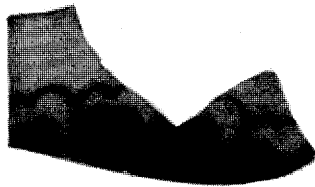
INTERIOR

Three well-painted bowls are not water worn; three poorly-painted ones are water worn.

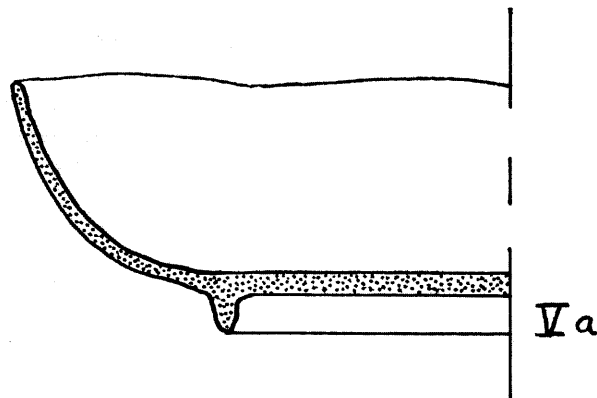
One bowl that is apparently larger than the previous examples has the beaded pendant between panels and interior underglaze moulding in a floral or foliage pattern. It is not water worn.

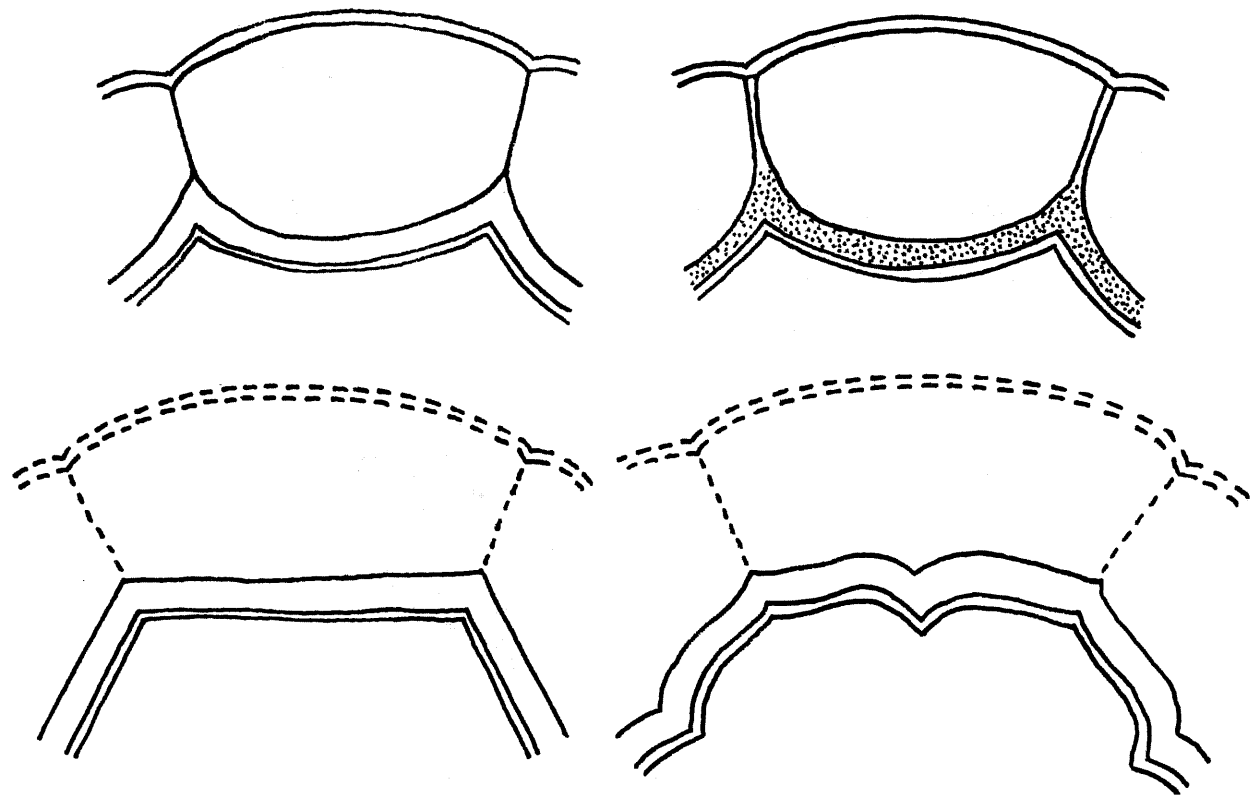


An example of the petals around the base, which is not water worn, and a waterworn sherd of unknown design, complete the collection of this bowl design.

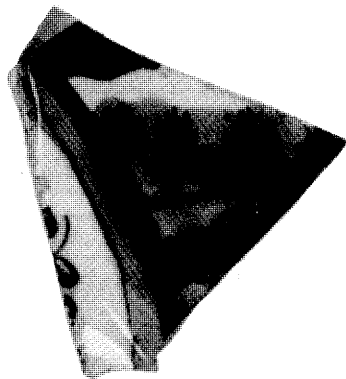


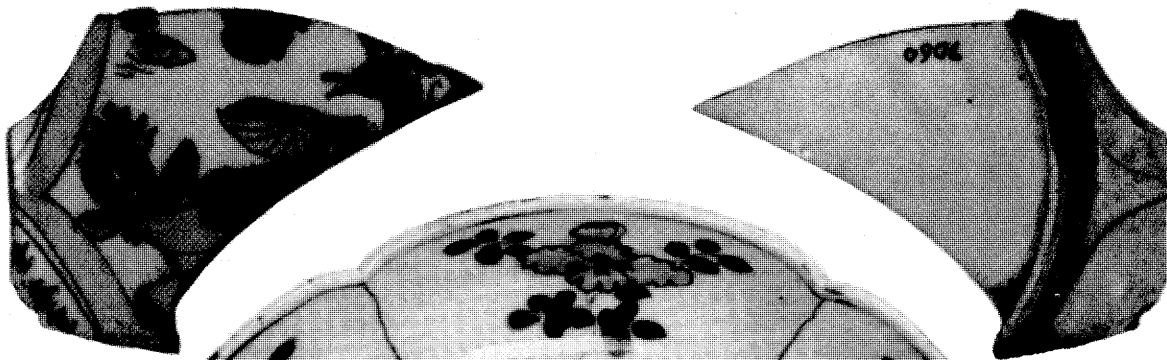
A third Kraak design is a small, low bowl with a hexagonal central panel and deeply moulded wall panels separated by single or double lines (Type Va).





The central panels have a variety of naturalistic scenes, while the wall panels have sprays of foliage. Four sherds, three of them water worn, are well painted in light silvery blue.

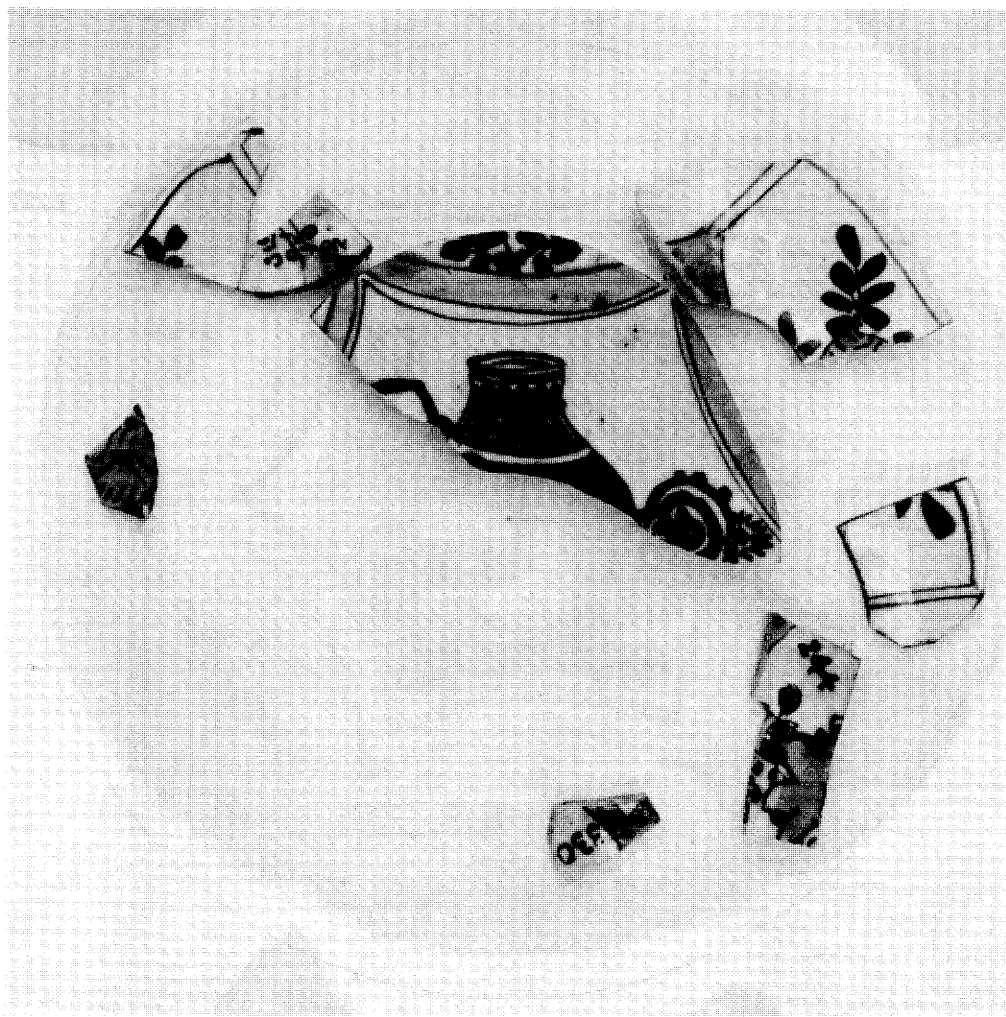


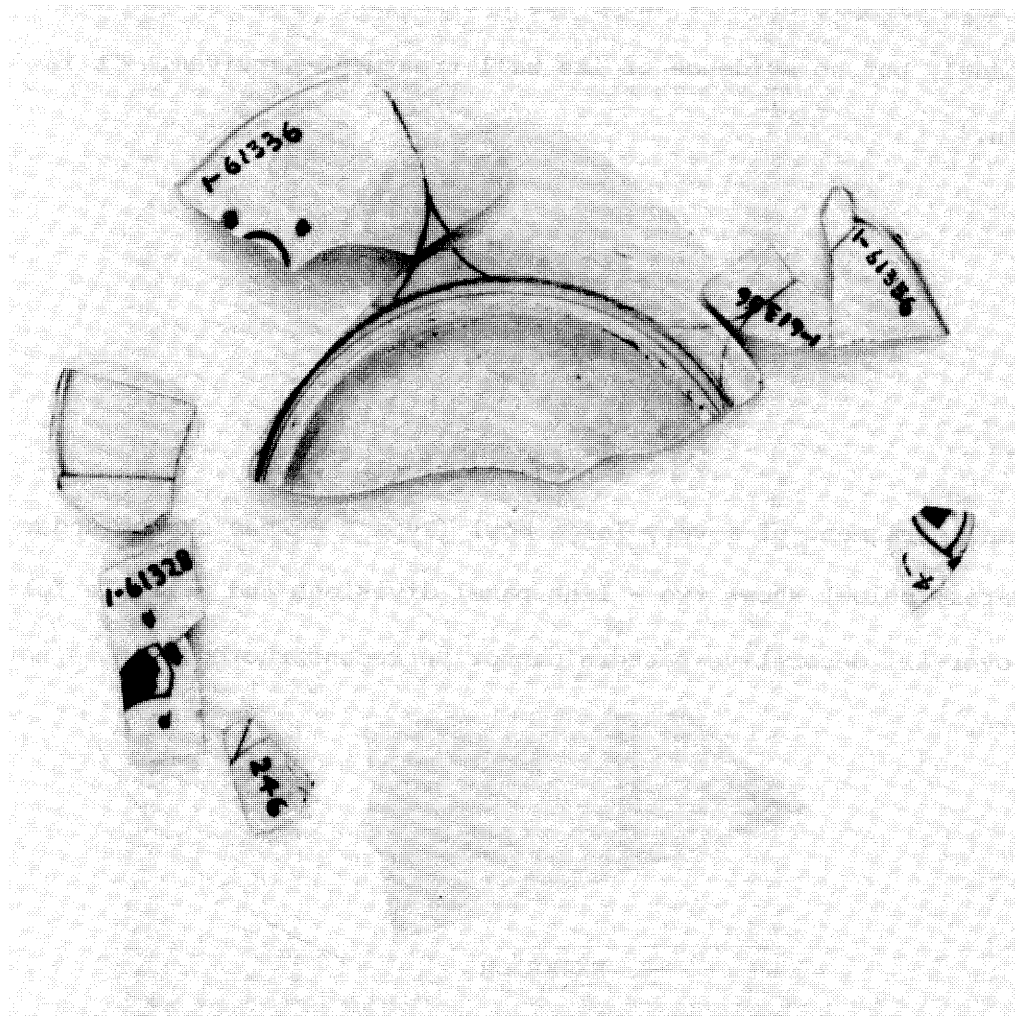


EXTERIOR



One Ching-te Chen bowl, with a vase in the central panel, is excellently potted and painted, and is not water worn.





EXTERIOR

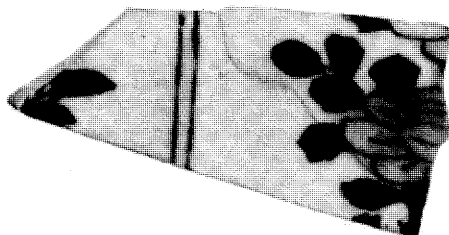
One other, also water worn, shows part of a pond scene but no border pattern survives.



The last example of this shape has a circular border around the central panel, but no evidence of its wall treatment survives. It is water worn.

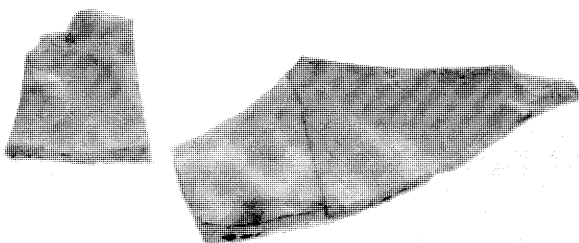


A small fragment of a very large bowl (Type I -- see sketch under Swatow Wares, below) shows two - line panel divisions and a little foliage, but its over-all decorative pattern cannot be reconstructed. It is not water worn.

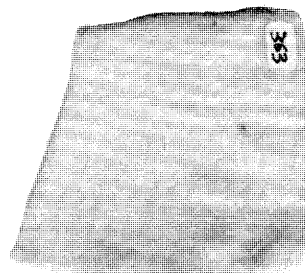


EXTERIOR

Four waterworn sherds show moulded floral designs on their interiors. One is from a Type VII bowl, one from a Type IV low bowl, another probably from a Type IV bowl, and the last is unidentifiable.



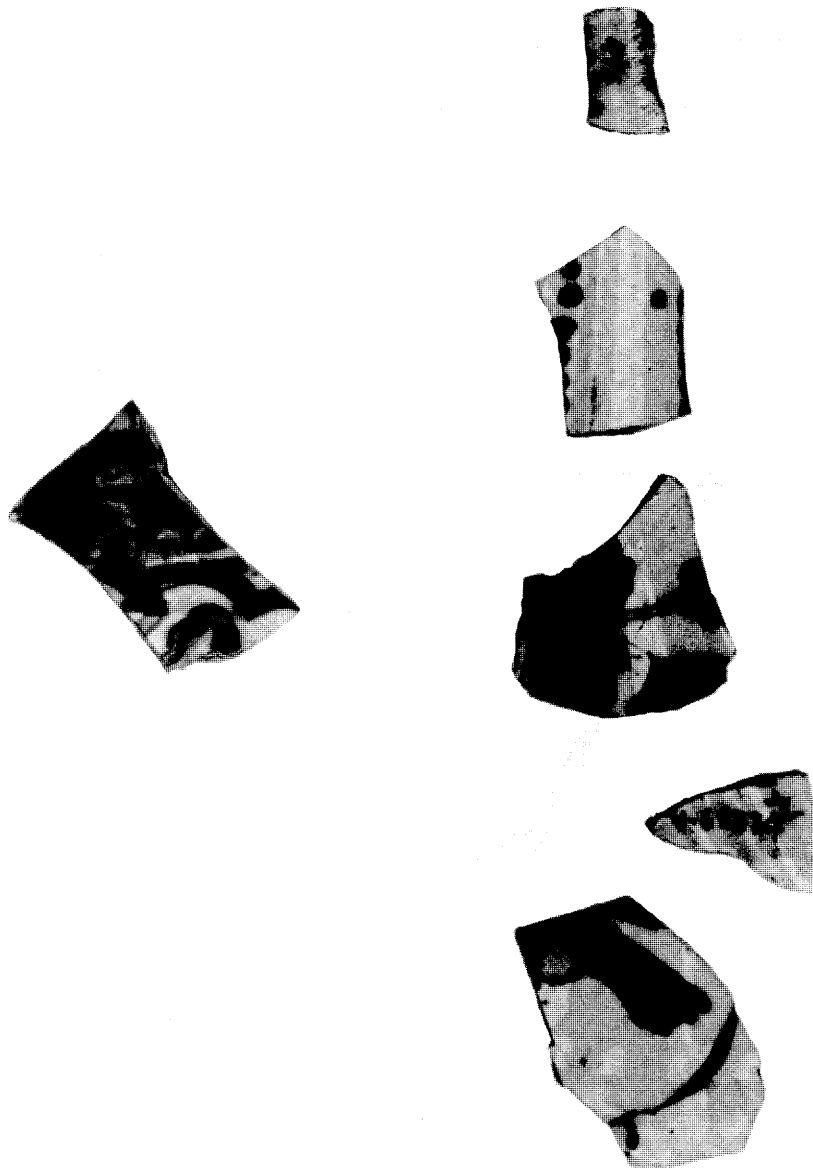
INTERIOR



INTERIOR

A waterworn sherd from a Type IV bowl has a tree-trunk and pine-branches decoration, but its over-all pattern is unknown.

Three fluted vase sherds, none water worn, include foliage, a bird, and "cash diaper" patterns in their boldly-painted designs.

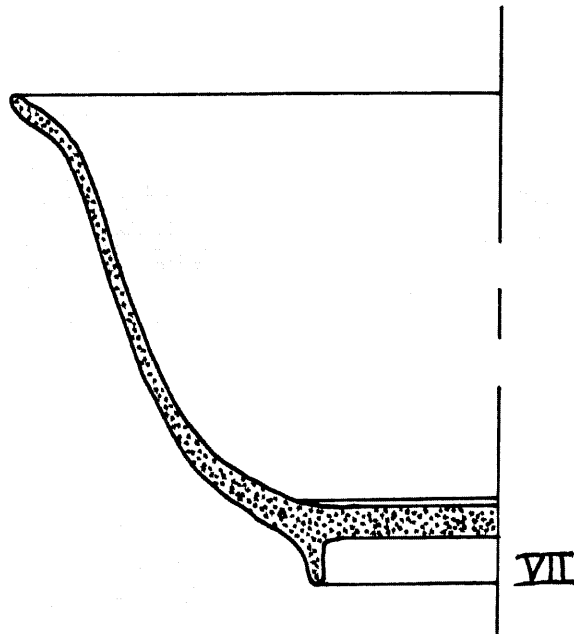


Eighteen other sherds are from Kraak-type vessels whose shapes can not be discerned. Half are water worn. No unusual decorative elements appear on them.

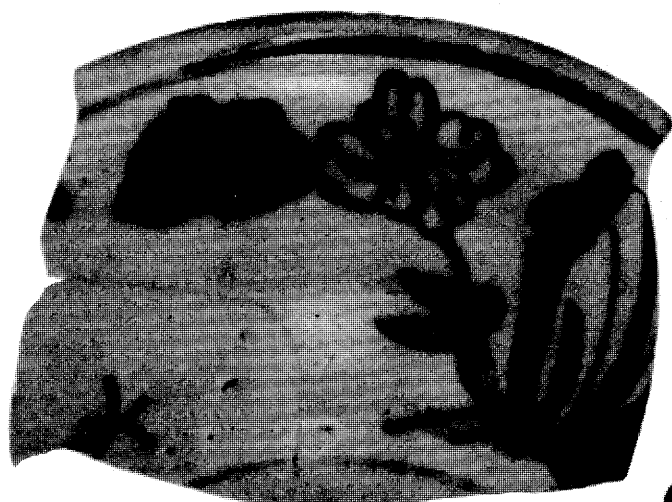
Northern Kwang-tung/Fukien Wares

Two large families of provincial wares, other than Kraak wares, occur among the Drakes Bay sherds. One of these families has a slightly greyish-white body, is medium-walled, and is, for the most part, perfunctorily painted with easy-to-draw motifs (floral sprays, mythical beasts, and aerial dragons). These wares are easily identified as the products of provincial Fukien and Northern Kwang-tung kilns by their gritty feet.

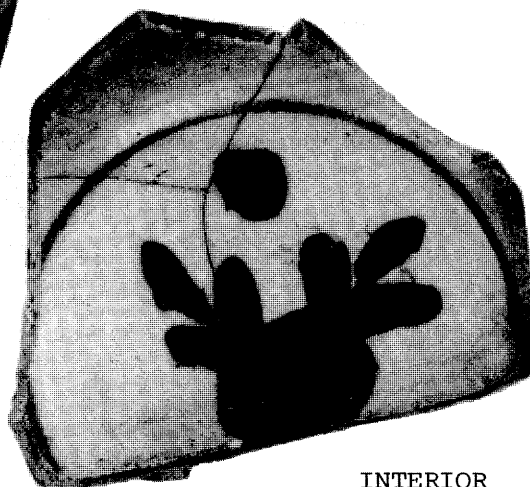
By far the largest group of specimens in the collections consists of small bowls (Type VII): 66 are known.



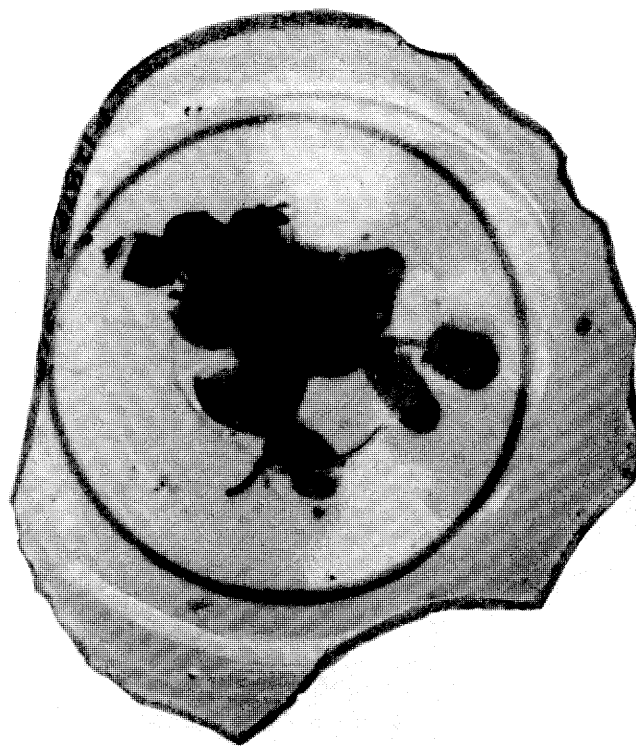
Thirty-eight have two sprays of foliage on their exteriors and a small foliage design on their base interiors.



INTERIOR



INTERIOR

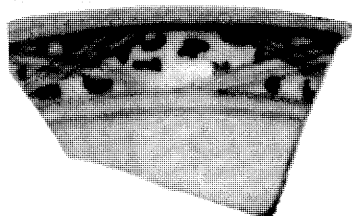


INTERIOR

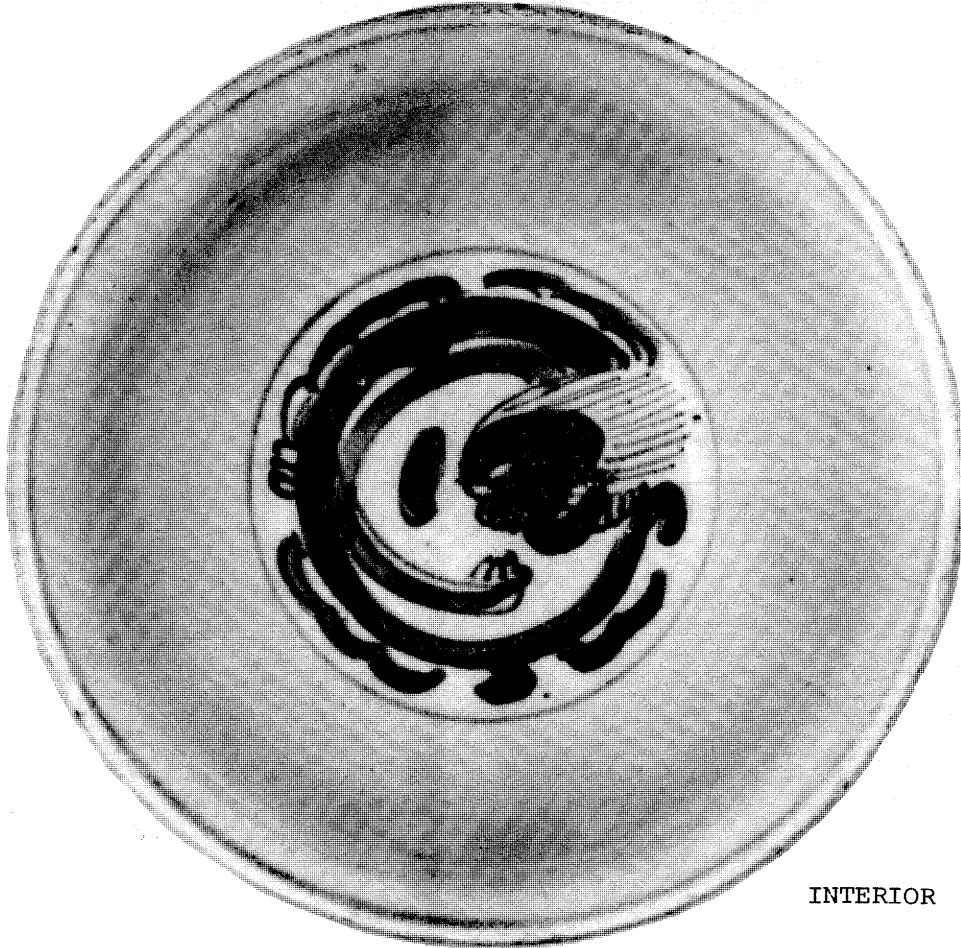
The 13 non-waterworn ones are better painted and in a darker blue than the 25 waterworn examples.

Three of the four simple dragon-design bowls are water worn; both flying-beast-design bowls are water worn; both diaper-inside-rim bowls are water worn, and the single pagoda-between-mountains bowl is water worn.

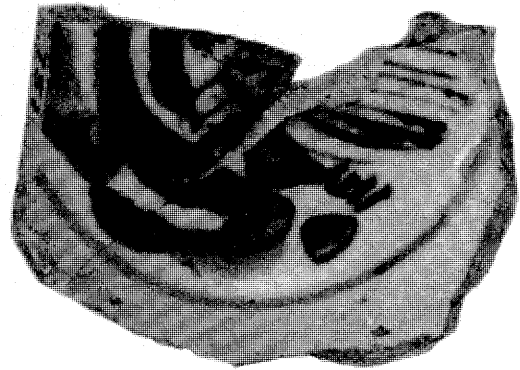
All of these bowls are casually potted and painted.



INTERIOR



INTERIOR

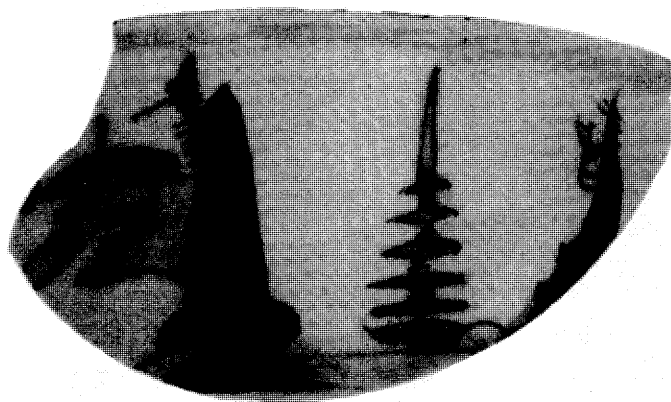


INTERIOR



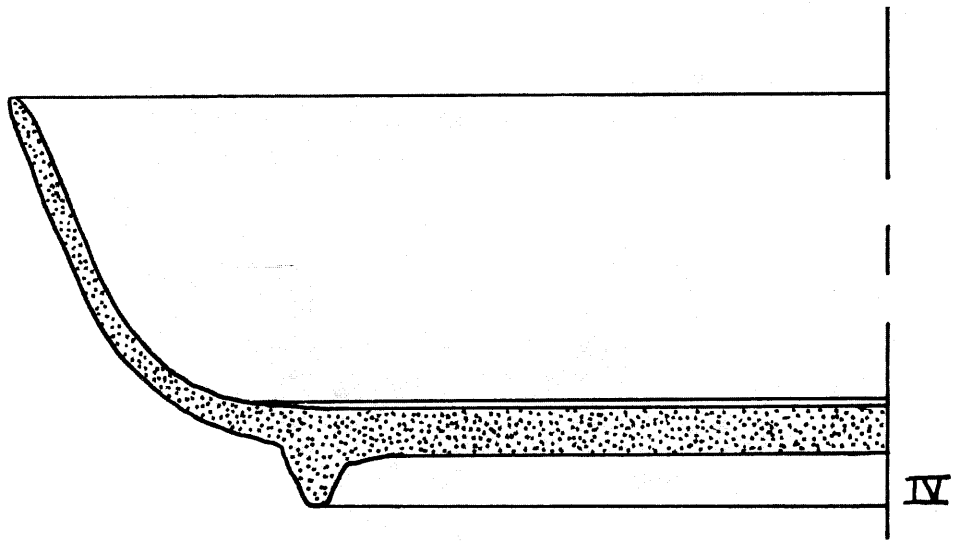


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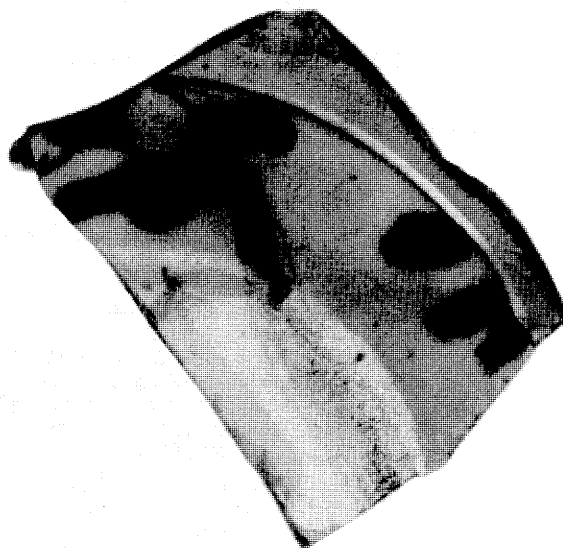
Sixteen of the 19 Type VII bowls whose design cannot be identified are water worn.

Heavy, low bowls (Type IV) are represented by two decorative patterns.

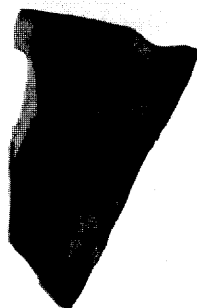


Five of six bowls with goldfish ponds on the interior and cloud collars on the lower interior cavetto are water worn, while six of seven with landscapes are water worn.





A fragment of a bowl or plate interior, also water worn, provides the only example of white-on-blue flowers and foliage.



Of unknown shape but provincial Fukien origin are two bowl or plate interior sherds with phoenix design, three with landscapes, and one whose design is not known.



All of these, except one of the phoenix-design sherds, are water worn.

The exterior of a waterworn bowl of unknown shape, perhaps Type VII, may show young bamboos.



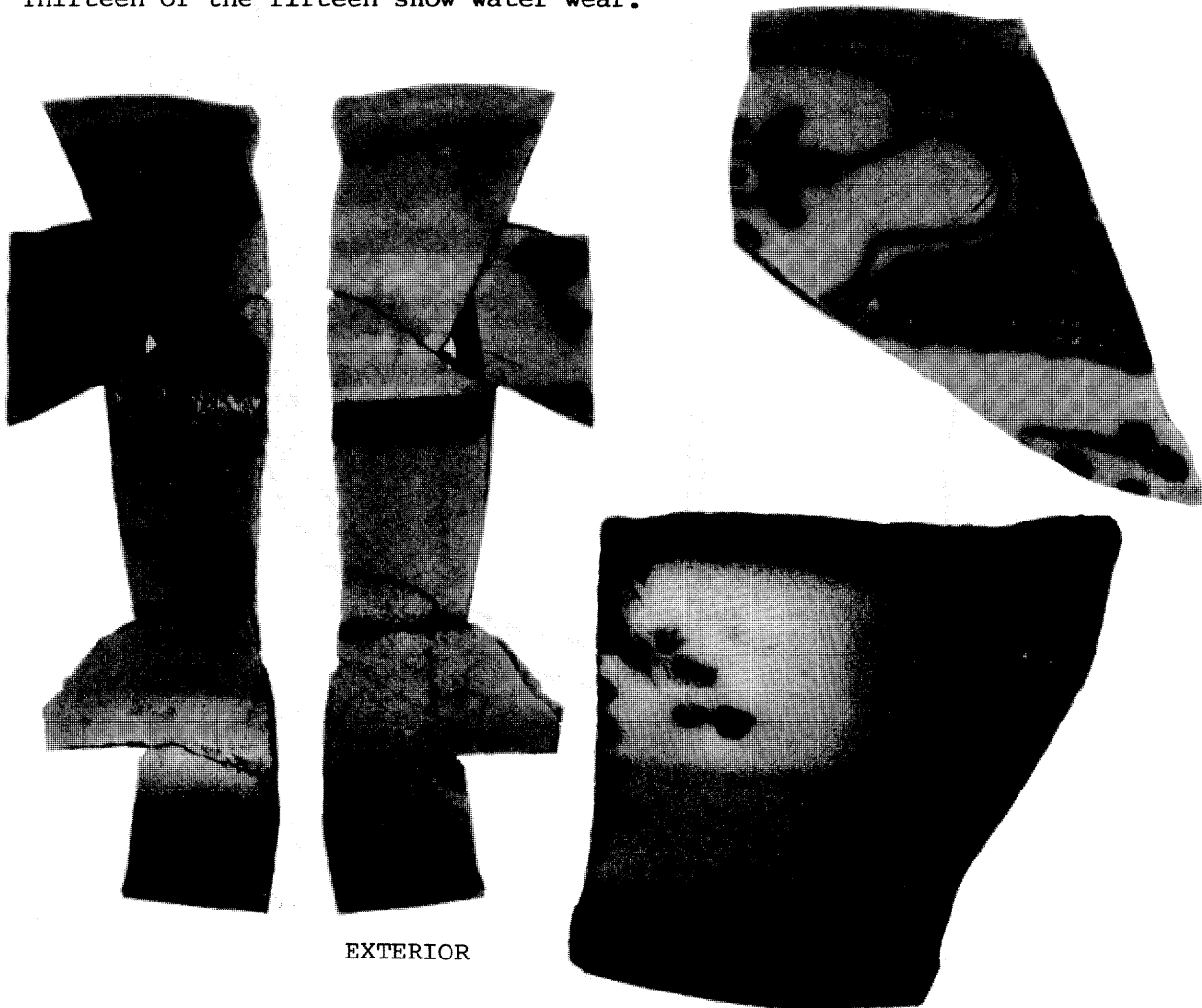
Swatow Wares

The other family of wares, the so-called Swatow wares of southernmost Fukien Province, exhibit a greyish-white or grey body, always have a gritty footrim, and have a markedly distinctive glaze-splashed base freckled with grit.

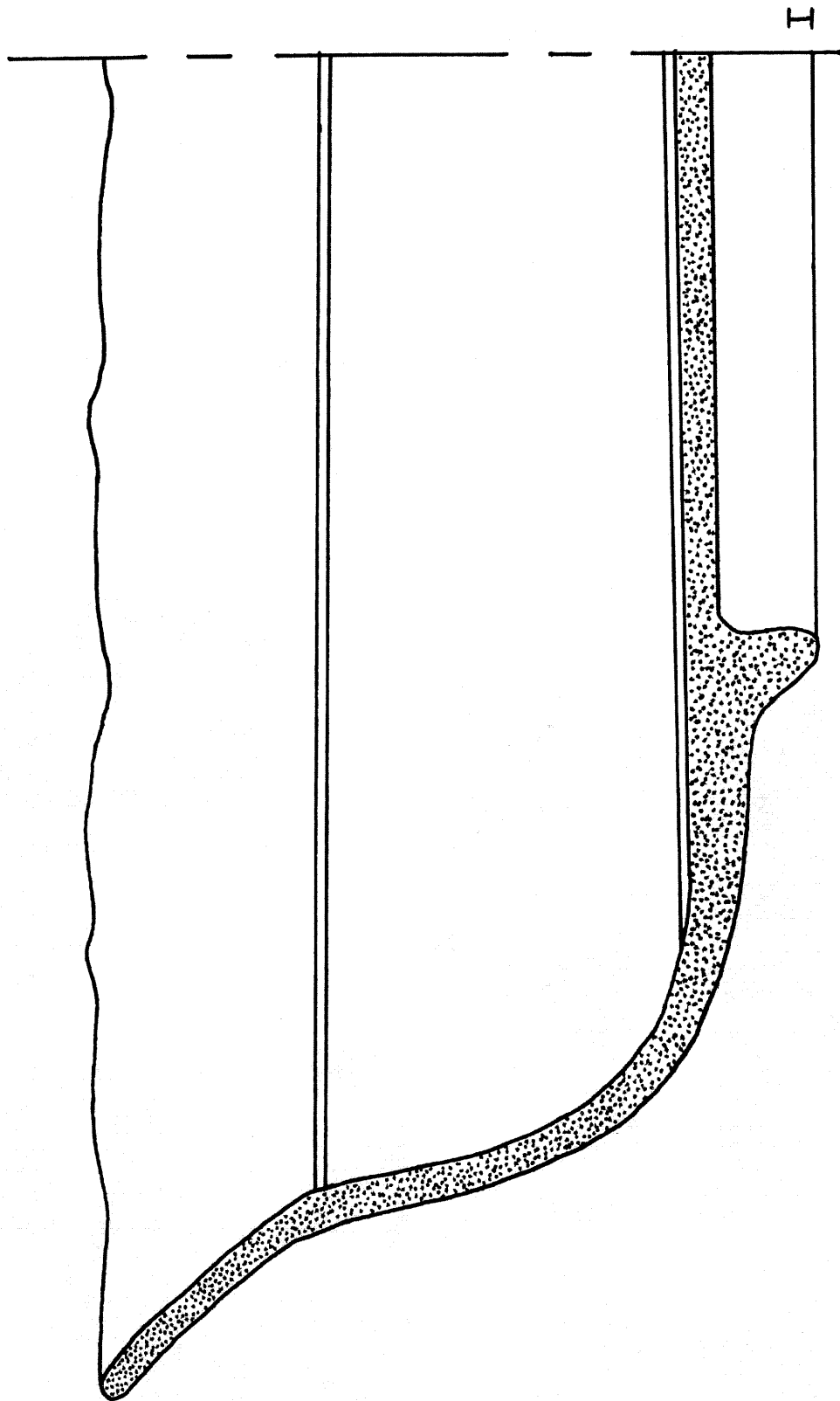
Fifteen massive Swatow bowls (Type I) have been found.

They are practically identical in shape and decoration: medallions with floral sprays separated by "cash diaper" designs on the rims, a little foliage on the cavettos, and deer in a landscape on the interior bases.

The glazes vary, however, three having a clear glaze, eight a smoky-green glaze, and four a greyish glaze -- suggesting origins at three kilns. Thirteen of the fifteen show water wear.



EXTERIOR





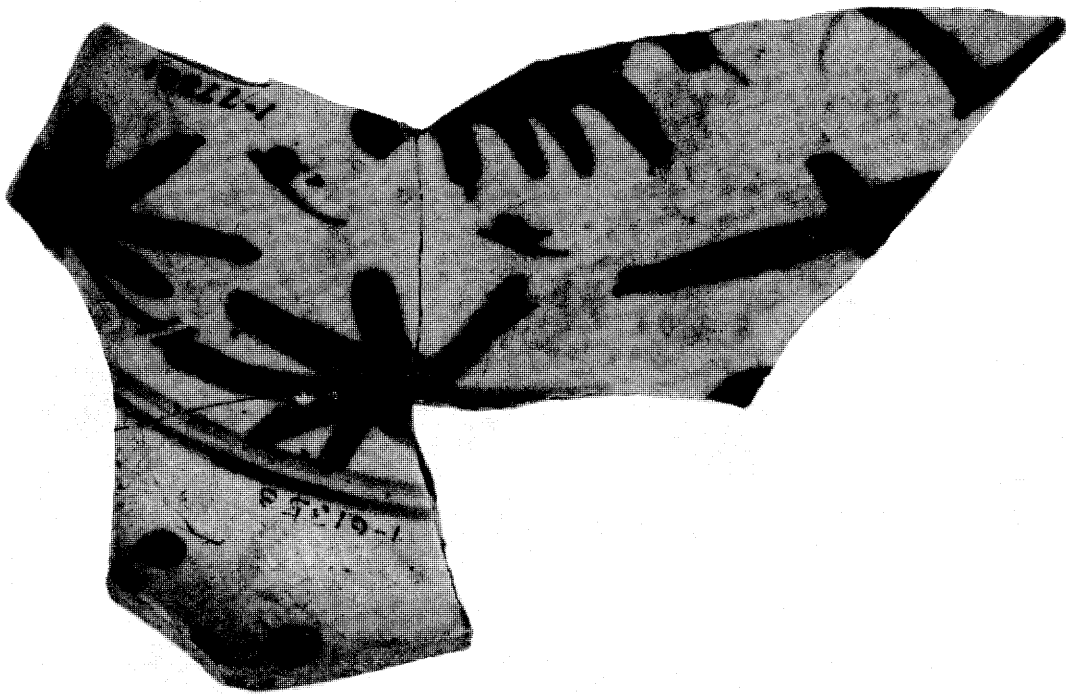
ORIGINAL SIZE: 16-INCH (40cm) DIAMETER. COPYRIGHT PRINCESSEHOF MUSEUM



One waterworn Type IV bowl has a smoky-green glaze and foliage decoration.

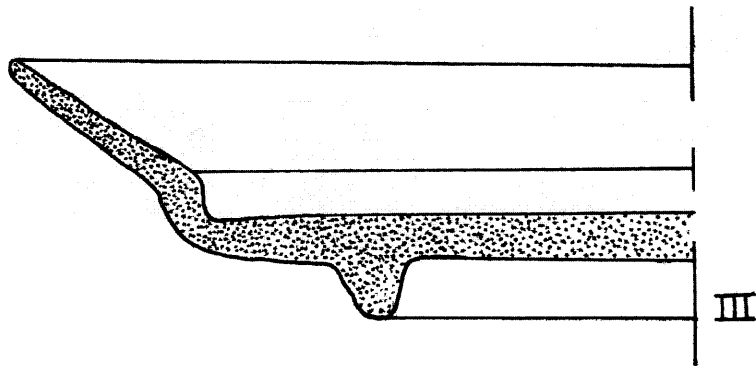


ORIGINAL SIZE: 10½-INCH (27cm) DIAMETER

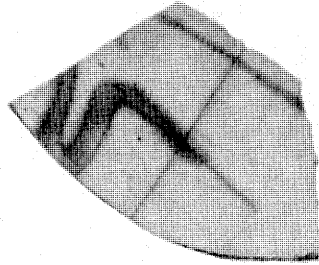


Four Type III low dishes with phoenixes in crudelandsapes on the interior bases and ribbons on the flat rim strips have been identified, all water worn.

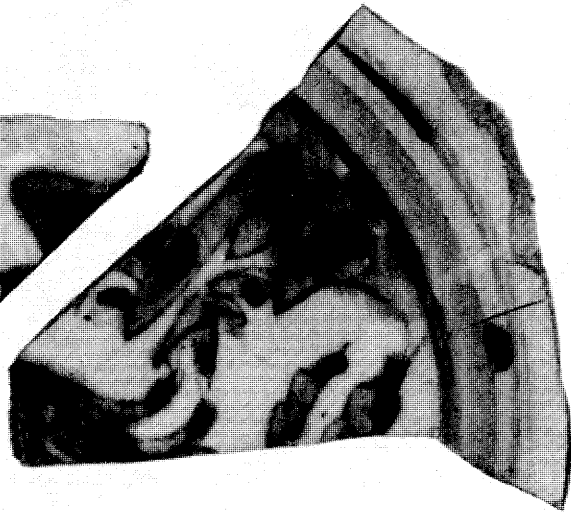
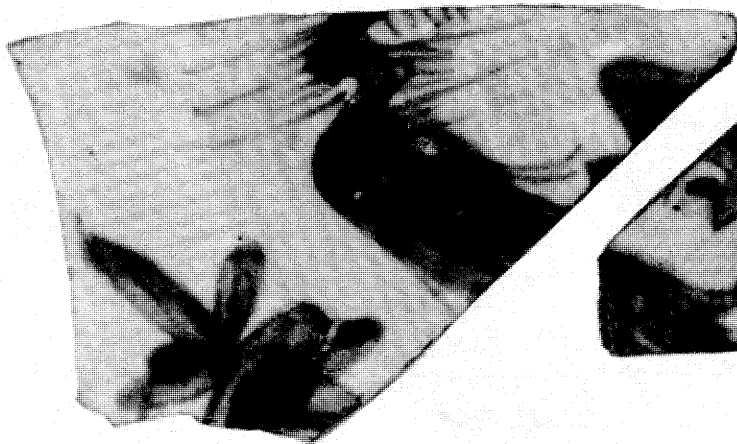
Two have clear glazes, one has a whitish-cream glaze (the only one of that type), and one is too damaged for identification.

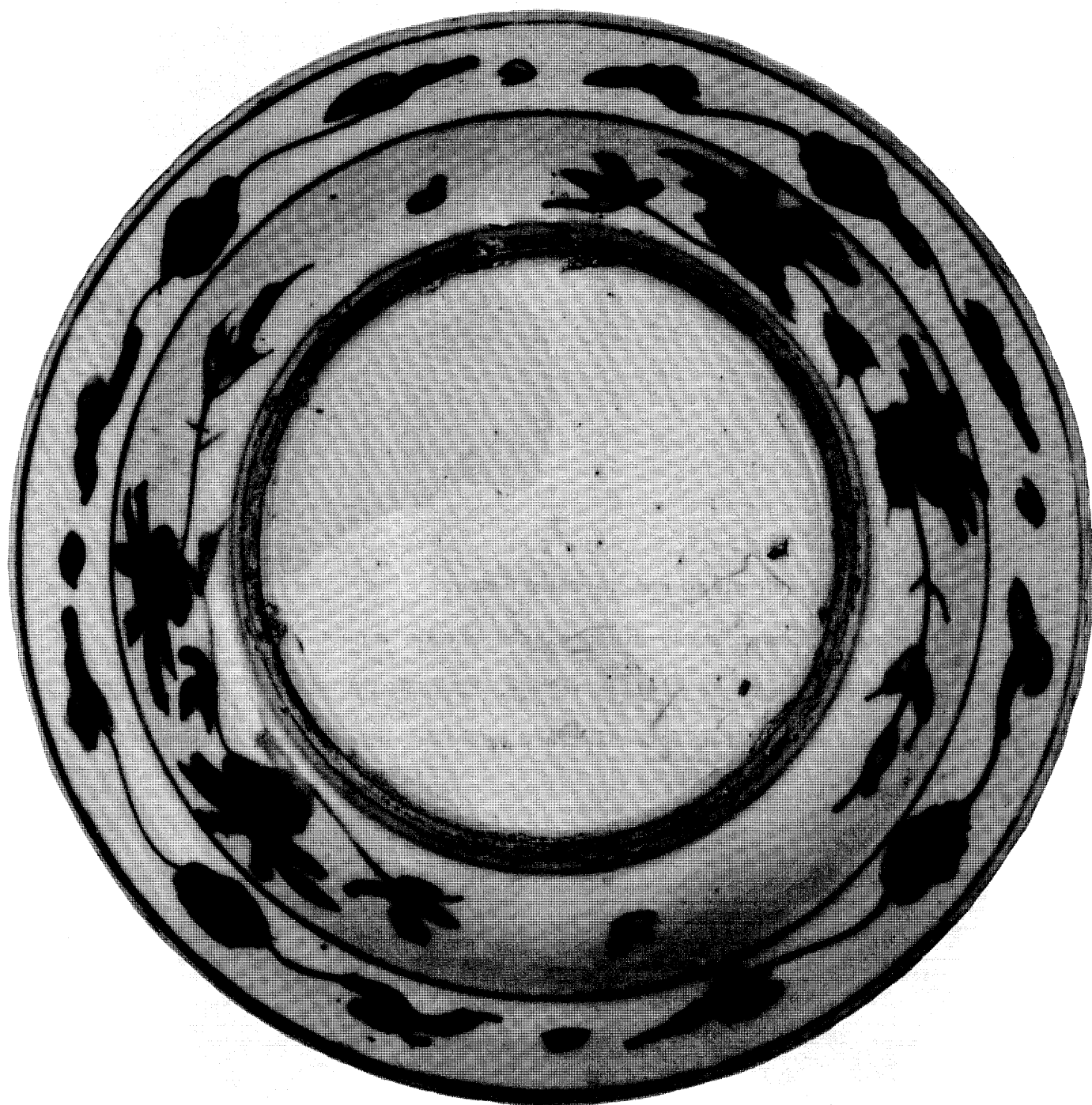






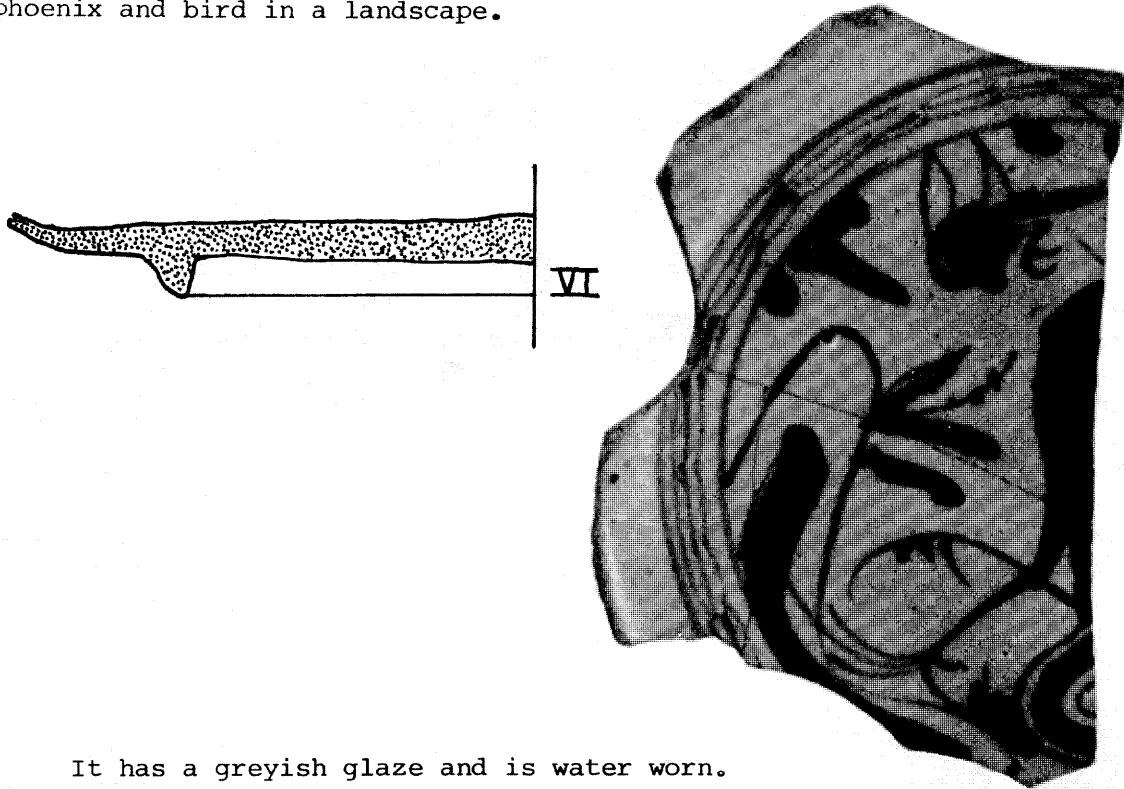
EXTERIOR





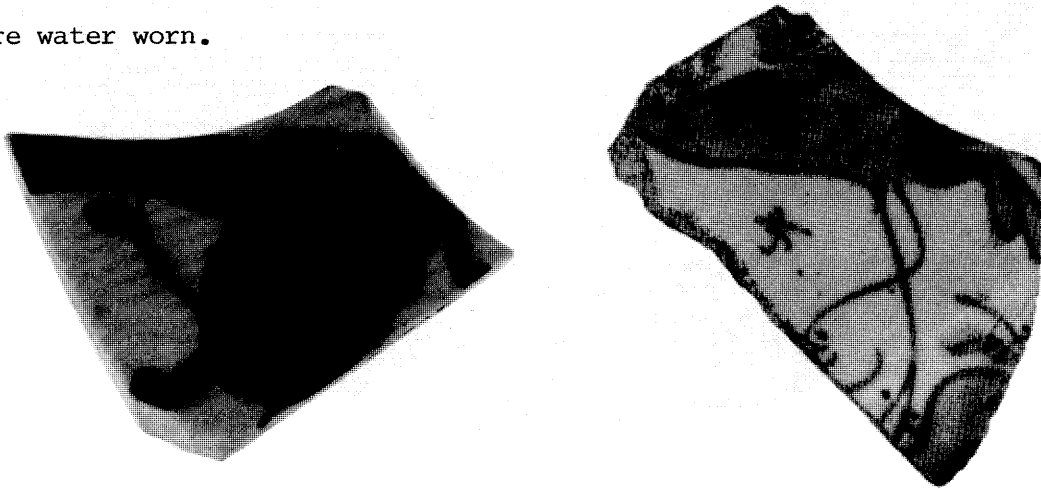
EXTERIOR

A unique and very crude Swatow dish is the Type VI sauce dish with phoenix and bird in a landscape.



It has a greyish glaze and is water worn.

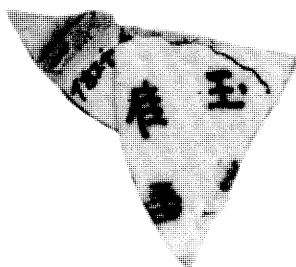
The shape of seven smoky-green-glazed sherds cannot be established. They carry motifs that are similar to the other Swatow wares: cash diaper and medallion rim, foliage, phoenix, and mythical beast. Six of the seven are water worn.



An unworn clear-glazed sherd with a phoenix-in-a-floral-setting motif completes the group.

Ching-te Chen Wares

Six sherds do not fall into any broad classification of porcelain groupings. These six sherds are from extremely high-quality, thin-walled, extremely carefully-potted objects with stark-white, fine-levigated clay bodies easily identified as having come from the Ching-te Chen kilns. Of the six, only two are water worn. Both are Type VII bowls. One of these bears a four-character inscription, "Beautiful Vessel of the Jade Hall," a private Ching-te Chen studio.



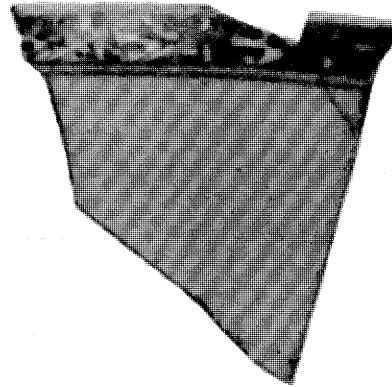
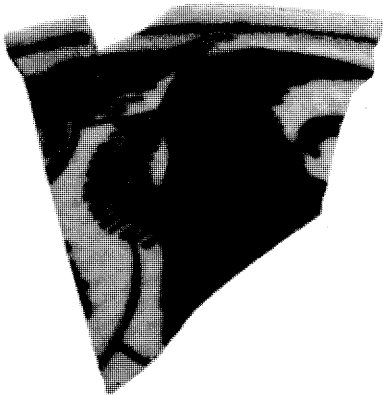
It is the only inscribed porcelain discovered at Drakes Bay. The other waterworn fragment has a decoration that is, unfortunately, undecipherable, but appears to include a contiguous stylized petal design.



BASE EXTERIOR

BASE INTERIOR

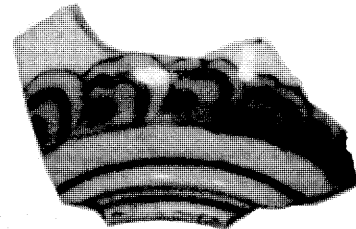
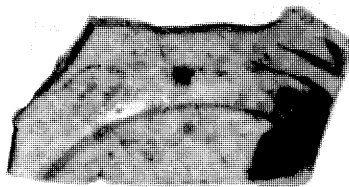
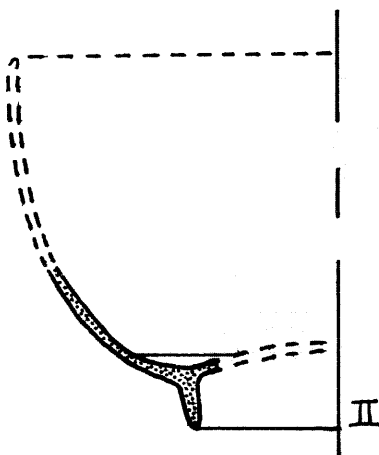
Of the 4 without water wear, one Type VII bowl bears a significant phoenix motif, deftly painted in a rich violet-blue, a color associated with the Chia-ch'ing era (1522-1566).



INTERIOR

The unique rendering of the swiftly flying phoenix has bristling feathers projecting at right angles from the neck, a style having its seminal origins in Chia-ch'ing (1522-1566) and reaching its zenith in early Wan-li (1573-1619).

A tiny cup (Type II) is unique in this collection.



INTERIOR

It is extremely thinly potted, but only a pattern of overlapping petals on the exterior above the base and a suggestion of foliage on the interior survives.

A section of a Type V plate with a white cavetto shows a bird and egg, while the last sherd is from an unknown shape and shows no decoration.



III

CORRELATION OF SHIPWRECK AND PORCELAIN EVIDENCE

Analysis of the Drakes Bay blue-on-white porcelains on the basis of shape, potting quality, clay-body content, glaze, painting style, paint color, and kiln sites has made possible tight classification of 235 sherds and sherd groups. Differentiation of these sherds into waterworn and non-waterworn groups provides a cross check on the art-historical conclusions.

The analysis shows that the Kraak wares are very sensitive indicators of change over time.

McElney's Group II, the white cavetto plates, demonstrates this very clearly: the Ching-te Chen wares which begin the series, and their immediate nearby Fukien Province derivatives, are of good quality in all respects and are not water worn; the casually-painted but fairly-well-potted wares from Fukien province near Ching-te Chen and the coarse, poorly-painted, and heavier-potted wares from more distant Fukien kilns are water worn. The two latter groups are later derivatives of the original Ching-te Chen products -- and the water wear confirms the distinction.

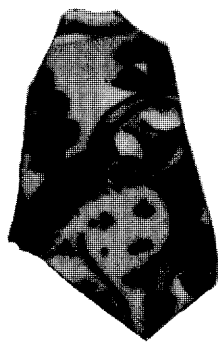
Although McElney's Group III, the plates with simple rim panels, is represented by only three specimens, the results match those of Group II. Two are good early Ching-te Chen plates; the third is a later heavy, water-worn Fukien plate.

In Group IV, the beaded-pendant plates are also lightly represented but consistent: two early ones of good quality from the Ching-te Chen region and one later very heavy waterworn specimen.

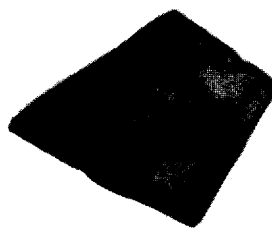
The later-style plates with wedge-separated panels are of good quality

and from Ching-te Chen or nearby Fukien kilns. The silvery-blue colors and the water wear on seven of the eight sherds confirms the dating.

The deer bowls split into two groups by quality and water wear: eleven early and five late.



NON-WATERWORN



WATERWORN

The two bowls with continuous decorated strips below the rims are poorly painted and water worn.

Five early good-quality bowls with flying horses in panels (separated by lines or beaded pendants) are not water worn; three later poor ones are worn -- again consistent with the McElney pattern for the plates.

The delicate low bowls furnish dramatic confirmation of the pattern. One early one of outstanding quality from Ching-te Chen is not water worn. Five of the six poorer ones are worn.

The three vases, of good quality, are not worn.

The 87 Fukien provincial wares with simple designs and medium-to-heavy potting in greyish-white clays are predominantly water worn. The non-water-worn exceptions are 13 better quality and apparently earlier spray-of-foliage bowls out of the 38 known, 3 bowls of unknown decorative design out of 19, and 4 other sherds of various shapes and designs out of 30. Most or all of the last four non-waterworn sherds apparently belong with the waterworn groups.

The Swatow wares, which exhibit water wear on 25 of 29 sherds, can all be ascribed to the very last part of the sixteenth century, the period of very rapid expansion of coastal Chinese provincial kilns to meet the new Manila Galleon Trade demands.¹⁹

Each of the six extremely high-quality Ching-te Chen sherds is unique in this collection. Although four of the six are not water worn, the sherds cannot be treated in categories but must be analyzed individually.

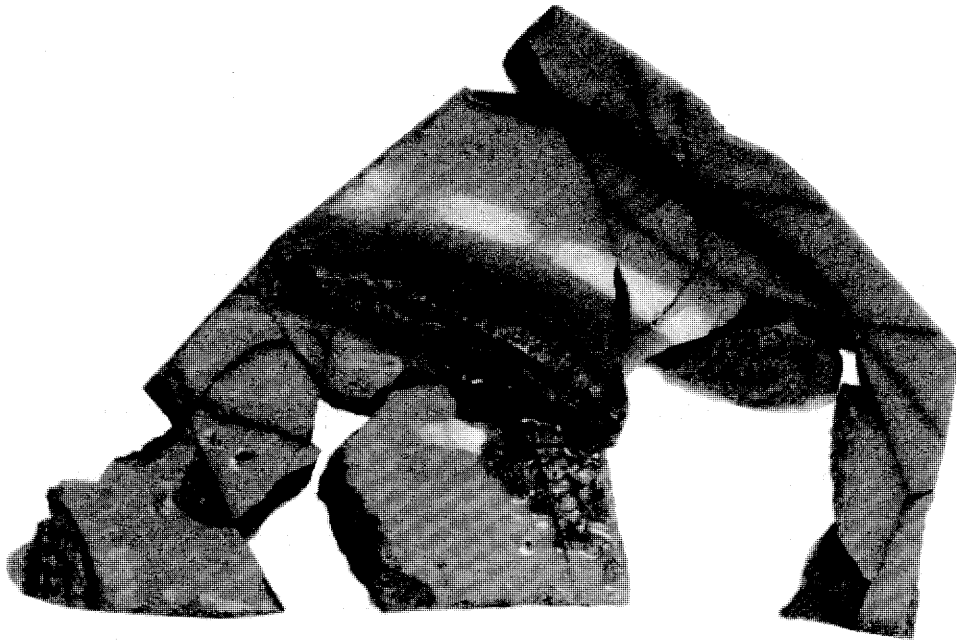
19. This brings to 10 the number of non-waterworn sherds which are attributed to the late group: 4 Swatows out of 29; 4 Fukien provincials out of 30; one Kraak plate with wedge-panel separators out of 8; and one Kraak low bowl out of 6. This is a conservative analysis: a few of these Fukien and Kraak sherds may belong in the early group, but corroborating sherds would be needed to place them in that category; the Swatows are clearly all late.

IV

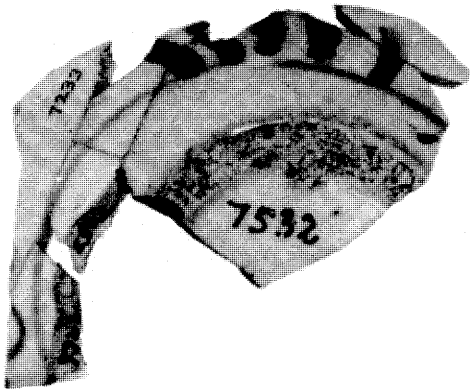
EVIDENCE OF GEOGRAPHICAL DISTRIBUTION

The porcelains have been excavated from twelve Indian villages, all located along the shores of Drakes Bay, Drakes Estero, and Limantour Estero. The finds are concentrated in a four-mile area that also encompasses the Drake camp site,²⁰ the San Agustin wreck site, and the Cermeño camp site.²¹ Beyond that area, the number of sherds per site drops off very sharply -- as would be expected. Although the Coast Miwok Indians modified sherds to make scrapers, pendants, and beads,²² the porcelains evidently had little trade value to the Indians, and only two sherds have been found outside the Drakes Bay region, both at Olompali, a village near San Pablo Bay at the end of a trade route from Drakes Bay.²³

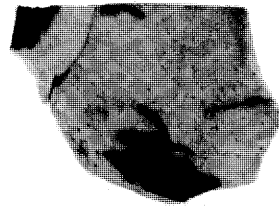
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20. Raymond Aker, Report of Findings Relating to Identification of Sir Francis Drake's Encampment at Point Reyes National Seashore.
21. Aker, Cermeño Expedition.
22. Von der Porten, Porcelains and Terra Cottas, pp. 28-31, and Von der Porten, "Sixteenth Century Chinese Ceramics," pp. 15 - 16, 19.
23. Edward P. Von der Porten, Two Oriental Porcelain Sherds from Olompali, Marin County, California. Only one of them is firmly dated to the sixteenth century, and it is water worn. Neither is included in the statistics of this analysis.



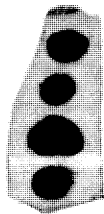
SHATTERED BY PERCUSSION



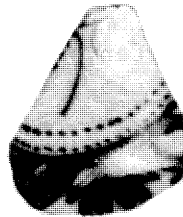
SHATTERED BY PERCUSSION



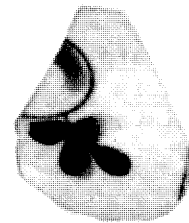
EDGES CHIPPED AND GROUND: PENDANT?



CHIPPED AND GROUND
PENDANT

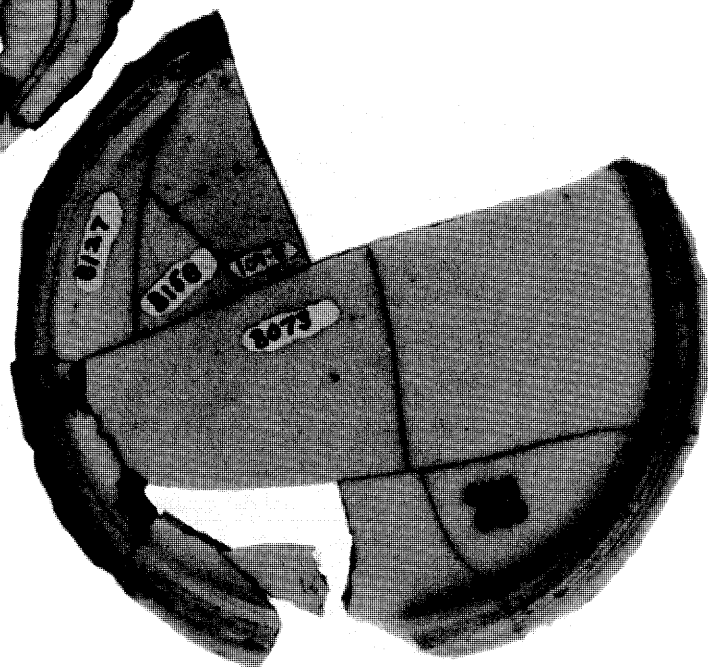


CHIPPED AND GROUND
EXTERIOR PENDANT INTERIOR

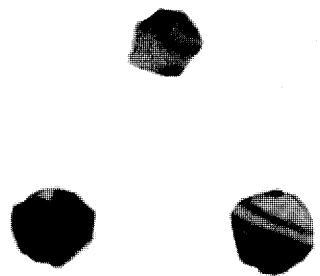




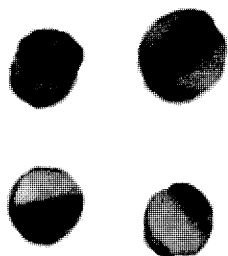
SIDES CHIPPED OFF ALL AROUND.
USE UNKNOWN INTERIOR



EXTERIOR



CHIPPED: BEAD BLANKS



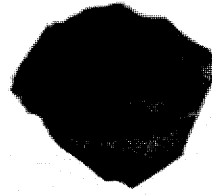
CHIPPED AND GROUND
(ONE PARTLY DRILLED):
BEAD BLANKS



CHIPPED. BEAD BLANK?
EXTERIOR. INTERIOR



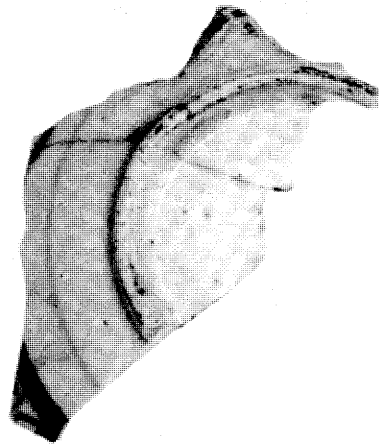
EDGES CHIPPED: SCRAPER



CHIPPED: SCRAPER OR PENDANT?



FOOT RING CHIPPED ALL AROUND: SCRAPER



CHIPPED: BEAKED SCRAPER

CONCLUSIONS

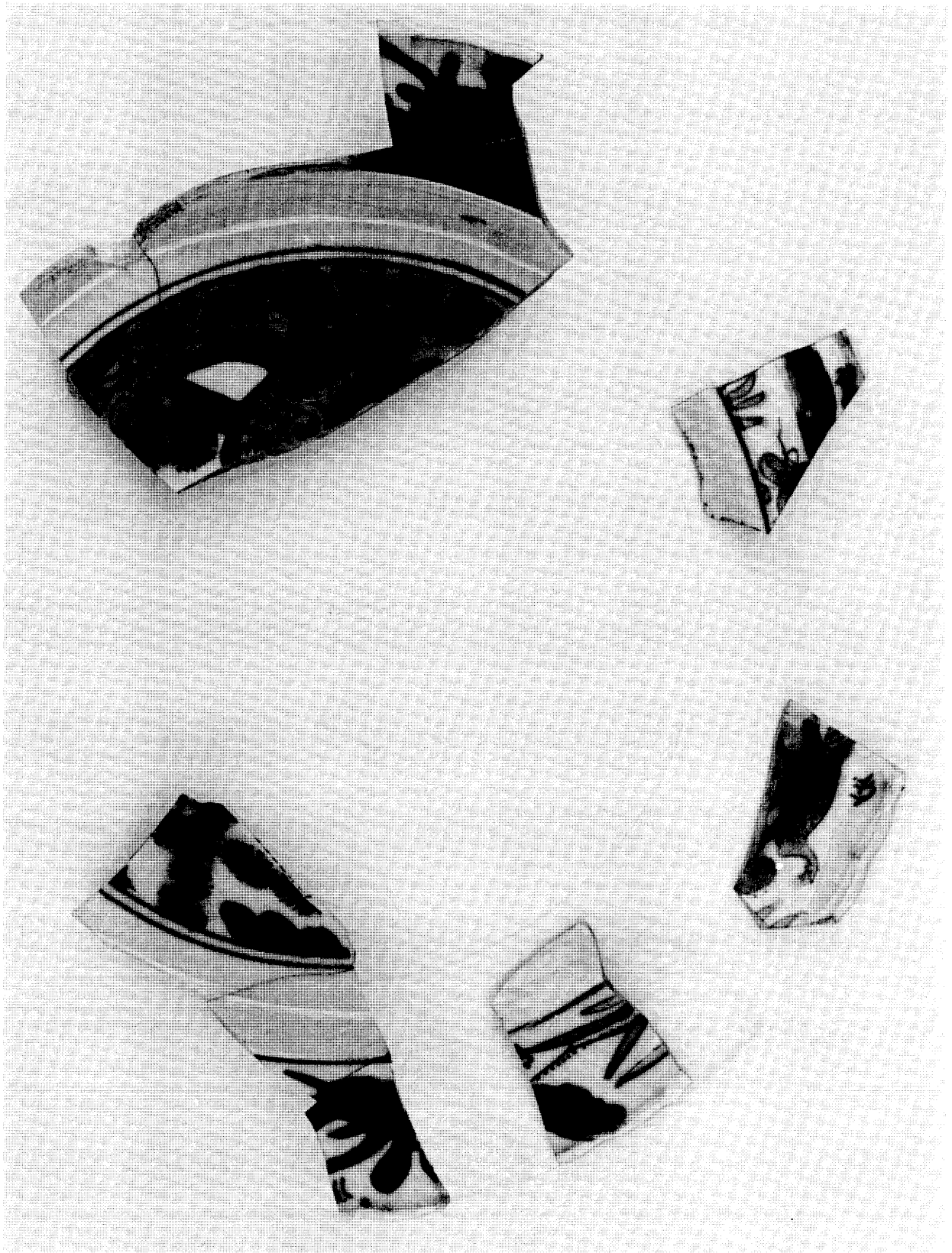
The waterworn/non-waterworn groups of the blue-on-white porcelains from Drakes Bay consistently match two stylistic/design/quality/kiln-origin groupings. These two groups derive from two sources of deposition at different times during the late sixteenth century.

The second group, deposited in the last decade of the century, clearly came from the San Agustin, commanded by Sebastian Rodriguez Cermeño, which was wrecked at Drakes Bay in 1595. The 158 sherds ascribed to that wreck provide an approximate cross section of his porcelain cargo. In it, influence of the new south-China Swatow kilns is very evident, with 29 examples of the crude and massive dishes and bowls in the collection. These constitute 18% of the Cermeño group. The great bulk, however, came from Fukien provincial kilns, with 71 examples ascribed to the San Agustin. These form 44% of Cermeño's porcelains, and are composed mainly of small bowls and broad shallow bowls of medium to heavy potting. Cermeño's Kraak-type wares are diverse: plates, small low bowls, small tall bowls, and a few large low bowls, but quality is low, painting often casual, and color poor. These 56 sherds (35% of his total) are usually from Fukien kilns near Ching-te Chen rather than from the city itself. The two small bowls of very high quality show that some of the best Ching-te Chen ware was still reaching the Manila trade, but not much.

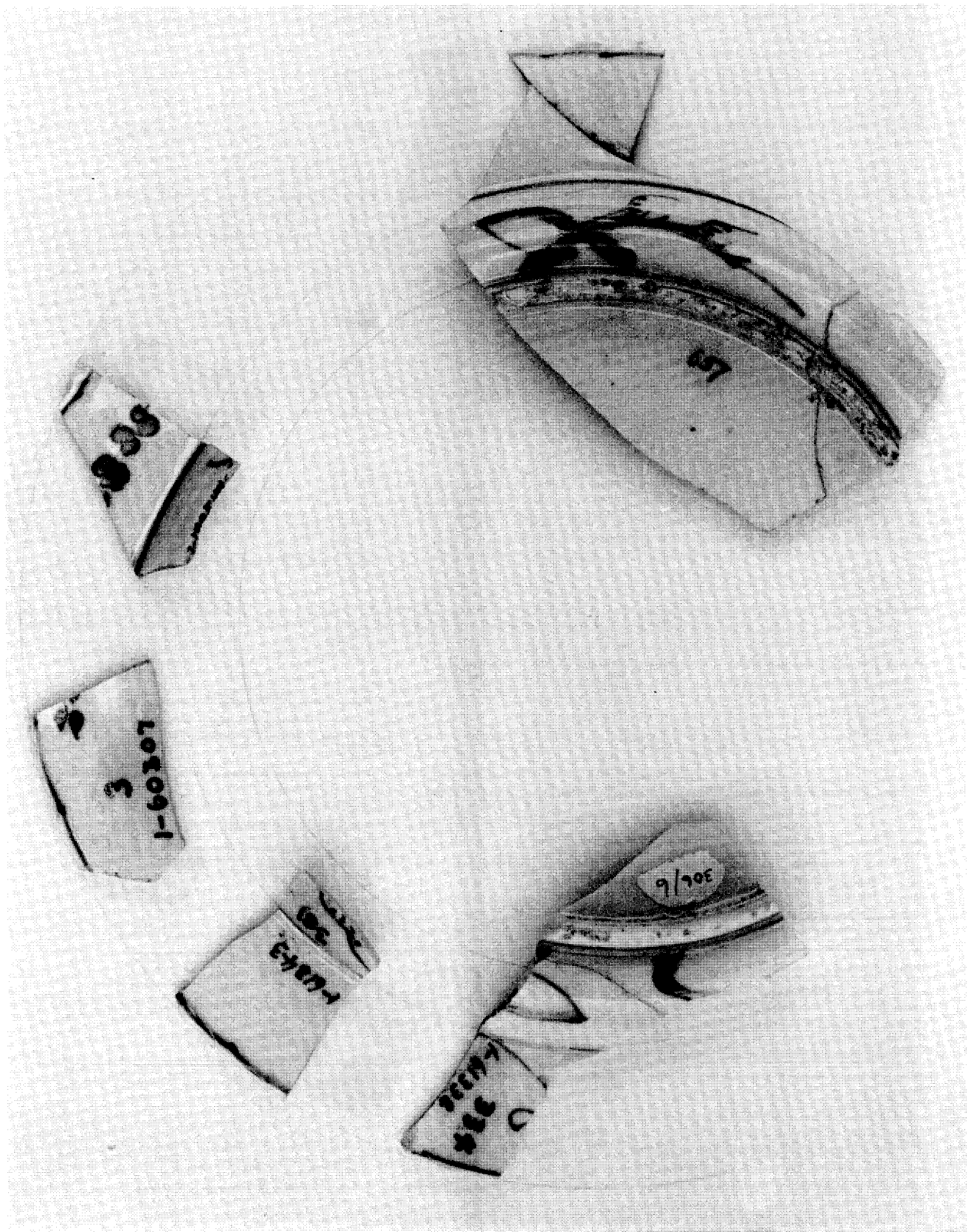
The rest of the collections -- 77 non-waterworn sherds -- dating from the earliest part of the reign of Wan-li, that is, the beginning of the fourth quarter of the sixteenth century, must fairly be attributed to Francis Drake's

Golden Hind visit of 1579. Drake's abandoned porcelains form a notably different group from Cermeño's. There are no Swatow wares. Provincial Fukien wares ascribed to Drake are limited to 13 small bowls with spray-of-foliage decoration and a few whose decoration is unknown. Kraak wares form the bulk of Drake's group: 57 sherds or 74%. They are mainly excellent-quality specimens from Ching-te Chen itself, with a few deriving from nearby kilns which were still copying the Ching-te Chen wares faithfully. They include plates of early Kraak designs, small tall bowls, a small low bowl, a very large bowl, and three vases. Enough sherds survive of the delicate small low bowl and one of the finest white-cavetto plates to show that they were intact at the time they were carried to the Indian village -- another confirmation that they were brought ashore by Drake's crewmen, not washed ashore after shipwreck. Four Ching-te Chen sherds in non-Kraak styles complete the Drake group, including the tiny cup and the Chia-Ch'ing-style phoenix bowl.

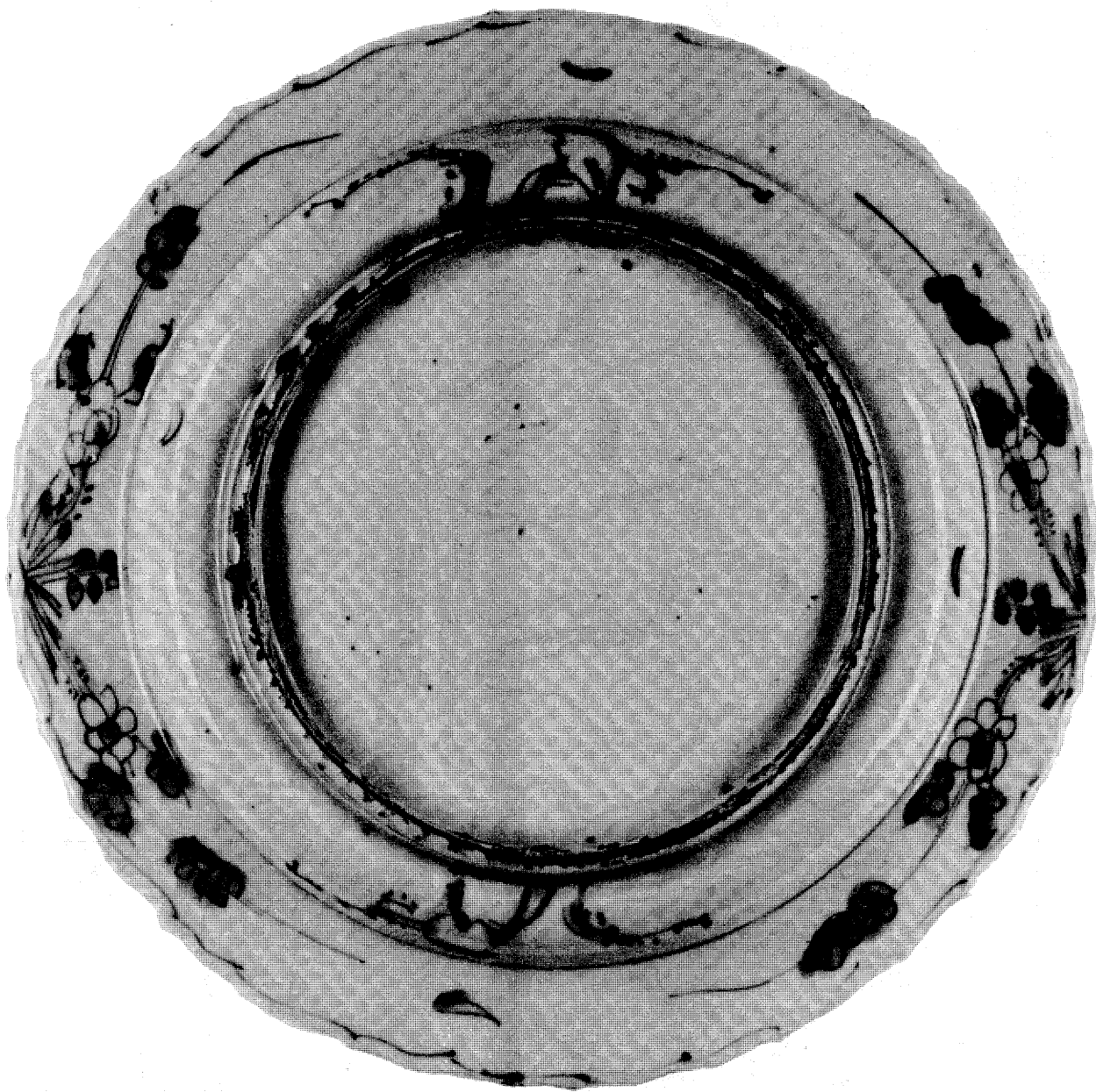
Forty-one years after the first Chinese blue-on-white porcelain sherds were found at Drakes Bay and the question of their source was posed, the answer can confidently be stated: thirty-three percent of the porcelains were abandoned by Francis Drake in 1579 and sixty-seven percent were lost in the wreck of Sebastian Rodriguez Cermeño's San Agustin in 1595.



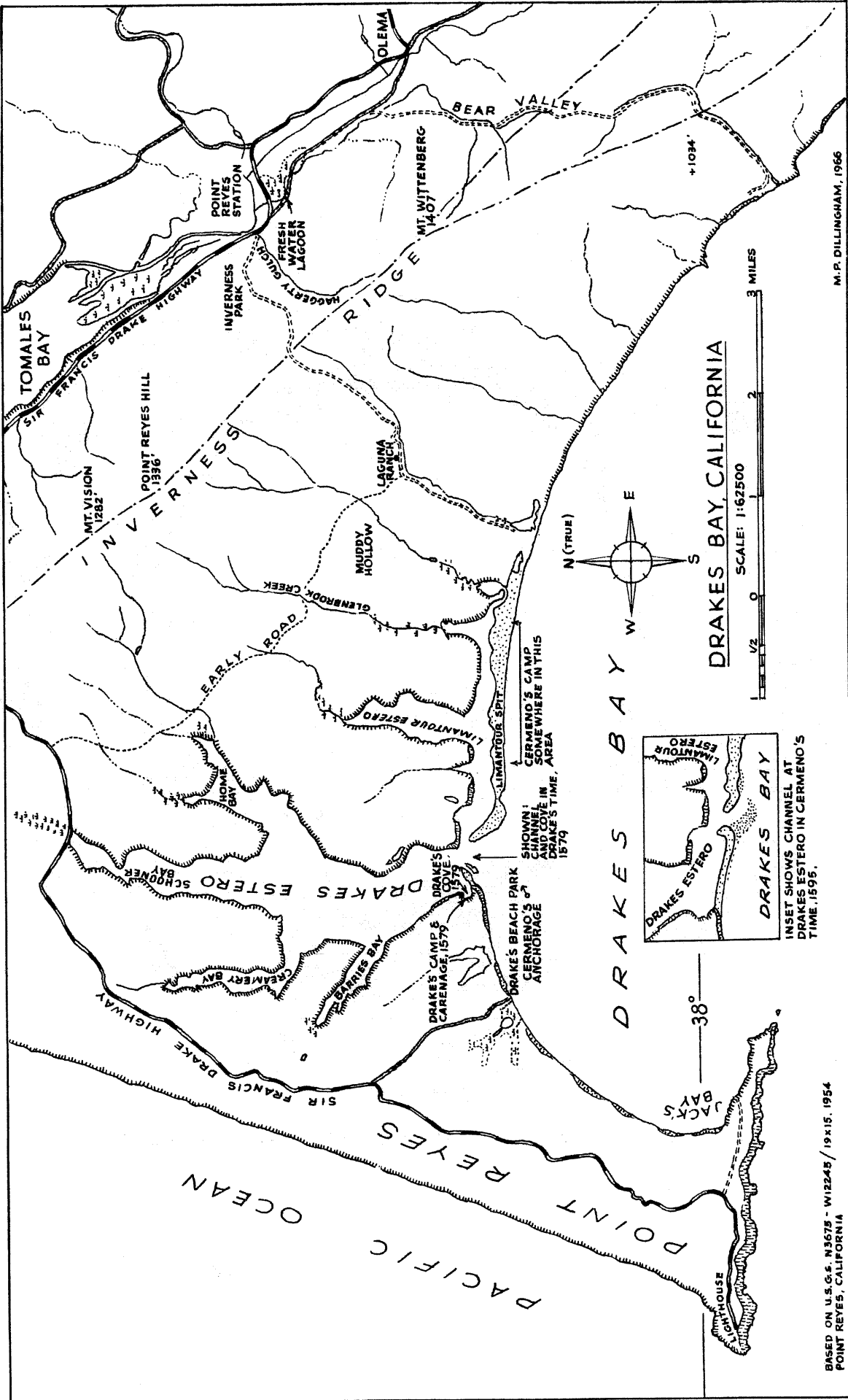
DRAKE PERIOD: NOT WATER WORN



DRAKE PERIOD: NOT WATER WORN. EXTERIOR

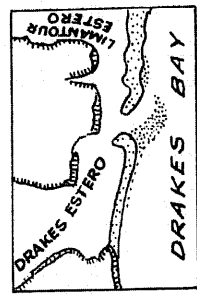


CERMEÑO PERIOD. EXTERIOR. ORIGINAL SIZE: 8-INCH (20cm) DIAMETER



BASED ON U.S.G.S. N3675 - W12245 / 19x15, 1954
 POINT REYES, CALIFORNIA

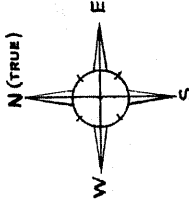
M.P. DILLINGHAM, 1966
Drake Navigators Guild



SHOWN IN
 CHANNEL IN
 DRAKE'S TIME, AREA
 CERMEÑO'S CAMP
 SOMEWHERE IN THIS
 LIMANTOUR SPIT

DRAKES BAY, CALIFORNIA

SCALE: 1:62500
 0 1 2 3 MILES



38°

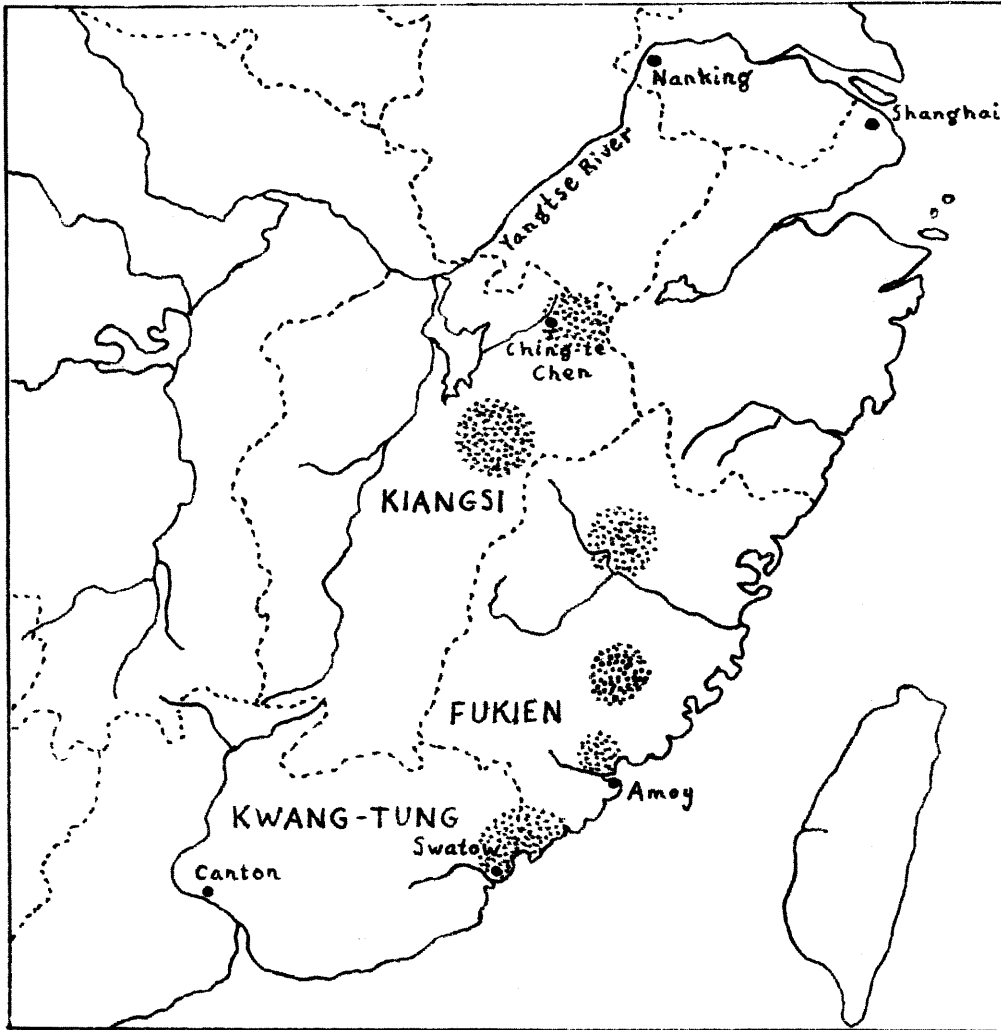
APPENDIX 2

PORCELAIN DISTRIBUTION

SITE	DRAKE SHERDS	CERMEÑO SHERDS	TOTAL SHERDS
298 W (DNG2)	25	47	72
216	20	43	63
298 E (DNG1)	9	30	39
232	11	13	24
Beaches & Unknown	1	9	10
394 (DNG4)	4	3	7
307	1	6	7
271	3	2	5
235	1	2	3
242	0	2	2
236	1	0	1
274	1	0	1
280	<u>0</u>	<u>1</u>	<u>1</u>
TOTALS	77	158	235

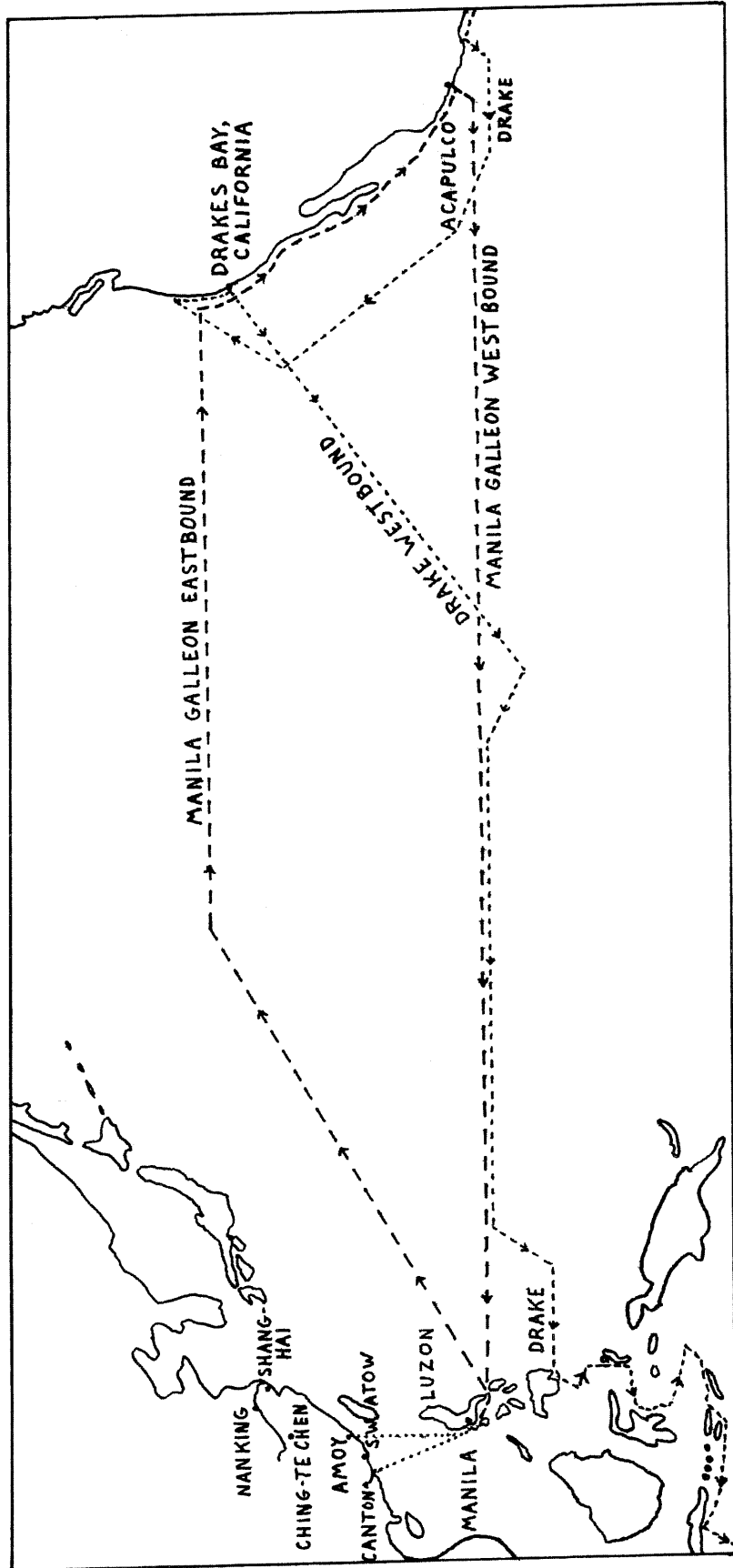
APPENDIX 3

CHINESE PORCELAIN SOURCES



APPENDIX 4

THE MANILA GALLEON ROUTE AND DRAKE'S RAID



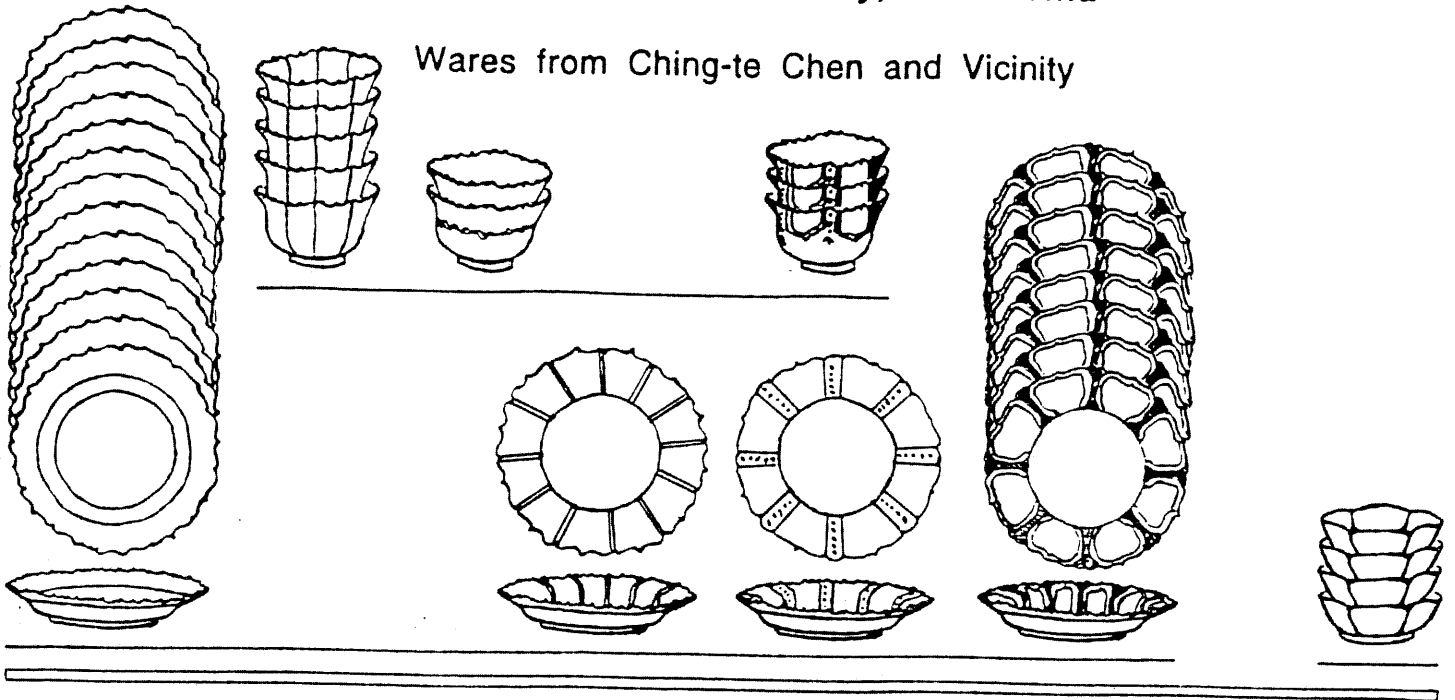
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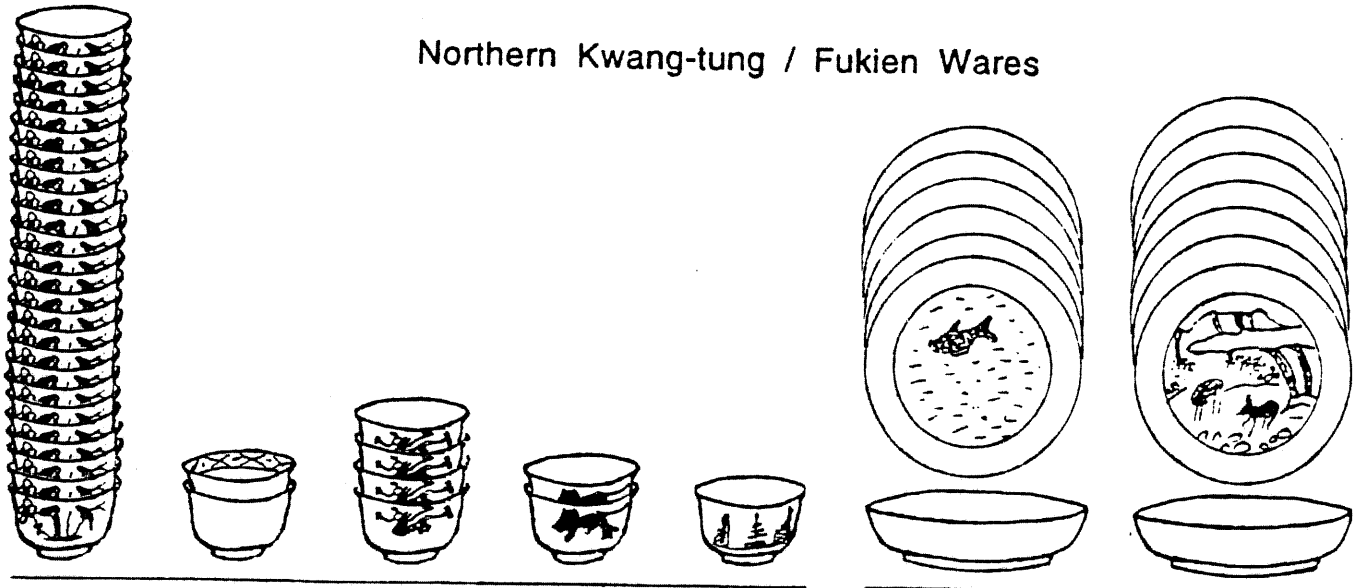
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**RECONSTRUCTION of the 1595 CHINESE PORCELAIN CARGO
Excavated at Drakes Bay, California**

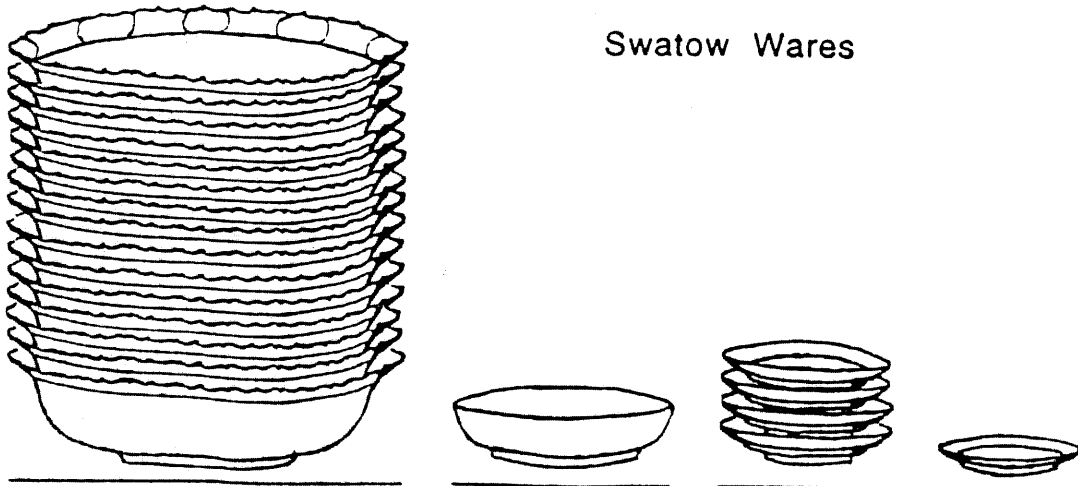
Wares from Ching-te Chen and Vicinity



Northern Kwang-tung / Fukien Wares

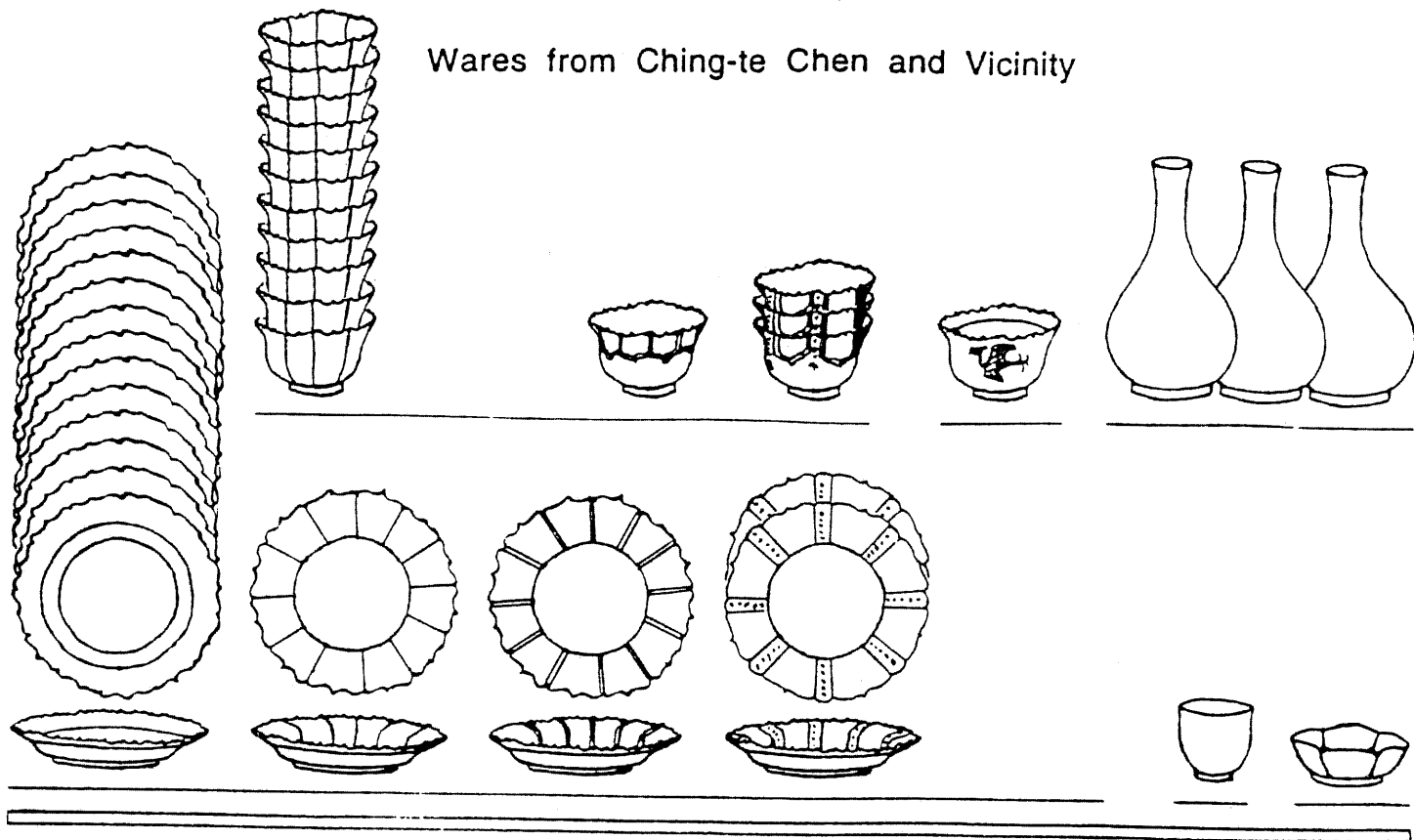


Swatow Wares

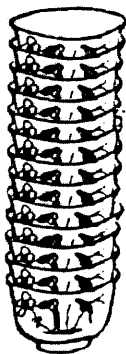


RECONSTRUCTION of the 1579 CHINESE PORCELAIN CARGO
Excavated at Drakes Bay, California

Wares from Ching-te Chen and Vicinity



Northern Kwang-tung / Fukien Wares



Swatow Wares

These kilns began production ca. 1590.

