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The Chinese Ceramic Sherds Unearthed at the Julfar al-Nudud Port Site in the Emirate of Ras al-Khaimah, United Arab Emirates

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The Julfar port site is located in the northern part of the Oman peninsula in the southwest of the Persian Gulf. Remains are scattered over four kilometers of beaches in the northern part of the Ras al-Khaimah area in the United Arab Emirates. The remains include sites in Julfar al-Nudud, Julfar al-Mataf and Julfar al-Darbahaniyah (Figure 1).

By the end of the twentieth century, there were seven international archaeological excavation projects in the Julfar area, which is the port site where the best archaeological excavations have been conducted in the Persian Gulf area so far. In 1971, the British scholar Beatrice de Cardi conducted the first archaeological survey in this area.^[1] In the 1970s, Iraqi and German archaeological teams conducted exploratory excavations in Julfar al-Mataf and Julfar al-Nudud.^[2] From 1988 to 1994, Ras al-Khaimah’s

city government organized a “Julfar Port Sites International Archaeological Excavation Team,” and archaeological teams from Britain, France and Japan all conducted excavations in the Julfar al-Mataf port site

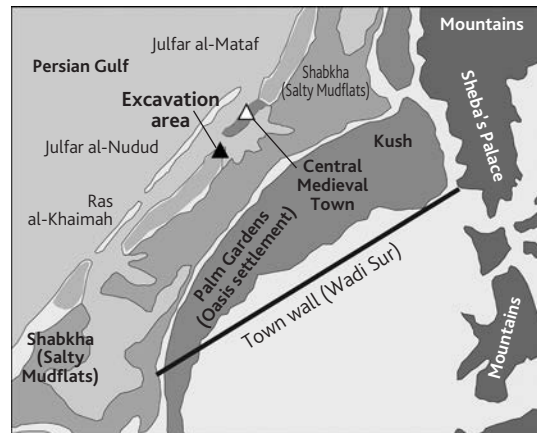


Figure 1: Excavation location map of the Julfar al-Nudud port site



during this period. Currently, only the archaeological team led by Tatsuo Sasaki of Kanazawa University in Japan has published an excavation report; teams from other countries have only published several brief summaries.^[3]

Over the last 30 years, a combination of literature research in ancient Arabic, Persian and Portuguese sources, and archaeological excavations has largely solved such important issues as the dating of Julfar port remains, the city's layout and structural features, and so on. Research shows that the name of Julfar port appears repeatedly in Arabic historical and geographical works from the eighth to the thirteenth centuries. From the perspective of archeology, however, the earliest remains are those located on the hills, such as those of Kush and Sheba's Palace. Due to close trade with Hormuz port during the fourteenth century, the economic center of the Julfar oasis migrated from the hills to the beaches.^[4] Thus, the rise of Julfar port was in the late fourteenth century, and its decline was at the end of the fifteenth century. Only sporadic structural remains of movable settlements and artifacts from the sixteenth to seventeenth centuries have been found.

From February to April of 2010, Ras al-Khaimah's city government and a British archaeological team conducted a joint rescue excavation in Julfar-al-Nudud port. The site is located on a strip of beach surround by the sea. Excavations focused on the northernmost part of the site – near the ruins of Julfar-al Mataf (Figure 2). The main objective was to clarify the relationship between the Julfar al-Mataf and Julfar al-Nudud sites. The excavation method of exposing a large area was adopted, and four sections (A to D) were explored, exposing a total area of 1,209 square meters. Among the sections, C is an ash pit and the remaining sections are house structures. The remains are mainly adobe brick foundations, stone foundations, floor surfaces, date honey production workshops and ash pits. Unearthed artifacts

include animal and plant debris, ceramic sherds, glass ornaments, coins, etc.

Combining research on the stratigraphic relationships between the excavated units and characteristics of the unearthed artifacts (including C-14 dating, chemical testing of glass utensils, dating analysis of ceramics and coins, etc.), the Julfar al-Nudud port site can be divided into six phases. Phase 1 has sporadic signs of human activity and dates to about

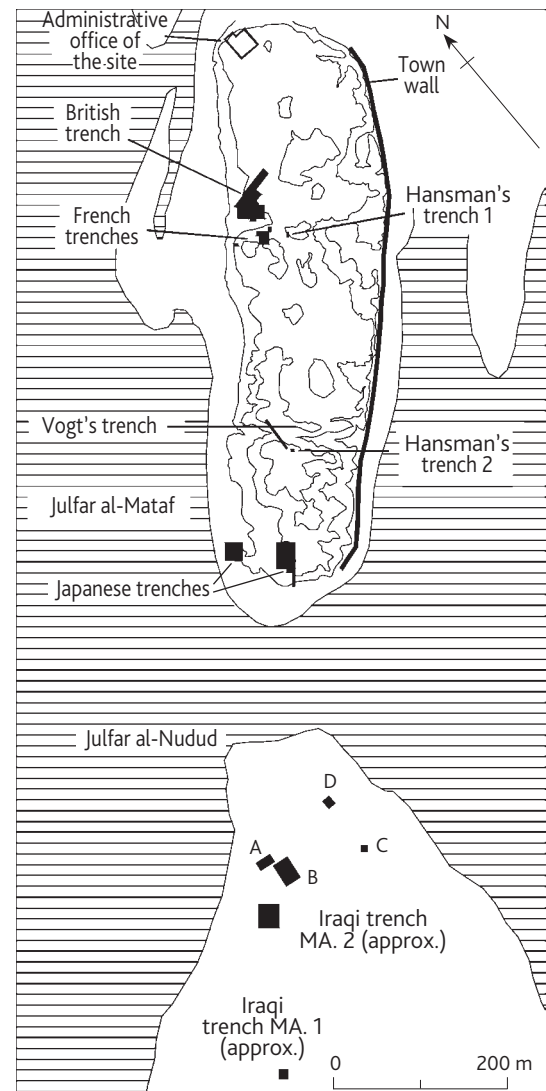


Figure 2: Excavation area distribution plan view of the Julfar al-Nudud Port site during 1980-2010 (A-D are excavation loci of 2010)

the early to the middle fourteenth century. Phases 2 and 3, respectively, are the flourishing and waning periods of adobe brick construction, which date from the middle to the latter half of the fourteenth century. The scale of adobe brick construction in Sections A and B of Phase 2 is relatively large, which confirms that the northern end of the Julfar al-Nudud site dates to at least the same period as the Julfar al-Mataf site, and probably dates to an even earlier period than the latter. Phase 4 dates to between the rise and decline period of the stone city, from around the latter half of fourteenth century to the late fifteenth century and early sixteenth century, which is the period of peak activity. Phase 5 dates to a sporadic, short-lived period after the abandonment of the stone city, from the late fifteenth or early sixteenth century to the early seventeenth century. Phase 6, dating from the early seventeenth century to the twentieth century, is a disturbed stratum.^[5]

A total of 371 ceramic sherds of the Far East (in terms of the period under discussion in this article, the Far East only includes China and Southeast Asian countries) were unearthed from the Julfar al-Nudud port site, of which 250 are Chinese ceramic sherds (not including containers for transportation and storage), accounting for 70% of the total Far Eastern ceramic sherds. In researching and cataloging the Far Eastern ceramic sherds from the Western Indian Ocean port site, we should also take into account a variety of factors in these three linked areas: production, transportation and consumption. Production, for example, primarily involves internal factors, such as artifact shapes, decoration, glaze, production and firing technique, firing time, etc. Transportation involves time spent in overseas transport and time spent in port; that is, it affects the difference in time between when the ceramics arrived at the Julfar al-Nudud port site and when they were produced. Consumption relates to the lifetime of the ceramics. Specifically, we should pay special attention to metal staple holes in ceramic sherds,^[6] as well as to

the nature of the excavation units and relationship between their strata. While cataloging the Chinese and Southeast Asian ceramic sherds from the Julfar al-Nudud port site, we carried out two tasks: first, we classified the ceramic sherds according to their characteristics; second, we put the ceramic sherds back into the excavation units in the chronological sequences of the site, so as to observe the combination of features and other evolutionary patterns.

CLASSIFICATION OF THE CHINESE CERAMIC SHERDS

Because the Julfar al-Nudud port site is located in a calm bay area, no ceramic sherds were significantly affected by wave erosion. So, we conclude that the artifacts on the surface of the site all belong to this site. Therefore, in handling the numerous Chinese ceramic sherds, we processed sherds from the enclosed excavation units of the substrata in the same way we processed sherds from the site surface. While classifying them, however, we ruled out 12 ceramic sherds collected from the site surface.

Two hundred and thirty-eight Chinese ceramic sherds were unearthed (including one twentieth century enameled porcelain sherd). Most of them – a total of 214 sherds – are green-glazed stoneware and blue-and-white porcelains, though a small number of blackish-brown glazed stoneware and bluish-white porcelain sherds also exist. Below is an introduction to and classification of the typical ceramic sherds.

(A) Green-Glazed Stoneware Sherds

A total of 109 green-glazed stoneware sherds were unearthed. These artifacts comprise mainly *wan*-bowl and *pan*-plate fragments, along with a small number of unrecognizable small vessel wall sherds.

Wan-bowl sherds (54 pieces):

Artifact JAN1513-2067 is a rim fragment. It has a wide flared mouth, sharp lip and inclined wall. The outer rim is decorated with two bands of carved con-



cave string pattern. Its thin but compacted grayish-yellow color stoneware body contains a high level of iron. Its grayish-green glaze is thin and has high transparency. The glaze is firmly attached to the ceramic body. The mouth diameter is 16 centimeters; the wall thickness is 0.3 cm. It is the product of Fujian kilns during the period between the mid Southern Song Dynasty and Yuan Dynasty (Figure 3).

Artifact JAN423-1562 is a rim fragment. The round lip is everted and thickened. It has an arc wall. Interlocking spray patterns decorate the inner wall. It has a thin grayish-white body. The green glaze has a thin grayish-yellow undertone with crackles in it. The mouth diameter is 19 cm. It is a product of Longquan kilns in the Zhejiang area from the mid Yuan Dynasty period (Figure 4).

Artifact JAN555-1713 is a base fragment. It has an arc wall and a ring foot with obliquely contracted wall. The center of the outer bottom has spiral traces. One metal staple hole is seen where the lower belly and the ring foot join. It has a white body and the surface is undecorated. It is covered with thin yellowish-green glaze, with the ring foot end and the center of the outer bottom unglazed. The ring foot diameter is 7 cm. It is a product of Longquan kilns in the Zhejiang area from the mid Yuan Dynasty (Figure 5).

Artifact JAN436-1514 is a rim fragment. It has a wide flared mouth, sharp lip and arc wall. String patterns and diagonal line patterns are incised on the outer rim. It has a white body and is covered with thin yellowish-green glaze with a glass-like texture. The mouth diameter is 18 cm. It is a product of Longquan kilns in the Zhejiang area from the late Yuan Dynasty (Figure 6).

Artifact JAN154-147 has a wide flared mouth, sharp lip and small ring foot. Four bands of concave string pattern are incised below the outer rim. In the middle of the outer wall are two bands of concave string pattern with lotus petal patterns under them. Diagonal line patterns and flower patterns decorate

the inner wall. The white body has eleven metal staple holes. Its smooth and shiny virid glaze has a thick and even texture. Ice crackles can be seen on the body. There is no glaze on the bottom except in the center. The mouth diameter is 21 cm and the height 9.5 cm. It is a product of Longquan kilns in the Zhejiang area from the late Yuan Dynasty to the early Ming Dynasty (Figures 7 and 8).

Artifact JAN420-1503 is a base fragment. It has an arc wall and short ring foot. Floral patterns are stamped on the inner bottom. It has a heavy grayish-white body. It is covered with yellowish-green glaze without crackles. The bottom is unglazed. The ring foot diameter is 6 cm. It is a product of Longquan kilns in the Zhejiang area from the late Yuan Dynasty to the early Ming Dynasty (Figure 9).

Artifact JAN432-1543 is a base fragment. It has an arc wall and a roughly made short ring foot. Scratches made from rotating the body [commonly known as the “bamboo filament brush pattern” – **Trans.**] can be seen on the outer wall. The surface is undecorated. It has a coarse light brown body. It is covered with thin grayish-green glaze with the inner wall of the ring foot and the bottom unglazed. The ring foot diameter is 8.2 cm. It is a product of Fujian kilns between the late Southern Song Dynasty and the early Ming Dynasty (Figure 10).^[7]

Artifact JAN563-1400 is a rim fragment. It has a wide flared mouth, sharp lip and arc wall. Its surface is undecorated. The grayish-white body is heavy. Its thick and smooth green-glazed stoneware glaze has a glass-like texture. The mouth diameter is 8 cm. It is a product of Longquan kilns in the Zhejiang area from the Yongle and Xuande reign periods of the Ming Dynasty [1403-1435 CE] (Figure 11).

Artifact JAN454-1501 is a rim fragment. It has a wide flared mouth, sharp lip and arc wall. Chrysanthemum petals are incised on the outer wall. The grayish-white body is coarse and has plenty of impurities. The grayish-yellow glaze is thin and transparent with a high level of vitrification. The mouth



Figure 3: Green-glazed stoneware *wan*-bowl (JAN1513-2067)



Figure 4: Green-glazed stoneware *wan*-bowl (JAN423-1562)

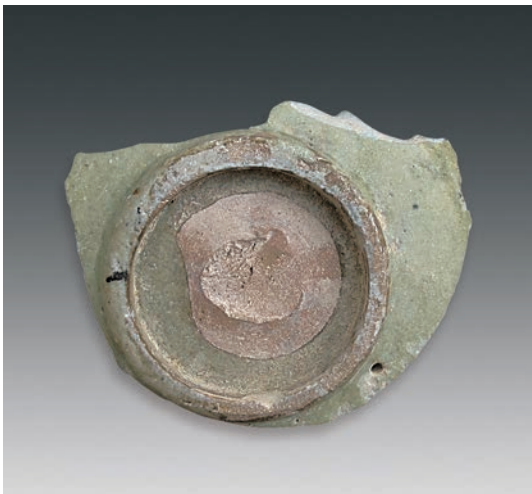


Figure 5: Green-glazed stoneware *wan*-bowl (JAN555-1713)

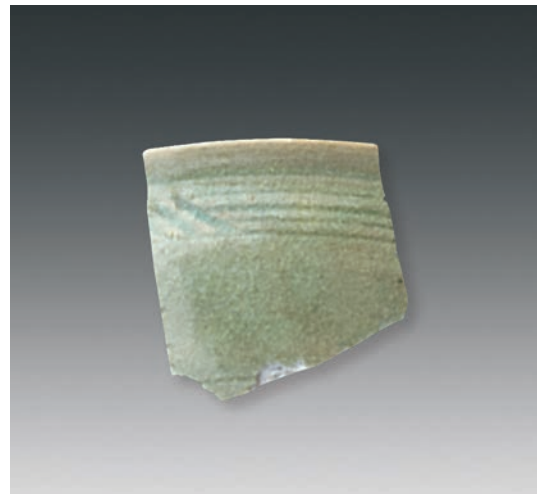


Figure 6: Green-glazed stoneware *wan*-bowl (JAN436-1514)

diameter is 15 cm. It is a product of Huiyang kilns in the Guangdong area from the Zhengtong and Hongzhi reign periods of the Ming Dynasty [1436-1505 CE] (Figure 12).^[8]

Pan-plate sherds (42 pieces):

Artifact JAN153-160 is a base fragment. Its inner bottom is stamped with floral and fish patterns. One metal staple hole can be seen. Its light gray body is thin. Its light green glaze has a thick and smooth texture. Its remaining length is 4 cm. It is a product

of Longquan kilns in the Zhejiang area from the late Southern Song to the Early Yuan Dynasty.

Artifact JAN129-147 is a base fragment. It has an arc wall and a wide flat short ring foot. Lotus petals decorate the inner and outer wall. One metal staple hole can be seen on the belly. It has a white body. Its thick bluish-green glaze has ice crackles. The foot diameter is 12 cm. It is a product of Longquan kilns in the Zhejiang area from the middle and late Yuan Dynasty to the early Ming Dynasty (Figure 13).



Figure 7: Green-glazed stoneware *wan*-bowl (JAN154-147)



Figure 8: Green-glazed stoneware *wan*-bowl (JAN154-147, interior wall)



Figure 9: Green-glazed stoneware *wan*-bowl (JAN420-1503)



Figure 10: Green-glazed stoneware *wan*-bowl (JAN432-1543)



Figure 11: Green-glazed stoneware *wan*-bowl (JAN563-1400)



Figure 12: Green-glazed stoneware *wan*-bowl (JAN454-1501)



Figure 13: Green-glazed stoneware *pan*-plate
(JAN129-147)



Figure 14: Green-glazed stoneware *pan*-plate
(JAN505-1376)



Figure 15: Green-glazed stoneware *pan*-plate
(JAN110-142)



Figure 16: Green-glazed stoneware *pan*-plate
(JAN33-119)

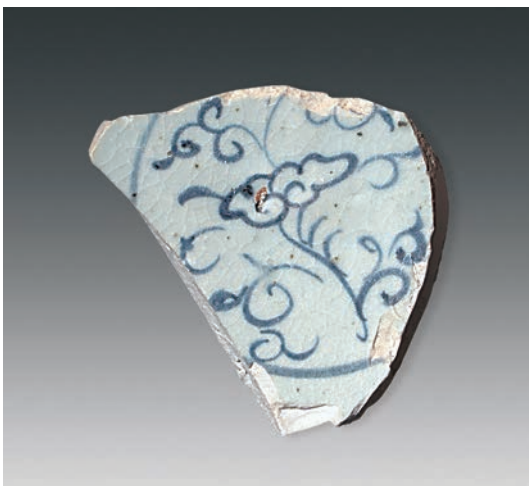


Figure 17: Blue-and-white porcelain *wan*-bowl
(JANBTP2-1366)



Figure 18: Blue-and-white porcelain *wan*-bowl
(JAN548-1777)



Figure 19: Blue-and-white porcelain *wan*-bowl (JAN520-1722, exterior wall)



Figure 20: Blue-and-white porcelain *wan*-bowl (JAN520-1722, interior wall)



Figure 21: Blue-and-white porcelain *wan*-bowl (JAN561-1693, exterior wall)

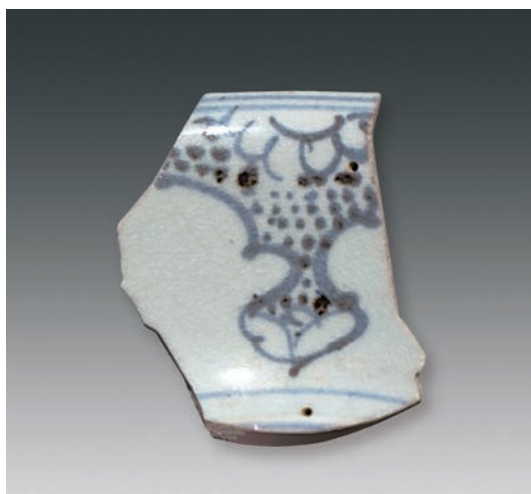


Figure 22: Blue-and-white porcelain *wan*-bowl (JAN561-1693, interior wall)

Artifact JAN505-1376 is a rim fragment. It has a slightly curled everted rim and an arc wall. Long, mold-impressed, strip-shaped lotus petals decorate the outer wall. One metal staple hole can be seen on the lower part of the rim. The white body is thin. It has a thin olive-green glaze. The mouth diameter is 28 cm. It is the product of Longquan kilns in the Zhejiang area from the middle Yuan Dynasty to the early Ming Dynasty (Figure 14).

Artifact JAN110-142 is a rim fragment. It has a flaring mouth and everted belly. The inner wall is incised with simple floral patterns. The grayish-white body is coarse and has many impurities. The green-glazed stoneware glaze has a yellowish undertone. The mouth diameter is 12 cm. It is a product of Huiyang kilns in the Guangdong area between the Zhengtong and Hongzhi reign periods of the Ming Dynasty [1436-1505 CE] (Figure 15).^[9]



Figure 23: Blue-and-white porcelain *wan*-bowl (JAN864-002)



Figure 24: Blue-and-white porcelain *wan*-bowl (JAN002-869)



Figure 25: Blue-and-white porcelain *pan*-plate (JAN039-137)



Figure 26: Blue-and-white porcelain *pan*-plates (JAN521-1674, JAN503-1391, JAN521-1675)

Artifact JAN33-119 is a tiny belly fragment. The inner wall is incised with diamond-shaped patterns. It has a fine white body. The light green glaze has crackles, and the glaze has a glass-like texture. The remaining length is 2.2 cm, and the remaining width 1.8 cm. It is a product of Jingdezhen kilns in the Jiangxi area from the Chenghua and Hongzhi reign periods of the Ming Dynasty [1465-1505 CE] (Figure 16).^[10]

According to texture and color, the paste of the green-glazed stoneware sherds can be divided into seven categories. The first category is “coarse grayish-white,” which is the product of Longquan kilns from the late thirteenth century to the sixteenth century. The second category is “compacted white.” These high quality works are products of Longquan kilns

during the late thirteenth century to the sixteenth century. The third category is “fine and compacted with light or medium gray color.” These are products of Longquan kilns from the late twelfth century to the early fourteenth century. The fourth category is “compacted grayish-yellow with a high level of iron.” They are products of Fujian kilns from the twelfth century to the fifteenth century. The fifth category is “coarse and loose with light brown color.” They are products of Fujian kilns from the late twelfth century to the fifteenth century onwards. The sixth category is “coarse white with grayish undertone.” These products have many impurities. They are products of Huiyang kilns in the Guangdong area from the fifteenth century. The seventh category is



Figure 27: Blue-and-white porcelain *pan*-plate (JAN548-1765)

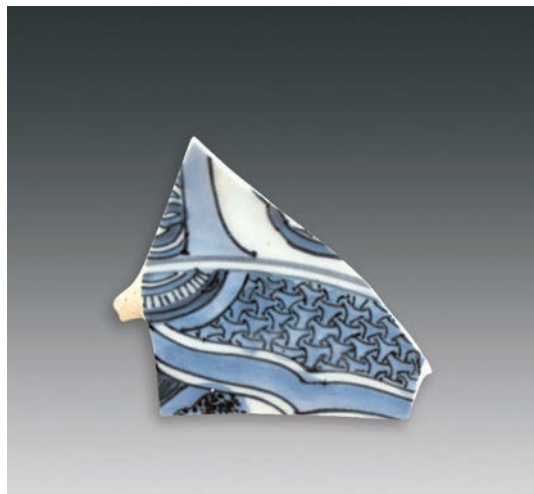


Figure 28: Blue-and-white porcelain *pan*-plate (JAN610-1414)



Figure 29: Blackish-brown glazed stoneware *wan*-bowl (JAN33-1107)



Figure 30: Blackish-brown glazed stoneware *guan*-jars with four lugs (JAN33-455, JAN33-456, JAN33-347)

“off-white fine body with grayish undertone.” They are products of Jingdezhen kilns in the Jiangxi area from the fifteenth century. Among the green-glazed stoneware sherds, 99 pieces are from Longquan kilns, accounting for 90.8% of the total number of green-glazed stoneware sherds. The glaze thickness and colors varies widely, from light green, to virid, to grayish-green and yellowish-green. Five of them may be from the late thirteenth century to the early fourteenth century. The rest are products from the

middle or late fourteenth century to the late fifteenth or early sixteenth century.

(B) Blue-and-White Porcelain Sherds

A total of 105 such sherds were unearthed. The main artifacts are *wan*-bowls and *pan*-plates, followed by four belly sherds of *ping*-vases or *hu*-jars, and one *he*-box fragment.

Wan-bowl sherds (56 pieces): Among them, 12 sherds are from the final years of the Yuan Dynasty



Figure 31: White porcelain *wan*-bowl (JAN604-1408)



Figure 32: Red and green painted porcelain *pan*-plate (JAN548-1767)



Figure 33: Large storage *guan*-jar produced in China (JANBTP2-1370)

[1333-1370 CE] or from the Hongwu to Zhengtong reign periods of the Ming Dynasty [1368-1449 CE], five sherds are from the Zhengde to Wanli reign periods of the Ming Dynasty [1506-1620 CE], and the rest are from the Chenghua and Hongzhi reign periods of the Ming Dynasty [1465-1505 CE].

Artifact JANBTP2-1366 is a base fragment. It has an arc wall and a short and wide ring foot with spiral traces on the center of the outer bottom. Floral sprays decorate the inner bottom. It has a grayish-white body with a relatively coarse texture. The exposed parts of the ring foot and the base show light brownish-yellow color. The glaze has a grayish undertone, and the underglaze blue has a bluish-gray undertone with iron spots in it. The bottom diameter is 5.8 cm. It is a product of Jingdezhen kilns in the Jiangxi Province from the late Yuan Dynasty to the Hongwu reign period of the Ming Dynasty (Figure 17).

Artifact JANS48-1777 is a base fragment. It has a tall ring foot. Variant lotus petal patterns decorate the inner bottom. A band of variant *ruyi*-scepter pattern can be seen on the outer wall. Double string patterns are incised on the outer part of the ring foot. It has a white body with a thin but hard texture. The glaze has a smooth bluish-gray undertone with a glass-like texture. The inner wall of the ring foot and the bottom are unglazed. The underglaze blue is authentic, with dark spots on thickly pigmented parts. The bottom diameter is 11 cm. It is a product of Jingdezhen kilns in the Jiangxi area from sometime during the Zhengtong and Jingtai reign periods of the Ming Dynasty [1436-1457 CE] (Figure 18).

Artifact JAN520-1722 is a rim fragment. It has an everted mouth and shallow belly. The inner and outer rims have decorative bands with diagonal paralleled lines. The inner wall has tassel patterns. The eight treasures of Buddhism are supported by lotus patterns on the outer wall. The decoration is painted with either a single line or filled-in color with double lines. It has a grayish-white body with



a thin but hard texture. The glaze is smooth and shiny with a bluish undertone. The underglaze blue is authentic. The mouth diameter is 14 cm. It is a product of Jingdezhen kilns in the Jiangxi area from sometime during the Chenghua and Hongzhi reign periods of the Ming Dynasty [1465-1505 CE] (Figures 19 and 20).

Artifact JAN561-1693 is a rim fragment. The body texture, shape and glaze color are all the same as Artifact JAN520-1722. Five cardinal *ruyi*-scepter brocade designs decorate the inner wall, while a turtle back brocade design decorates the outer wall. The mouth diameter is 18 cm. It is a product of Jingdezhen kilns in the Jiangxi area during the Chenghua and Hongzhi reign periods of the Ming Dynasty [1465-1505 CE] (Figures 21 and 22).^[11]

Artifact JAN864-002 is a rim fragment. It has an everted mouth and arc belly. The inner rim is decorated with a double cross-shaped diamond pattern. The outer rim is decorated with two bands of string pattern, and a vanilla leaf-shaped dragon pattern and lotus pattern are on the outer wall. It has a grayish-white body with a thin but hard texture. The glaze has a bluish undertone, and the underglaze blue shows an indigo color. The mouth diameter is 19 cm. It is a product of Jingdezhen kilns in the Jiangxi area during the Hongzhi and Zhengde reign periods of the Ming Dynasty [1488-1521 CE] (Figure 23).

Artifact JAN002-869 is a rim fragment. It has an everted mouth and arc belly. A band of string pattern decorates the inner rim. Two bands of string pattern decorate the outer rim. A floral pattern can be seen on the outer wall. Its white body is thin and hard. The glaze has a bluish undertone, and the underglaze blue is elegant. The mouth diameter is 18 cm. It is a product of Jingdezhen kilns in the Jiangxi area from sometime during the Wanli reign period of the Ming Dynasty [1573-1620 CE] (Figure 24).

Pan-plate sherds (44 pieces): Among them, eight sherds belong to the Zhengde reign period of the Ming Dynasty. The rest are products of the

Chenghua to Zhengde reign periods of the Ming Dynasty [1465-1521 CE].

Artifact JAN039-137 has a lobed mouth, wide rim and short ring foot. A concave groove is impressed into the inner wall, and strip-shaped chrysanthemum petals are incised into the outer wall. The inner and outer rims have two bands of string pattern sandwiching a band of brocade design. The inner rim has auspicious characters enclosed in framed panels. The inner bottom has a rhinoceros design depicting miscellaneous treasures. The white body is hard. The glaze has a bluish undertone, and the underglaze blue is slightly dark with diffusion. The mouth diameter is 19 cm. It is a product of Jingdezhen kilns in the Jiangxi area from between the Hongzhi and Zhengde reign periods of the Ming Dynasty [1488-1521 CE] (Figure 25).

Artifacts JAN521-1674, JAN503-1391 and JAN521-1675 are all rim sherds. These sherds have an oblique, flat, lobed rim and an arc wall. The inner rim has a design depicting miscellaneous treasures and seahorses playing among waves. The outer rim is decorated with a simplified swirling-grass pattern, while floral sprays decorate the outer wall. The decorative patterns are painted with filled-in color with double outlines. The white body is fine and light. The glaze is smooth, and the underglaze blue shows an indigo color. The mouth diameter is 30 cm. It is a product of Jingdezhen kilns in the Jiangxi area from sometime during the middle to late Wanli reign period of the Ming Dynasty [1573-1620 CE] (Figure 26).

Artifact JAN548-1765 is a base fragment. It has an arc wall and short ring foot. The inner bottom has a design of carp jumping over a dragon gate painted with filled-in color with double outlines. It has a fine white body. The glaze is shiny and smooth, with the foot end exposed. The underglaze blue is authentic. The bottom diameter is 17 cm. It is a product of Jingdezhen kilns in the Jiangxi area from sometime during the late Wanli reign period of the Ming Dynasty [1573-1620 CE] (Figure 27).

Artifact JAN610-1414 is a base fragment. It has a short ring foot, and the base of the plate is concave. Framed panels with a brocade background decorate the inner wall. The design in the eight-lobed framed panels of the inner base is unclear. The brocade background is decorated with a double-lined T-shaped pattern. The outer wall is decorated with simple framed panels with horizontal and vertical lines, and big and small circles. It has a white body. The glaze is shiny and smooth, and the underglaze blue shows a bluish-gray color. The bottom diameter is 12 cm. It is a product of Jingdezhen kilns in the Jiangxi area from the Tianqi reign period of the Ming Dynasty [1620-1627 CE] (Figure 28).

(C) Other Artifacts

Blackish-brown glazed stoneware *wan*-bowls (2 pieces): Artifact JAN33-1107 has an everted mouth, slant arc belly, and a short ring foot with its end turned outward. It has a coarse grayish-yellow body with fine impurities. It is covered with brownish-yellow glaze with flambé effect. The mouth diameter is 10 cm. It is a product of Shiwan kilns in the Guangdong area from the middle Ming Dynasty (Figure 29).^[12]

Blackish-brown glazed stoneware *pen*-basins (2 pieces): Artifact JAN002-844 has a wide flared mouth with a thickened outer lip and a slant belly. The light brownish-yellow body is covered with yellowish-brown glaze. The glaze surface is not even and has peeled off in places. The remaining length is 3.7 cm, and the remaining width is 3 cm. Artifacts in such shape were produced along the coast in the Guangdong area during the Song and Qing dynasties,^[13] as well as in Southeast Asia.^[14]

Blackish-brown glazed stoneware *guan*-jars with four lugs (5 pieces): Artifacts JAN33-455, JAN33-456 and JAN33-347 have short necks, arc bellies and high shoulders with symmetrical horizontal lugs. Each artifact's light gray body has a thin and hard texture. The black glaze is shiny and even.

They are from the southern kilns, produced in the early to the mid Ming Dynasty (Figure 30). In recent years, such small *guan*-jars with thin bodies and dark brown glaze have often been seen in shipwrecks from the fifteenth century in Southeast Asia.^[15]

Bluish-white porcelain *wan*-bowls (4 pieces): They are all small thin belly-wall sherds, of which the precise shapes cannot be determined. They are plain on both sides. Their grayish-white bodies have impurities. Their bluish-white glaze is even and smooth with a grayish undertone. The bodies have crackles. They are from the southern kilns, produced during the Southern Song Dynasty or the Yuan Dynasty.

Milky-white porcelain *wan*-bowls (3 pieces): These have light brown bodies. They are Fujian kiln products from the Yuan Dynasty.

White porcelain *wan*-bowls (5 pieces): Artifact JAN604-1408 is a belly fragment. Incised pattern decorates the inner and outer wall, and three metal staple holes can be seen on the surface. The white body has a fine and hard texture. The transparent glaze is even and firmly attached to the body. The thickness of the wall is 0.4 cm to 0.5 cm. It is a product of Jingdezhen kilns in the Jiangxi area from the Wanli reign period of the Ming Dynasty [1573-1620 CE] (Figure 31).

White *pan*-plate (1 piece: JANS02-1389): It has a small ring foot and a white body. Its glaze is transparent. It is a product of Jingdezhen kilns in the Jiangxi area from the Hongzhi to Zhengde reign periods of the Ming Dynasty [1488-1521 CE].

Red and green painted porcelain *pan*-plate (1 piece: JANS48-1767): It is a rim fragment. It has a flaring mouth and an arc wall. Its body is white. The transparent glaze shows a creamy white undertone. Red and green interlocking floral patterns decorate the outer wall. The mouth diameter is 18 cm. It is a product of Jingdezhen kilns in the Jiangxi area from the Zhengde reign period of the Ming Dynasty [1506-1521 CE] (Figure 32).



(D) Chinese and Southeast Asian Large Storage *Guan*-Jars

Thirty-nine sherds from large storage *guan*-jars were unearthed at the Julfar al-Nudud port site. One of them is a rim fragment and 14 of them are belly sherds. These sherds have a fine, compacted body texture with brownish-yellow, brick red or light gray color. Most of them have yellowish-green glaze, and some of them have brownish-red or dark brown glaze. The rim fragment (JANBTP2-1370) has a short neck and an everted rim (Figure 33). Such ceramic sherds belong to typical brown-glazed *guan*-jars with small double ears produced during the Song and Yuan dynasties. In addition, the texture and color of one shoulder fragment with an ear are similar to the texture and color of four belly sherds. The coarse paste and modeling of the ears are similar to those of the large storage *guan*-jar sherds produced in Sing Buri County kilns in Thailand. The other 18 pieces are tiny belly or base sherds. Due to the lack of sherds with distinctive shapes, we can only divide them according to body and glaze features. These sherds can be classified into two Chinese product categories and three Thai or Burmese product categories.^[16]

The categories of Chinese ceramic sherds unearthed from the Julfar al-Nudud port site are quite common in the Persian Gulf and East Africa regions. For example, the rim fragment of a plain *pan*-plate with flat everted rim, which has the same texture and glaze as the green-glazed stoneware *pan*-plate with applied floral design and fish pattern (JAN153-160) or the base fragment of a *pan*-plate with applied floral design and two fish. The latter two types of sherds can be found in a Maldives Island site,^[17] the Siraf site in Iran,^[18] Bahrain's Bahrain Karat castle ruins,^[19] the Luluyyah Fort site,^[20] Oman's Kara Hart site,^[21] the Quseir site in Yemen,^[22] the Fustat ruins in Egypt,^[23] the Rayal al-Tur site in Egypt,^[24] the ruins of Gedi,^[25] the Ras Mkumbuu site in Kenya,^[26] the Kilwa site in Tanzania,^[27] and so on. In addition, blue-and-white porcelain *wan*-bowls having the same texture and

color as the blue-and-white porcelain *wan*-bowls with the design depicting a lotus supporting the eight treasures of Buddhism (JAN520-1722) also appear in the Western Indian Ocean region, such as at the Julfar al-Mataf port site,^[28] the Qalhat site in Oman,^[29] Fort Jesus,^[30] the ruins of Gedi in Kenya,^[31] the tomb site at Vohehar in Madagascar,^[32] and so on.

FREQUENCY BY PHASES OF CHINESE AND SOUTHEAST ASIAN SHERDS AND ISLAMIC GLAZED POTTERY SHERDS

In the excavation of the Julfar al-Nudud port site in 2010, 371 Chinese and Southeast Asian ceramic sherds accounted for 1.33% of the total ceramic sherds unearthed. Among them, 15 sherds appeared on the site surface; the remaining 356 sherds were found distributed in four sections of the site: Section A exposed an area of about 280 sq.m., and unearthed 105 Chinese and Southeast Asian ceramic sherds; this is an average of about 0.375 sherd per square meter. Section B exposed the largest area of about 800 sq.m. A total of 132 Chinese and Southeast Asian ceramic sherds were unearthed; this is an average of about 0.165 sherd per square meter. Section C exposed the smallest area – only 15 sq.m. – which is an ash pit remain. A total of 15 Chinese and Southeast Asian ceramic sherds were unearthed; this is an average of about one sherd per square meter. Section D exposed an area of about 114 sq.m., from which a total of 104 pieces of Chinese and Southeast Asian ceramic sherds were unearthed; this is an average of about 0.912 sherd per square meter. In addition, Chinese ceramic sherds, Southeast Asian ceramic sherds and Indian pottery sherds were only unearthed in the third to the sixth strata on the site. From the dwelling site dating to during the adobe brick construction period, three glazed Islamic pottery sherds were unearthed from the first stratum and two sherds were unearthed from the second stratum. In the third stratum, glazed Islamic pottery sherds

surge in number; a total of 181 such sherds were unearthed from that stratum. These data clearly indicate that Chinese, Southeast Asian and Indian ceramics, as well as Islamic glazed pottery, were special parts of the material culture in the Julfar al-Nudud port city that was characterized by stone structures.

While analyzing the combination of types and varying numbers of Far Eastern ceramic sherds found in different strata, we did several things. First, we removed the 170 ceramic sherds unearthed from the sixth stratum of the ruins. Although a large number of early ceramic sherds are contained in it, this stratum is totally disturbed; the unearthed artifacts, therefore, have no value in chronological research. Second, the Chinese green-glazed stoneware, blue-and-white porcelains, and Southeast Asian green-glazed stoneware are dominant products from the Julfar al-Nudud port site. In order to observe the varying patterns of these three dominant products in the third to fifth strata, we decided to list these three types of ceramic sherds as separate categories,^[33] and to combine the Chinese blackish-brown glazed porcelain, bluish-white porcelain, milky-white glazed porcelain, white porcelain, and overglazed decorated sherds into a single “other Chinese ceramic fragments” category, and to combine Vietnamese underglaze iron painted porcelains and Burmese opaque-white glazed earthenware into a single “other Southeast Asian ceramic sherds” category. In view of the topic discussed in this article, we will not elaborate upon the development of Southeast Asian green-glazed stoneware and other Southeast Asian ceramic sherds. Instead, we will only observe the number of changes observable in the Chinese and Southeast Asian ceramic sherds. In the third stratum, we unearthed 29 Chinese green-glazed stoneware sherds, one bluish-white porcelain sherd, one blackish-brown glazed porcelain sherd, and one Vietnamese brown-underglaze polychrome porcelain sherd; these counts show that the Chinese green-glazed stoneware is dominant in the third stratum. In the fourth stratum, combinations of multiple

types begin to appear. In this stratum, the number of Chinese green-glazed stoneware sherds is still large, but the total number is reduced to 20 sherds; Chinese blue-and-white porcelain sherds begin to appear, their number taking second place, with a total of 10 sherds; in addition, six Southeast Asian green-glazed stoneware sherds were unearthed from this stratum. However, almost no other Chinese and Southeast Asian ceramic sherds were unearthed from this stratum. In the fifth stratum, the number of Chinese blue-and-white porcelain sherds grows significantly, taking first place, with a total of 33 sherds; the Chinese green-glazed stoneware sherds rank second, with 25 sherds; at the same time, 18 Southeast Asian green-glazed stoneware sherds were unearthed from this stratum, with four bowl sherds and 14 plate sherds. These Southeast Asian green-glazed stoneware plate sherds far outnumber the Chinese green-glazed stoneware *pan*-plate sherds in this stratum. Judging from this, it appears that after the time represented by the fifth stratum (the end of the fifteenth century), Chinese blue-and-white porcelains became the dominant products in the Julfar al-Nudud port site, with Southeast Asian green-glazed stoneware plates replacing the Chinese green-glazed stoneware *pan*-plates from the Longquan kilns.

Forty-two Chinese and Southeast Asian ceramic sherds with metal staple holes were unearthed from the Julfar al-Nudud port site, accounting for 11.3% of the total ceramic sherds. Among the 28 Chinese ceramic sherds with metal staple holes, 10 are Longquan green-glazed stoneware sherds from the Yuan Dynasty to the early Ming Dynasty, and the remaining 18 sherds are blue-and-white porcelains, white porcelain and overglaze-painted porcelain sherds from the Xuande and Wanli reign periods of the Ming Dynasty. In addition, 11 green-glazed stoneware sherds from Thailand and Burma (including a bowl fragment and 10 plate sherds) and three Burmese opaque-white glazed earthenware plate sherds all have metal staple holes.^[34]



This phenomenon may indicate that locals at the Julfar al-Nudud port site favored more Southeast Asian ceramics imported after the middle fifteenth century; especially green-glazed stoneware plates and opaque-white glazed earthenware plates. The relative numbers of different sherd types recovered also seems to confirm, as suggested above, that the green-glazed stoneware plates of Southeast Asia replaced the green-glazed stoneware *pan*-plates from

the Longquan kilns in China in the second half of the fifteenth century. Meanwhile, the phenomena discussed here remind us that research about Chinese ceramic export cannot be isolated. Rather, only through a comparative study of Chinese ceramics and Southeast Asian ceramics can we hope to arrive at a more practical and comprehensive understanding of the import and use of Far Eastern ceramics in the West Indian Ocean region.

Photography: Oliver Jackson and Bing Zhao

Drawings: Julia Bastek

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- Sasaki, Tatsuo. 2006. "Jurufāru shutsudo tōjiki no jūryō" ジュルファール出土陶磁器の重量 (Weight of Ceramics Found from Julfar). *Studies and Essays: History, Archaeology, and Geography*, Vol. 26, pp. 51-202.
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- King, Geoffrey R. D. 1990. "Excavations by the British Team at Julfar, Ras al-Khaimah, United Arab Emirates: Interim Report on the First Season-1989." *Proceedings of the Seminar for Arabian Studies* (hereafter abbreviated as PSAS), Vol. 20, pp. 79-93.
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Piacentini, Valeria F. and Christian Velde. 2009. "The Battle of Julfar (880-1475 CE)." *PSAS*, Vol. 39, pp. 321-334.

[5] Concerning the first public report of this excavation, see:

Zhao, Bing, Robert Carter, Kevin Lane and Christian Velde. 2011. "The Rise and Ruin of a Medieval Port Town: Excavations at Julfar al-Nudud." In *Conference of the Seminar for Arabian Studies*. British Museum, London.

[6] Some scholars think the ceramic sherds with metal staple holes tell us that residents near ports saved ceramics broken due to long distance transport for their own use. See:

Kawatoko, Mutruo and Yoko Shindo. 2009. *Artifacts of the Islamic Period Excavation in the Royal al-Tur, South Sinai, Egypt: Ceramics, Glass, Painted Plaster*, p. 30. Research Centre for Islamic Area Studies & Organization for Islamic Area Studies, Waseda University, Tokyo.

However, after comparing the material cultural characteristics of a coastal trade port site in East Africa and nearby village ruins, we can see that the port cities of international and domestic trade centers are the main consumption areas of imported luxuries (including Chinese and Southeast Asian ceramics). See:

LaViolette, Adria and Jeffrey Fleisher. 2004. "The Archaeology of Sub-Saharan Urbanism: Cities and their Countrysides." In *African Archaeology: A Critical Introduction*, pp. 327-352. Wiley-Blackwell, Oxford.

Wynne-Jones, Stephanie. 2007. "It's What You Do With It That Counts: Performed Identities in the East African Coastal landscape." *Journal of Social Archaeology*, Vol. 7, No. 3, pp. 325-345.

In addition, few Chinese ceramic sherds were unearthed from inland areas in the Western Indian Ocean region, and this phenomenon supports the above opinion. So, we think metal staple holes indicate that locals of the port area used Chinese ceramics for a long time.

[7] It may be a product from the Longmen kilns in Anxi County, Fujian Province. See:

Zeng, Fan. 2001. *Fujian taoci kaogu gailun* 福建陶瓷考古概论 (General Introduction to Ceramic Archaeology in Fujian Province), Illustration 50. Fujian Province Cartography Publishing House.

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[10] Concerning the same kind of green-glazed stoneware *pan*-plates recovered from a Brunei shipwreck, see:

Zhao, Bing. 2001. "Les céramiques monochromes chinoises" (Chinese Monochrome Ceramics). In *La mémoire engloutie de Brunei 2*. (The Sunken Memory of Brunei 2), pp. 65-85. Edition Textuel, Paris.

[11] The *pan*-plate sherds with five cardinal *ruyi*-scepter brocade design on a wave background unearthed from the Ming Palace in Nanjing are assessed as a blank. See:

Nanjing Museum et al. 1996. *Zhu Ming yicui* 朱明遺萃 (Lost Treasures in the Ming Dynasty of the Zhu Royal Family), p. 105. The Chinese University of Hong Kong.

However, judging from recent data from Southeast Asian shipwrecks, most of the blue-and-white porcelains with this pattern appear in shipwrecks from the Hongzhi reign period in the Ming Dynasty. Concerning the Lena Shoal shipwreck, see:

Goddio, Franck, Stacey Pierson and Monique Crick. 2000. *Sunken Treasure: Fifteenth Century Chinese Ceramics from the Lena Cargo*, p. 68. Periplus. London.

Concerning the Brunei shipwreck, see:

Chollet, Hélène. 2001. "La ceramice Bleu-et-Blanc" (The Blue-and-White Porcelains). In *La mémoire engloutie de Brunei 2* (The Sunken Memory of Brunei 2), pp. 29-64. Edition Textuel, Paris.

Therefore, we think the mass production of this group should occur during the Chenghua to the Hongzhi reign periods of the Ming Dynasty.



- [12] The Complete Works of Chinese Ceramics Editorial Committee. 1982. *Zhongguo taoci quanji 24 - Shiwan yao* 中国陶瓷全集24-石湾窑 (The Complete Works of Chinese Ceramics 24 – Shiwan Kiln), Figure 16. Shanghai People's Fine Arts Publishing House, Binobi Public Corporation, Japan.
- [13] About the Xicun Kiln sites, see:
Guangzhou Cultural Heritage Management Committee. 1987. *Guangzhou Xicun yao* 广州西村窑 (Kilns in Xicun Village in Guangzhou), Figures 17-18. The Chinese University of Hong Kong.
About the Shiwan kiln sites, see:
Foshan Municipal Museum. 1978. "Guangdong Shiwan guyaozhi diaocha" 广东石湾古窑址调查 (Survey of the Ancient Kiln Sites in Shiwan County). *Kaogu* 考古 (Archaeology) No. 3.
- [14] Brown, Roxanna and Sten Sjørstrand. 2000. *Turiang: A Fourteenth-Century Shipwreck in Southeast Asian Waters*, pl. 3. Pacific Asia Museum, Los Angeles.
- [15] On the Turiang shipwreck, see [14], pl. 31.
On the Koh Kham shipwreck, see:
Crick, Monique. 2009. "Chinese Trade Ceramics for Southeast Asia, I-XVII Centuries." In *Collection of Ambassador and Mrs. Charles Muller*, p. 78. Five Continents Editions, Milan.
On the Lena Shoal shipwreck, see:
Goddio, Franck and Monique Crick. 2002. *Lost at Sea: The Strange Route of the Lena Shoal Junk*. Periplus, London.
- [16] Because of the lack of evidence from Chinese and Southeast Asian kiln sites, we cannot yet determine securely the origin of the large *guan*-jar storage containers unearthed from the Western Indian Ocean region. At the same time, we cannot rule out the possibility that large *guan*-jar storage containers were produced both in the Chinese southern coastal kilns and the Southeast Asian kilns at the same time. So, until a new synthesis on large *guan*-jar storage containers has been carried out, we will not attempt to classify the jars for a more precise origin in either of the two large production areas, China and Southeast Asia; instead, we will only describe and classify the texture and color of the large *guan*-jar storage container sherds.
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- [23] Gyllensvard, Bo. 1975. "Recent Finds of Chinese Ceramics at Fostat. II." *Bulletin of the Museum of Far Eastern Antiquities*, No. 47, pp. 93-117, pl. 28.
- [24] Mutruo, Kawatoko and Yoko Shindo. 2009. *Artifacts of the Islamic Period Excavation in the Rayal al-Tur, South Sinai, Egypt: Ceramics, Glass, Painted Plaster*, pl. 24-4. Research Centre for Islamic Area Studies & Organization for Islamic Area Studies, Waseda University, Tokyo.
- [25] Pradines, Stéphane. 2010. "Gedi: une Cité Portuaire Swahilie" (Gedi: A Swahili Port City). In *Islam Médiéval en Afrique Orientale* (Medieval Islam in Eastern Africa), Figure 138, pp. 417-08, 417-09, 420-02. Institut Français d'Archéologie Orientale (French Institute of Oriental Archaeology), Cairo.
Liu, Yan. 2012. "Kenniya Binhaisheng Gedigucheng yizhi chutu Zhongguo ciqi" 肯尼亚滨海省格迪古城遗址出土中国瓷器 (Chinese Ceramics Unearthed from Ruins of Gedi near a Coastal Town in Kenya). *Wenwu* 文物 (Cultural Relics) No. 11, p. 44, Figure 18.
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- [27] Chittick, Neville. 1974. *Kilwa, an Islamic Trading City on the East African Coast*, Vol. 2, Figure 92. British Institute in Eastern Africa, Nairobi.
- [28] Sasaki, Tatsuo. 2006. See [3], Figure 56.
- [29] See [21] above.
- [30] Kirkman, James. 1967. "Les importations des céramiques sur la cote du Kenya, Arabes et Islamisés à Madagascar et dans l'océan Indien" (Imports of Ceramics on the Coast of Kenya, Arabs and the Islamized in Madagascar and the Indian Ocean). *Revue de Madagascar* (Madagascar Review), Vol. 35/36/37, pp. 35-44, Figure 16.
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- [33] In recent years, Japanese scholars conducted kiln site surveys in the Martaban area [present-day Mottama area – **Trans.**] of Myanmar (Burma) and published reports on evidence on green-glazed stoneware productions in Myanmar. The author only addresses quantitative evolution by phase between Chinese and Southeast Asian ceramics, and will not offer here more detailed description on Southeast Asian ceramics.
- [34] The kilns for opaque-white glazed earthenware *pan*-plates have not been found. But Japanese scholars have found similar sherds in Mudon Canal in the Martaban area; the same scholars have observed the similarities in the paste with the above discussed green-glazed stoneware plates from Martaban area. See:
- Sasaki, Tatsuo, Takenori Nogami and Hanae Sasaki. 2004. "Myanmā yōseki chōsa to saishū tōji" ミャンマー窯跡調査と採集陶磁 (The Study on Myanmar Trade Ceramics: Martaban Jar and Opaque-White Glazed Earthenware Plates). *Kanazawadaigaku kōkogaku kiyō* 金沢大学考古学紀要 (Archaeological Bulletin Kanazawa University), Vol. 27, Figures 94, 117, 120. So, the opaque-white glazed earthen ware plates were probably produced in ancient Burma.

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