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Quanzhou Archaeology: A Brief Review

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The city of Quanzhou in coastal Fujian Province, southeastern China, rose to prominence as an international trading port in the twelfth to fourteenth centuries A.D. *This paper reviews its published archaeological record which includes the Kaiyuansi Temple, several mosques, Hindu sites, a Manichaeist temple at Huabiao, several types of tombs, the Houzhu and Fashi sunken ships, and kiln sites.*

KEY WORDS: China; Quanzhou; religious sites; tombs.

INTRODUCTION

In this paper we provide an overview of published accounts of the archaeology of the Chinese city of Quanzhou, Fujian, mostly from the Tang (A.D. 618–960) through the Song (A.D. 960–1279) and Yuan (A.D. 1279–1368) Dynasties, the time of its greatest power (Table I). Quanzhou was an extremely important port for trade with Southeast Asia. Its archaeological heritage sheds light on life in the Fujian region of Southern China. The history of Quanzhou has been discussed by recent writers (Clark, 1991; Schottenhammer, 2001; So, 2000; Wang, 1999). Because of its importance as an international trading port, Quanzhou figures in discussions of world trade in the thirteenth and fourteenth centuries (Abu-Lughod, 1989). The city was visited in the fourteenth century by Ibn Battuta who said that it was the largest or one of the largest ports in the world and that in the harbor he saw 100 large junks and innumerable small ones. The making of porcelain and the existence of bazaars are mentioned as well (Gibb, 1994, pp. 894–895). Marco Polo is thought to have arrived in Quanzhou in the late thirteenth century. He mentions the large volume of pepper imported to China through Quanzhou and the great size of the

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Table I. Date Ranges of Late Chinese Imperial Dynasties

Song	960–1126 (North)
	1127–1279 (South)
Yuan (Mongol)	1279–1368
Ming	1368–1644
Qing	1644–1912

port. He describes customs and freight charges and mentions the manufacture of porcelain (Marsden, 1948, p. 246). Polo's actual visit to China is considered to be a fabrication by Wood (1996). A manuscript describing a visit by Jacob of Ancona has recently been published (D'Ancona, 1997), but its veracity cannot be ascertained since the original manuscript has been accessible only to its editor. The location of Quanzhou on the South China coast is shown in Fig. 1 and major sites in its vicinity, in Fig. 2. Figure 3 gives the location of sites in and around the city.

HISTORICAL CONTEXT

Clark states that between the eighth and early ninth centuries a small network of urban centers, with the functions of marketing and collecting taxes, existed on the coast of southern Fujian and spread into the hinterland (Clark, 1991, p. 27). In the tenth century the Min Kingdom (904–945) arose in southern Quanzhou as an independent center, supported by the Liang Dynasty in north China. Min attempted to make Quanzhou a major center of Buddhism. Because the people of Min were cut off from the hinterland by hostile polities they developed sea routes, sending their tribute to Liang in Shandong by sea (Clark, 1991, p. 35). Min attempted to establish foreign trade both for survival and legitimation.

In 960 the Song government was established, and in 961 it received tribute from the Quannan region. During the tenth and eleventh centuries there was an increase in population and prosperity, and Fujian natives became involved in long distance maritime trade. Communication in many areas within the Quannan region was greatly improved by extensive bridge building which facilitated trade and economic development.

In the eleventh century trade increased, and there was a substantial foreign community in Quanzhou. Local officials, who were supposed to tax and regulate trade, exchanged privately with merchants, paying a fraction of what should have been paid through the state trade monopoly system. Up to that time the only legal way to trade in large volume was to leave and enter China through the Trade Superintendent's Office in Guangzhou. In 1087 this requirement was eliminated when the Quanzhou Trade Superintendent's Office was opened, which led to a very substantial increase in trade (Clark, 1991, p. 127). In addition to the trade with Southeast Asia, transshipment to Zhejiang and Shandong was also important. The Northern Song Trade Superintendent's Office was situated outside the

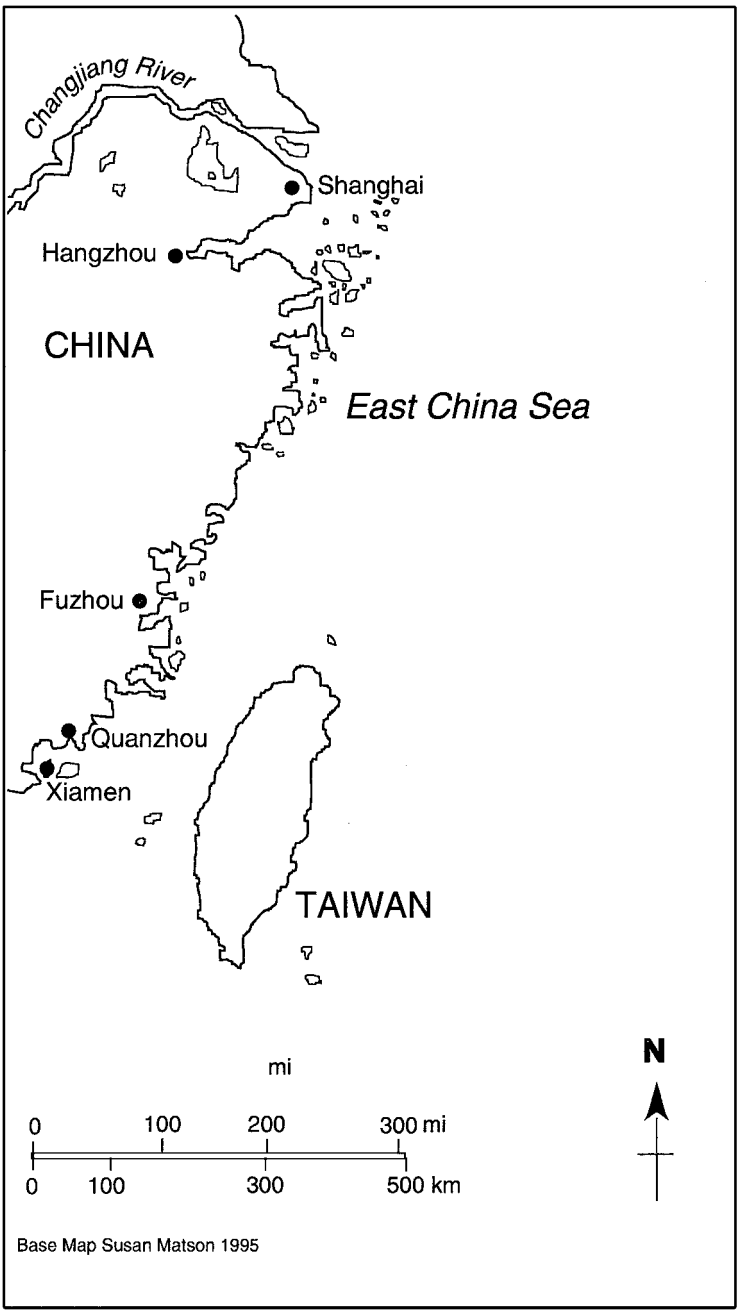

Fig. 1. Location of Quanzhou in Southeastern China.

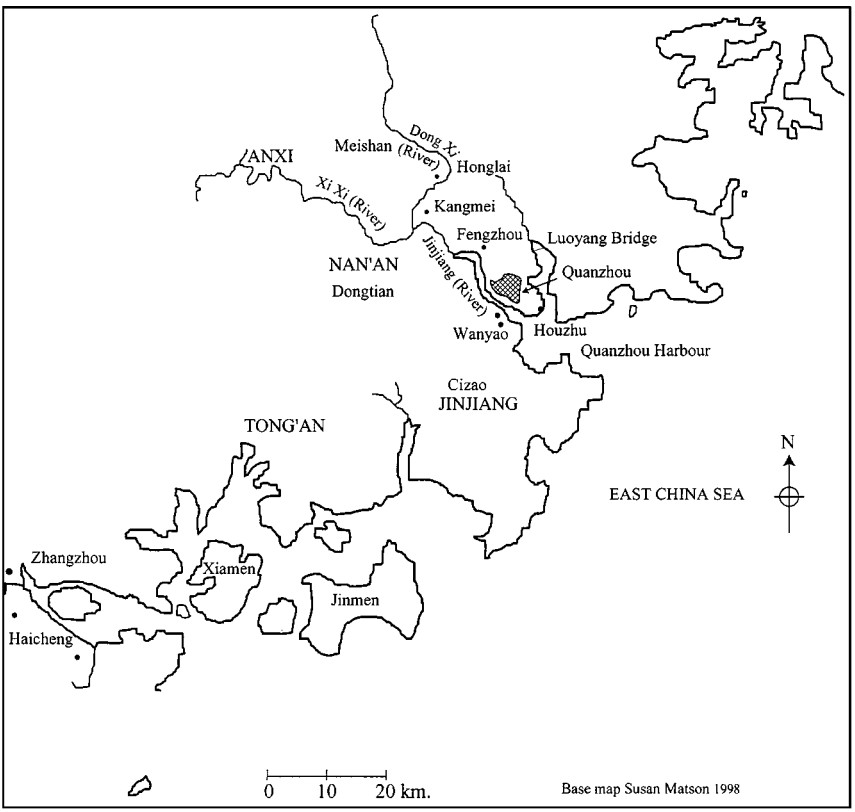

Fig. 2. Quanzhou and the Quannan region.

southern boundary of the city. In the southern Song Period the city expanded to the south, creating a new prosperous area inside the extended city wall (Zhuang, 1980a). At various times during the Song there were restrictions on metals, metal currency, weapons, and also wax and tea (Li and Chen, 1984). Since there were no restrictions on the trade in ceramics, it expanded. Zhao Rugua has left a description of the workings of the Trade Superintendency. He was a Song imperial clansman and Trade Superintendent of Quanzhou around 1220. His account, the *Zhu Fan Zhi* (*Description of Barbarian Peoples*) (Hirth and Rockhill, 1966) is a detailed account of the countries engaged in trade with Quanzhou and a detailed list of the goods of these countries which passed through the customs section of the Trade Superintendent's Office. He also describes the nature of the trade or barter with different countries, with some details on the rates and conditions of taxation in Quanzhou. A second famous Trade Superintendent was Pu Shougeng, who held office during 1245–46. He controlled not only naval but mercantile ships,

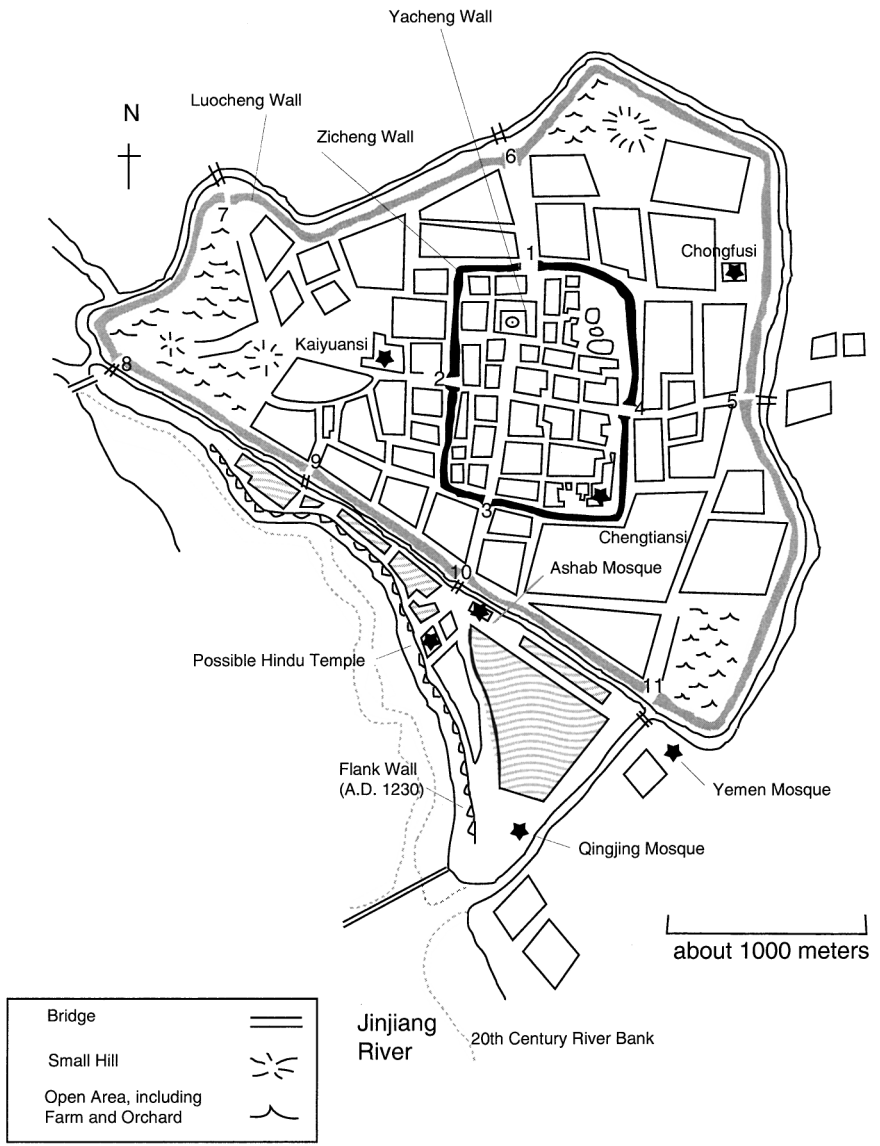

Fig. 3. Map of Quanzhou City in the Song Dynasty showing city walls and gates, important types of buildings, mosques, and possible Hindu temple site (base map from So, 1991a, pp. 98, 101, 105, with permission). Gates: 1. Quanshan 2. Suqing 3. Chongyang 4. Yingchun 5. Renfeng (East) 6. Chaotian (North) 7. Yicheng (West) 8. Linzhang (Southwest) 9. Tongjin (Flank) 10. Zhennan (Southern) 11. Tonghuai (Southeast Watergate).

and later assumed high official posts in the Yuan central government (Kuwabara, 1989; Lo, 1959; So, 2000, pp. 301–305). His family is thought to have been Muslim of Arab descent. Song states that when goods were brought to Quanzhou by foreign traders in the eleventh century, the Trade Superintendency (*Shibosi*) estimated the cost of the goods and then goods of equal or higher value were bestowed on the merchant (Song, 1988). The Song government officials often monopolized the exchange, insisting that goods given to merchants must come from government warehouses and could not be bought on the open market. After the establishment of the *Shibosi*, revenues on incense were particularly high. In the twelfth century the Song government rewarded officials who brought in large volumes of trade. The merchants from western Asia, often termed Dashi merchants, engaged in this system of high volume foreign trade. In the thirteenth century, many of the Dashi merchants became officials in the Southern Song government.

Recorded trade volumes declined in the early thirteenth century because of piracy, corruption, and the huge economic demand of the Southern Branch of the Song Royal Clan, which had fled from the north (Clark, 1991, p. 175; So, 1994). Trade revived at the end of the Song with the arrival of the Mongols (Yuan), who were welcomed by the merchants of Quanzhou, and who organized the massacre at the members of the Song Royal Clan. During the Yuan Dynasty, of the total of seven trade superintendencies (Hangzhou, Shanghai, Hanpu, Wenzhou, Qingyuan, Guangdong, and Quanzhou), only Quanzhou taxed at the rate of 1:30, while the rest of taxed at a rate of 1:15 (Song, 1988, p. 221). In 1293 the Yuan Imperial Academy Advisor (*Shizu*) recommended that all of the ports tax at the rate imposed by Quanzhou, in view of its success.

The Yuan policy favored Mongolians and western Asians for administrative positions. Northern Han Chinese were given third preference while southern Han Chinese were given lowest priority. The Yuan government adopted the block leader system of the Song, making Mongolians leaders of every 20 households. The ethnically Han army was divided into the "Han army" and "recently surrendered army"; both were disarmed in peace time and controlled by Mongolians and foreigners. Local people were prohibited from keeping weapons, hunting, keeping horses, conducting public assemblies, travelling at night, or trading at markets (Zhuang, 1980b, p. 21).

From the beginning of the Yuan, foreign troops loyal to the Mongols, from Yangzhou and Huzhou, were stationed in Quanzhou. They were allied with the Persian community in Quanzhou. During the decline of the Yuan Dynasty, the foreign troops turned against the Mongolian elites in an attempt to set up their own state. When the foreigners discovered the weakness of the Yuan troops in their attempts to suppress rebels in Xinghua, they initiated rebellion. The leaders of the rebellion were the descendants of the powerful trading families of Pu Shougeng and Nawuna, the Trade Superintendent at the time. This rebellion

of foreign ethnic groups, called the Ipsah Rebellion by historians (Chen, 1992, p. 8; Zhuang, 1980b), lasted 10 years and involved a large area including Fuzhou, Quanzhou, and Xinghua. According to Maejima (1973, 1974) and Zhuang (1980b), the first 5 years of the rebellion were characterized by a struggle between Persian forces in Quanzhou and Xinghua, while the latter 5 years were dominated by a rebellion started by Nawuna and Pu Shougeng descendants who wanted to expand trade but were restricted by the Mongols. Zhuang states that the immediate cause of the outbreak was the Muslim disapproval of the building of a Hindu temple on the site of the former governor's residence (Zhuang, 1980b, pp. 23–24).

In 1366 the army of Ipsah was wiped out by Chen Youding who led the Han Chinese army of Fujian province. With a few exceptions, the Muslims of Quanzhou were massacred after the city's fall. At this point foreigners stopped coming and the seaport was at a standstill. Quanzhou's turmoil ended in 1375 with the arrival of Ming troops. The decline of Quanzhou at the end of the Yuan and in the early Ming resulted from many causes, including the devastation of the rebellion, and the decline of the role of Arab traders as intermediaries between Europe and Asia. Both the rebels and Chen Youding's troops massacred local residents. The fact that many Muslim and Hindu sites were destroyed indicates antiforeign aggression at the end of the Yuan.

RESEARCH QUESTIONS

Our primary purpose is to convey an impression of the city during its florescent period, from an archaeological point of view. Our discussion includes the city layout, some important religious sites, tombs of different communities, communication routes, Song Dynasty boats, and manufacturing sites (kilns). Our treatment is unavoidably uneven, since we rely on published data, in the manner of an overview statement which might be prepared before initiating systematic regional survey, long range excavations or western-style cultural resource management. The large excavations carried out to date concern religious sites and sunken ships, and there have been surveys of tomb stones and kiln sites. The topics of priority to Chinese archaeologists have been religious diversity and foreign trade. The kiln site surveys have been devoted to the study of the history of Chinese ceramics and their technology. Acknowledging that we do not have enough data to actually test hypotheses, we propose several guiding questions which may inform future field projects when circumstances permit:

1. What was the link between the foreign communities, religious plurality, and economic prosperity in the region?
2. What role did Muslim traders play in the rise of Quanzhou's foreign trade and prosperity?

3. What were the organization of overseas trade, and the technology of maritime navigation like?
4. How did state policies affect the development of overseas trade? Gates (1996) documents the interplay between government control and petty capitalism in South China for the past few centuries. Can we see the expression of petty capitalism in the archaeological record?
5. How did production change? Can we see evidence of expansion and intensification of ceramic production for export?

THE URBAN LAYOUT

The geographer, Billie K. L. So, has created a detailed picture of the spatial layout of the city and the stages of its growth (So, 1991, pp. 95–131, 2000, pp. 161–185). We have summarized So's 1991 description elsewhere (Pearson *et al.*, 2001, pp. 187–190). The city is situated on the bank of the Jin River, which flows into Quanzhou Bay, a broad body of water with several coves and protecting islands. The river, now heavily silted, was deep enough in Song times for large ships to navigate upriver from Quanzhou to Nan'an. Originally square in shape, by the tenth century the city had three concentric walls and had assumed an irregular outline adapted to local topography. Outside the outer wall was a moat. To the south a flanking wall was built in 1230 to protect the commercial sector which had grown up outside the city. Civil offices were located in the inner areas around the Yacheng Wall, while branch taxation offices and the office of the superintendent of maritime affairs were located along the river bank. While official temples, such as those of land and grain and the temple of the city god, were situated near the center of the city, Buddhist temples were more dispersed, and foreign temples lay outside the city gates. The city is thought by So to have had a population of about 200,000 people in Song times (1991, p. 100).

The Fuhoushan Government Building Excavations

No excavations of the buildings of Quanzhou's administrative center in the Song and Yuan periods have been undertaken. However the excavations in 1979 at Fuhuoshan (the hill behind the government offices) yielded remains from three cultural layers—Tang to Five Dynasties, Song to Yuan, and Ming to Qing. The Song layer was by far the thickest and richest, yielding several thousand sherds (Chen and Zeng, 1983). Some architectural materials such as bricks, tiles, tile ends, and lion shaped roof finials were recovered, but most of the materials were sherds of ceramic vessels. These came from local kiln sites of Dehua, Cizao, Tingxi, Tong'an, Dongmen, and Anxi. In addition there were ceramics from the Shuiji kilns of Jianyang, Fujian; Longquan, Zhejiang; Cizhou, Hebei; and Jizhou and Jingdezhen of Jiangxi.

The very substantial numbers of Jiangxi ceramics suggest to Chen and Zeng (1983) that these wares were shipped overland to Quanzhou for overseas export and also for official use.

RELIGIOUS SITES

Of the many religious sites in the Quanzhou area, a few have been extensively described and one, a mosque, has undergone formal excavation. The details of these few sites convey a strong impression of the wealth of materials to be studied in the future.

The Kaiyuansi Temple

The most prominent Buddhist temple in Quanzhou, the Kaiyuansi, was first built in 686. No excavation within the temple compound has yet been published although some papers on specific monuments have appeared in archaeological journals (Lin, 1958, 1959). Its current area is 260 m $\times$ 300 m.

Much of the temple complex was burned in the rebellion of 1357–66 (Wang, 1983, p. 57), rebuilding taking place in the Hongwu and Yongle reigns of early Ming. Lin states that the stone foundations and pillar bases seem to date to Tang and Song while the style of the wooden superstructures shows that they were built in the Ming and Qing (Lin, 1959).

A number of monuments within the precincts give some indication of the power of the temple and its international role. Many or most of these are pre-Yuan in date. Two stone square pagodas in Brahman style were built in 1145 (Fig. 4). Similar pagodas have been found in the outlying areas of Tong'an and Hui'an (Lin, 1959, p. 45). Other small pagodas, including nine hexagonal examples in the huge plaza in front of the main hall, are of Song date. Three columns with inscriptions are also located in this area. One, 3.6-m high with an octagonal top, is Song, while two others, broken, are late Tang and Song in date. At the rear corridor of the Daxiong Baodian (Great Treasure Hall) are a pair of square columns which have inscriptions of myths and stories of ancient India, which appear to have been brought from some other site. These are discussed in the section on Hindu sites, below.

The east (Zhen Guo) and west (Ren Shou) five storied stone pagodas were built in 1238–48 and 1228–37 respectively, replacing earlier wood and brick structures (Fig. 5). The East Pagoda, 48.24-m high, has greenstone base panels decorated with human reliefs, while the west pagoda, 44.06-m high, sits on a white granite base. Demieville, in his analysis of the iconography, noted the distinctiveness of the narrative panels carved in soft greenstone (diorite), which contrasts with the hard granite of the upper stories. The construction details imitate wooden pagodas, but the central core is solid stone, which has resisted very strong earthquakes,

Fig. 4. Square pagoda in Brahman style, courtyard of the Kaiyuansi, Quanzhou.

such as the 1604 quake, estimated to have been of magnitude 8.08. Ecke and Demieville note that the architecture is of a local Song style (Ecke and Demieville, 1935, p. 7). The Shanmen Gate of the Nanshansi, in Zhangzhou, Fujian, was noted to have been based on similar principles (Ecke and Demnieville, 1935, p. 9).

Fig. 5. The Ren Shou (west) Pagoda, Kaiyuansi, Quanzhou.

Each pagoda is decorated with 80 panels with life-size figures carved in middle relief. The main motifs are "Patriarchs and Arhats, real or imaginary monastic portraits, and a series of Bodhisatvas and Guardians" (Ecke and Demieville, p. 11). Originally the 40 outer and inner niches of each tower were filled with sculptures

in the round. However only two were left when Ecke undertook his field survey of 1927–28, and they were not in situ. Ecke speculated that some stone sculptures of Arhats or Patriarchs found in Zhangzhou might have originally belonged to the Kaiyuansi.

The Chongfusi, the second of the three great Buddhist temples of Quanzhou, retains the Yinggengta, a 13-m tall, octagonal seven storey pagoda of Northern Song construction. This is the oldest stone pagoda in Quanzhou. The temple burned in 1345 and was rebuilt in Ming and Qing times. The entire temple, with the exception of the pagoda, was rebuilt in the 1990s. The third great temple, the Chengtiansi, retains a monumental Buddhist column (*jingchuang*), of Song date.

Other stone pagodas were built in prominent locations around Quanzhou Harbor, such as the Stone Lake Pagoda (Shihuta), which stands at the entrance to the harbor (Ecke and Demieville, 1935, p. 4). The great pagodas and bridges of Quanzhou display the remarkable local tradition of granite architecture unique to the region.

Religious Sites on Qingyuan Shan

On the slopes of Qingyuan Shan, several kilometers to the north of the city, are a number of important relgious sites including a colossal granite statue of a Daoist deity, which may have been part of a Daoist complex (Fig. 6). Also, there

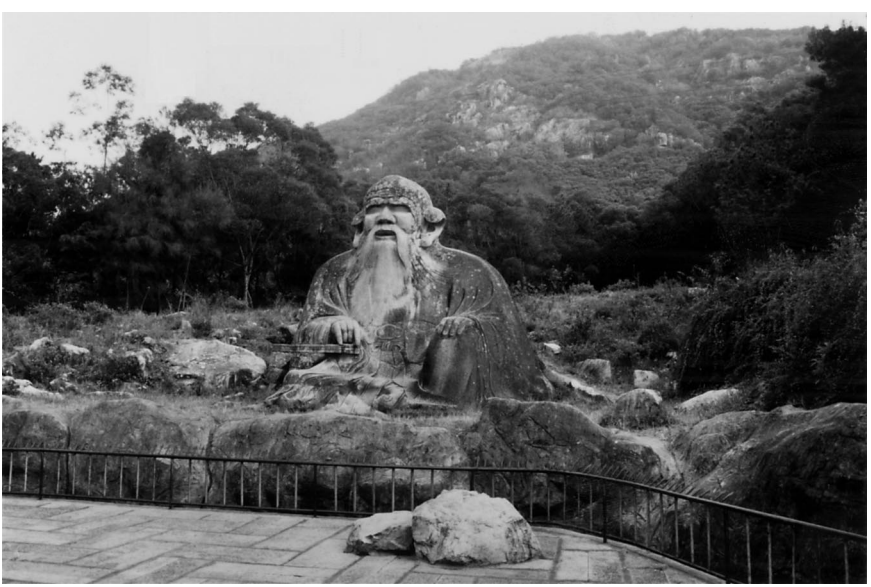

Fig. 6. Colossal granite statue of Daoist deity, Qingyuanshan, Quanzhou.

is an important stone Buddhist triad shows stylistic links to the sculptures found at Feilai Feng near the Lingyinsi Temple in Hangzhou. The Feliai Feng carvings show the spread of Lamaist Buddhist ideas which came with the Mongol conquest and imperial patronage of Tibetan Buddhism (Swart, 1987).

Mosques

Six mosques have been identified from stelae or inscribed fragments by Zhuang and Chen (Zhuang and Chen, 1980). Built by groups of believers from different regions of western Asia, they were badly damaged in the decade of turmoil from 1357 to 1366, when destruction was widespread (Fujian Sheng Bowuguan, Quanzhoushi, 1991b, p. 384). The location of the Shengyousi was confirmed by a test excavation in 1979 in which Song remains were found about 2 m below the present ground surface (Zhuang and Chen, 1980, p. 5). This mosque is referred to as the Ashab Mosque by Chen Dasheng (Chen, 1984). A second mosque, the Qingjingsi, located at the southern gate of the Southern Song city, has been identified through a stela with Chinese inscription, describing its rebuilding. This stela was found in the Shengyousi. The first builder of the Qingjingsi came from Siraf, on the Persian Gulf.

The third mosque, the Yemen Mosque, was erected at Jintoupu, outside the Tu (Tonghuai) Gate, in the Song. In 1940, when the Tonghuai Gate was being dismantled, a diabase stela with an Arabic inscription was unearthed. On one side was a quotation from the Koran, while on the other, a dedicatory inscription mentioning that the donor was from Yemen. Zhuang and Chen propose that this stone was the lintel over the primary door of the mosque, which has since been called the Yemen Mosque (Zhuang and Chen, 1980, p. 7). The style of the inscription, termed *kufa* or archaic, suggests to Zhuang and Chen that the mosque was constructed before the twelfth century. Fragments of tombs and stone columns were also found in the 1950s near Jintoupu.

Another lintel with a dedicatory inscription to the "Mohammed Mosque" was recovered from under the Southern Gate. The dates of construction and destruction of this mosque are not clear; however, the provenience of the lintel suggests that this fourth mosque was near the Southern Gate and was destroyed at the end of the Yuan. The lintel bears an inscription that the mosque was rebuilt by Naxide (Nakhid Asmar al-Mushai al-Din) in 1322 (Chen, 1984, p. 26).

Two fragments of a stone lintel with Arabic inscription on both sides are thought to belong to a fifth mosque located outside the East Gate at Dongtou Xiang. The stela is thought to have been found outside the East Gate, where more than 20 Islamic tombstones and a dozen stone tombs were found (Zhuang and Chen, 1980, p. 9). A sixth inscribed lintel found at the bottom of the northern wall of the Mingshantang of the Shengyousi appears to have come from an unnamed mosque of about the same size as the Shengyousi. The location of this mosque is not known.

The Shengyousi or Ashab Mosque is the only surviving mosque in Quanzhou. Two inscribed stone tablets occur in the mosque. One, in Arabic and located at the north (rear) wall of the gate tower, states that the gate tower was first built in 1009–10 and rebuilt in 1310–11. The second inscription, in Chinese, appears on a stone tablet built into the wall of the existing mosque. It is based on the historical account of the early building and rebuilding of the mosque written in 1350 by Wu Jian. The actual stela and its inscription date to 1507. There are also inlaid stone inscriptions from the Koran in the gate structure.

In 1983, the Shengyousi was refurbished with state funds and the Mingshantang, originally built in 1567, was rebuilt. At that time eight gravestones and two carved lintel fragments (one of which may indicate a seventh mosque) which had been buried in the mosque area or incorporated into its walls, were recovered. Most notable was No. 2, the tombstone of the son of the Persian prime minister whose father was killed in 1312. The son followed Persian traders to Quanzhou and died there. Two other tombstones, Nos. 3 and 4, belonged to individuals from Tabriz, while No. 6, dated 1271, belonged to an elite person (*khan*) from Khorazm. An undated tombstone belonged to a woman from Nabrus, in the Eastern Mediterranean (Wu *et al.*, 1986).

Twenty-one 5 m $\times$ 5 m units were excavated inside the Fengtiantan, also referred to as the Ceremonial Hall, in 1987. The excavations, sponsored by the Fujian Provincial Museum, revealed 11 layers, (the eleventh being a sterile basal layer), which they grouped into six cultural phases from Song to Qing (Fujian Sheng Bowuguan, Quanzhoushi, 1991). It is significant that four phases existed prior to the initial construction of the Ming building, portions of which stand today. Huang states that the sublayers of the stratigraphy suggest that the Fengtiantan was rebuilt three times in the Song, three times in the Yuan, and four times in the Ming (Huang, 1992, p. 88). Earlier versions of the Fengtiantan were larger than the present one. There appear to be no historical documents describing the buildings of these phases, except for the inscriptions noted above. In all layers, evidence of burning (charcoal, ash, and burned clay) has been recovered, suggesting that the building suffered damage from fire as well as from floods and earthquakes.

Phase 1, dated generally to the Song Period (Layers 9 and 10, more than 2 m below the present ground surface) yielded Song ceramics, small areas of red brick paved floors, and stone slab pathways. Three round stone columns were found in this layer. Phase 2, comprising Layer 8, yielded architectural features dated to the Late Song and Early Yuan and identified as part of a raised platform building and gate tower of the Shengyousi Temple. Phase 3 (Layers 7A–D) is composed of four cultural sublayers and three distinctive paved floors thought to be the site of Yuan dynasty wooden houses which coexisted with the platform structure and gate tower and may have been an auxiliary part of the mosque. Yuan ceramics were recovered from the layers of this phase (see below). There is a thick layer of ash on top of these layers, suggesting that abandonment was probably linked to the destructive wars at the end of the Yuan. Phase 4 (Layers 5 and 6), of late Yuan

date, included 11 pillar bases, sections of wall foundations and associated ditches, thought to indicate a wooden building on a raised stone platform.

The roofless reconstruction of the Fengtiantan standing at present has a mihrab-like shape with an alcove in the west wall. The distinguishing feature of the Fengtiantan is the configuration of 10 large column bases and wall foundations, which date from Period 5. The excavators state that this building is no earlier than Yuan. More likely it was built a short time after the 5th year of Yongle (1407). The portions which remain today were built in the Ming Dynasty.

Ceramics found in the cultural layers range in date from the Song period to the Qing Dynasty. Bowls and plates are the most numerous, while Yuan materials are more numerous that those of Song date, confirming the intensity of activity during the Yuan. Few, if any of the ceramics appear to come from outside of Fujian, except for a Longquan type twin fish plate, which may have been produced in Zhejiang, but could also be a Fujian product.

While the range of variation of glazes is difficult to establish from brief written descriptions, the grey body, *yingqing* (pale bluish white), greenish grey, celadon, thick yellow and brown glazes with a propensity to peel, all appear to indicate wares made locally in Fujian, such as Nan'an, Cizaoshan, and Jianyang. Cylindrical bottles, of the type found in Penghu, are represented, as well as a pottery "bank" or money box, containing coins (see below). The vessel forms, including bowls, plates, small cups, spouted pots, and bottles, belong to utilitarian vessels of daily use.

Of a total of 58 coins, 44 come from an earthenware "bank" found in Layer 7B, which contained a wide range of coins from the eleventh and twelfth centuries, including the earlier and ubiquitous Kaiyuan Tongbao. Layer 7A yielded one coin of Yuanyou Tongbao (1086) date, while Layer 5 yielded one each of Shunhua Yuanbao (990), Zhaosheng Yuanbao (1094), and Zhongning Zhongbao (1228). The earliest possible date of the bank is 1111. There seems to be a trend of possessing coins for long periods after their minting, and so a general date of the twelfth century would be acceptable.

In Layer 3B and the layers above it, 10 coins were recovered, including one Tianxi Tongbao (1017), one Yuanyou Tongbao (1086), as well as coins from the Qianlong (1736–95) and later reigns.

Hindu Sites

Over 300 Hindu architectural and sculptural fragments have been identified in Quanzhou since they were first discovered in 1933 (Guy, 2001). Since many fragments were found in the vicinity of the Tonghuai Gate in the building material of the city wall constructed in the Ming, it is likely that there was a Hindu temple in the southeastern part of the city; the exact location is not clear. Also of great interest are two pillars and the basement frieze of the main hall of the Kaiyuansi, the Daxiong Baodian. Early field work by Gustav Ecke led to an article by Ananda

Coomaraswamy (1933). Coomaraswamy concludes that the pillars are careful Chinese copies of wooden originals which were made by Indian craftsmen. They are chamferred to a 16-sided form in sections alternating with cubical blocks bearing medallion panels, some of which have illustrations of familiar themes of Hindu mythology, while others have floral patterns, such as lotus, rose, and tea flowers, which are Chinese motifs. Examples of Hindu themes are Vishnu riding on a garuda, the release of the king of elephants, Krishna tied to the mortar between two arjuna trees, and Vishnu seated in a lotus pedestal with two Sakhti on lotus petals. Two more pillars are built into the rear building of the Tianfeigong, the Temple of Tianhou, the Heavenly Consort. These are likely the same as the pillars identified by Coomaraswamy from the Daoist Hailongwang Temple in Quanzhou (Coomaraswamy, 1933, pp. 9–10).

In the 1930s a "cult image of Visnu" 1.15-m high, holding a conch, disc, and mace, was found at Nanjiaochang, Quanzhou (Guy, 1994). Two other carved stone pieces with Saivite subjects were also discovered in the 1930s, in a small shrine near the Kaiyuansi in the northern part of the city. One shows an elephant making an offering of a lotus to the linga, while the second shows a cow offering milk to the Sivalinga and licking it. Guy proposes that these pieces must have come from a separate Saivite temple, and that the patrons must have come from Thanjavur, the Chola capital served by the port of Nagappatinam. Guy concludes that the Quanzhou Hindu remains are the legacy of temples conceived in the South Indian Dravidian style of the late Chola Period (thirteenth century) (Guy, 2001).

The discovery in 1956 of an inscription in Tamil and Chinese dated April 1281 confirmed the presence of a Tamil-speaking merchant community in Quanzhou. The inscription consists of six lines in Tamil script, with half of the last line in Chinese characters. The Tamil letters are poorly written and often erroneous, suggesting to Guy that the stone carver was not literate in Tamil. The dedication asserts that a Siva image was installed in April 1281 with the imperial authority of Chekachi Khan, possibly Kubilai Khan's son, Chimkin. Possibly it was installed in an existing temple (Guy, 2001, p. 296). Guy notes that the dedication of the Hindu temple devoted to Siva in April 1281 was preceded in February of that year by the sending of a Mongol envoy to India from the port of Quanzhou (Guy, 1994, p. 300). In addition, a relief of a seated Durga was found in 1986 at the Xinji Pavilion in Jinjiang near Quanzhou (Guy, 1994, p. 296). Further field work in both Quanzhou and Tamil Nadu has added important information on the relations of Quanzhou and South India (Guy, 1994, 2001).

Huabiao Manichaeist Temple, Jinjiang County

A Manichaean temple built during the Yuan Dynasty is located at Huabiao Mountain, in southwest Jinjiang County adjacent to Quanzhou (Fig. 7). It contains a stone representation of Mani with a height of 154 cm, backed by a gold-plated stone halo with a diameter of 168 cm (Fig. 8) (Lieu, 1980, p. 81). Recorded in the

Fig. 7. The Huabiao Manichaeist Temple, Jinjiang County, Fujian.

Fig. 8. Image of Mani, Huabiao Manichaeist Temple, Jinjiang County, Fujian.

1920s by Wu Wenliang of Xiamen University (Wu, 1957), the shrine looks like an ordinary Buddhist temple and was used for Buddhist practice in recent times. Built entirely in granite, it has two storeys with the main hall for worship on the ground level and living quarters for a very small number of priests on the upper floor. The Huabiao site is the only Manichaean temple to survive anywhere in the world, all others having been destroyed through centuries of persecution and the extinction of the religion (Lieu, 1985, pp. ix, 312–313).

An inscription in the courtyard exhorts worshippers to repeat "Mani, Buddha of Light, the most pure Light, the great and powerful wisdom, the highest and unsurpassable truth" and dates the inscription the 9th month of the Zhizhou year of the Zhengdong period (1445) (Lieu, 1980, p. 81). The statue in the shrine shows perceptible iconographic differences from a Buddhist sculpture. For instance, the statue stares straight at the viewer, instead of looking downward, and is bearded, with no hair on its head. The birthday of the "Buddha" in the hall is given as the 16th day of the 4th month whereas Quanzhou people celebrate the birthday of the Buddha on the 19th day of the 2nd month of the Chinese Year (Lieu, 1980, p. 81). Lieu believes that Manichaeism came to Quanzhou via overland routes rather than by sea and notes that persecution of Manichaeism decreased but did not disappear under the Mongols, there being about 700,000 families of believers, who were confused with Christians by Marco Polo. The religion had its admirers among officials and scholars for its asceticism (Lieu, 1980, pp. 80, 83).

TOMBS AND TOMBSTONES

Tombs and tombstones provide evidence of the communities living in Quanzhou. Most of the gravestones were gathered and used for the refurbishment of the walls and gates in the late fourteenth and fifteenth centuries. Since they are out of their original context, it is not possible to link their attributes to places within cemeteries or to define distinctive local status or ethnic groups with a cemetery, as archaeologists often do with burials. However they do provide fascinating evidence for the religious and cultural diversity of the city.

Islamic Tombstones and Inscriptions

In addition to the mosques of Quanzhou and their architectural stone carvings, ancient Islamic cemeteries have been preserved in a few cases. In others, the tombstones and portions of the burial structures have been recovered after cemeteries were destroyed at various times since the fourteenth century. The Xiamen University Museum and the Quanzhou Maritime Museum both have large holdings of such relics (see Chen, 1984; Chen and Kalus, 1991; Wu, 1957). The historic mosques and tombs of Quanzhou have served as important symbols of

cultural identity for members of the Hui minority, since at present the tombs provide evidence that modern groups may be descended from foreign Muslims (Gladney, 1987). Such descent has implications for state recognition of minority status, and in some instances can create economic advantages.

Of the 149 gravestones examined by Chen Dasheng, 58 were of unknown provenience (Chen, 1984). Thirty six came from the Renfeng Gate area, either from the walls or from the gate, or as isolated finds in the vicinity. Twelve came from the Tonghuai Gate area, and eight from the walls of the Mingshantang of the Ashab Mosque, where they were presumably placed for safekeeping after they had been uprooted (perhaps more than once) from their original context. From accounts of destroyed cemeteries mentioned by Chen we can establish the location of some ancient cemeteries which clustered near some of the city gates, suggesting that the Muslim communities were located outside of these gates, rather than being concentrated in one location (Chen, 1984). Such locations are outside the Tonghuai Gate at Jintoupu (Chen, 1984, No. 38), Houlu Donghai No. 82), Fashimei Hill, (No. 91), Dongmujing (No. 92); outside the Renfeng Gate at Secuomei (No. 50), Xiacuo Hill (No. 89), Wailingshan (No. 98), Lingshan (No. 99), Yilupu (No. 106). Other locations are Jincuowei on the west slope of the Dongyue Hills in Quanzhou and Waitingdian outside the South Gate (No. 186).

The stone remains associated with burial can be grouped into four categories: inscribed gravestones with inscriptions concerning the deceased, grave covers, grave vaults or structures, and lintels from the cupolas thought to be constructed over the graves. Since most of the examples were not found in their original context, structural interrelationships are often conjectural. They were made mostly of a local hard, grey diabase, or occasionally, local granite. Rarely was limestone or a mixture of lime, sand, and clay employed. Inscriptions appear in ancient Kufic script, large and small regular script, and cursive, fancy, Persian, and square styles (Chen, 1984, p. xvi). While the inscriptions mention individuals from Yemen, Hamdan, and al-Malf in Turkestan, Khalat in Armenia, most of the individuals recorded are from Persia—Siraf, Shiraz, Jajarm, Bukhara, Khorazm, Khurasan, Isfahan, Tabriz, and Gilan.

Two inscriptions provide examples of acculturation. "The Gravestone of Ahmad" contains an inscription in Persian, Arabic, and Chinese indicating that the Ahmad family lived in Quanzhou for generations, that the elder Ahmad married a woman from Quanzhou, and that the younger generation became proficient in Chinese (Chen, 1984, p. 38). The Persian inscription shows the Chinese custom of indicating the age and date of birth of the deceased, details which are often missing from other Muslim inscriptions. On "The Gravestone of Official Daluhuachi of Yongchun County" the incomplete inscription indicates that the deceased was the county magistrate of Yongchun County (Chen, 1984, p. 46).

Carved stone tomb covers were fashioned to set over the oblong vault. Hollow or solid, they are stepped in 3–5 layers and decorated with lotus petals, cirrus

clouds, waves, sprays of flowers, or Arabic inscriptions. At the end of the cover stone there is often a full moon with cirrus clouds or an Arabic inscription. They are carved diabase or granite or may be fashioned from a mixture of lime, sand, and clay, with a gravestone at one end.

Wu proposed that a box- or altar-shaped tomb was used by Muslims, in Quanzhou, although none has been found intact (Wu, 1957, p. 40). The shape is similar to that of Quanzhou Christian tombs. It consists of a raised box-shaped structure with several registers and panels of decoration and pillar corners with an isosceles triangle shaped inscription stone set on the top.

A modified tomb type, termed the Chinese style altar-shaped tomb by Chen, combines the Muslim tomb and the indigenous Fujian turtle-back tomb (Chen, 1984). It has a long decorated and/or inscribed panel set in the front of the mound and a triangular inscription stone on top. The form is a mixture of Chinese and Islamic styles. Chen records six examples, one of which is dated to 1350. This could be a later type, showing the merging of two tomb traditions.

Thirty-nine examples of rectangular, decorated and inscribed stones thought to be facing stones on waisted altar shaped tombs or Chinese style tombs, are recorded by Chen (Chen, 1984, Figs. 157–195).

Chen proposed that some carved lintels come from cupolas over graves. While none of these cupola structures exist in Quanzhou at present, Chen postulates that they existed previously and have been destroyed. In some cases there is a decorative border with waves or meanders, very much like that seen on Yuan Dynasty blue and white ceramics. A broken granite lintel, 166.5-cm long, 93.5 cm-high, and 18-cm thick, with an intaglio Arabic inscription "Oh God," was found at Yunlu Village outside the Tonghuaimen Gate. Chen notes that if just one word were added before and after the present inscription, the length of the tablet would be over 4 m. Chen notes that ". . . no tablet of any grave or building discovered in Quanzhou so far could be compared with it" (Chen, 1984, p. 94). Yunlu was inhabited by Muslim Arabs in the Yuan Dynasty and was renowned for growing spice plants.

A sidelight on the extent of Quanzhou's maritime commercial connections in the thirteenth century is provided by the finding of an inscribed tombstone in the Muslim cemetery in Bandar Sari Begawan, Brunei, belonging to Pu Gong, (Master Pu) who had the official rank of Pan Yuan (Chen, 1992; Franke and Chen, 1973). The stone is dated to 1264 and is the earliest dated Chinese inscription in situ so far known in maritime Southeast Asia. It was made and carved in Quanzhou and shipped to Brunei. Chen concluded that another Brunei tombstone, of a Brunei sultan, was carved in Quanzhou around 1301, in identical writing style to the tombstone of Fatima bint Naina Ahmad, who died in Quanzhou in 1301. This tombstone carries a date earlier than the dates of the sultans recorded in the Genealogical Tablet of the Sultans of Brunei, the first of which dates to 1363. The tombstones of the later sultans are inscribed in Jawi except for Arabic quotes from scripture.

The Lingshan Tombs

This site, in its original location, consists of two slab-covered, belowground, tombs. On the slabs are two identical granite pagoda-shaped tomb covers placed side by side. Chen notes that the style is quite different from those of the Yuan Dynasty (Chen, 1984, p. 95). The cemetery is open to the south, while on the other three sides there is a semicircular pillared colonnade, dated to pre-Yuan times (Chen does not provide specific reasons for this dating). The graves themselves are protected by a Chinese style pavilion erected in 1962. At the site there are five stelae, dating from the Yuan to Ming Dynasties, noting the construction and refurbishing of the graves. Based on oral tradition, the tombs are said to belong to the third and fourth Muslim saints who went to Quanzhou early in the seventh century. Seven tombs of the Ding family were moved to Lingshan Hill in August 1980 from Luyuan Hill. Portions of the grave covers are original, while other parts of the grave structures have been lost. The Ding family, of the Hui minority, claim descent from the occupants of these graves.

Christian Tombstones

A group of tombstones collected at the time of the demolition of the walls of Quanzhou from 1938 to 1941 in anticipation of the Japanese invasion were reported by Wu Wenliang (Wu, 1957). Some have inscriptions in Syriac (Estrangela) script. Their content is not completely cipherable. Lieu indicates that they may be written in some Turkic language with some Chinese words in transliteration, all written in Estrangela script. He notes that many of the tombstones bear an elaborate motif of a cross on a lotus flower, the symbol of the Nestorian church in China, flanked by angels in flowing robes (Lieu, 1980, p. 73).

One inscribed tombstone appears to have been dedicated to Bishop Mar Solomon who came from the west to China in the 1280s. He led Nestorian monks in their prayers for Genghis Khan's son Tului, whose recovery was an important event for the Nestorians, who had been brought to China by Genghis Khan from Samarkhand and Buchara. From the inscription it is thought that he died in 1313. Lieu notes that it is extremely unusual to have one administrator for both the Nestorians and Manichaeans, who have a history of animosity in western Asia (Lieu, 1980, p. 73). There is a debate whether the carved stones belong to the Nestorian church (Church of the East) or the Francisan Church (Church of the West). Foster concludes that at least two of the stones are Nestorian while at least one is Franciscan. The others could be either Nestorian or Franciscan.

Foster provides photos and provenance, where known, of 18 carved stones with postulated Christian motifs. Dimensions vary, but some of the stones are about 1-m high. One of the stones shows a pair of wingless angels, recognizably Mongoloid in features, and adorned with earrings and apparently moustaches

(Foster, 1954, pp. 11–12, Fig. XI). They suggest Chinese workmanship for foreign patrons. One of the specimens had a date written in Chinese interpreted as February 25, 1324. However the main inscription on this specimen is in Phagspa script of Tibetan Lamaism, which has been used to transliterate Chinese words. Another specimen has an inscription which may be Syriac, "In the name of the Father and Son and the Holy Ghost," while yet another has an inscription the script of which has not been conclusively identified (Foster, 1954, pp. 13–14). At least two more decorated Christian stones have been illustrated by Moule (1940).

THE HARBOR, SHIPPING, AND SUNKEN SHIPS

Quanzhou's Harbor is described by writers of the thirteenth century as one of the largest in the world. Its muddy estuaries have already yielded the remains of two ships and evidence of piers. A deeply indented coastline surrounding the bustling port made it difficult for authorities to control the collection of port taxes.

Studies of the organization of shipping provide some context for the rich field of Quanzhou maritime archaeology. In his study of Chinese ships and overseas trade, Chen Xiyu (1991) notes that although there were many private traders in the provinces of Jiang, Huai, Min, and Zhe, the Fujian merchants were the most active. Chen states that prominent families invested in large commercial ships. Despite regulations prohibiting officials from engaging in trade, large investors protected each other and found ways to circumvent government regulations. He also states that in the Yuan, there were prohibitions against private trade on four occasions, but each prohibition lasted only 3–5 years (Chen, 1991, p. 53). The government sought to take more profit from foreign trade and set up trade offices such as the *Shibosi* in Hangzhou and Quanzhou. These offices provided government-owned ships, taking 70% of the profit and giving 30% of it to the traders. Very large ships, which carried their own militia for protection, were state owned. Song Xian (1988) reports that Ibn Battuta, who visited Quanzhou in 1342, recorded that the largest Chinese ships had up to 10 sails and carried over 1000 people, including 600 sailors and 400 soldiers; this very large type of ship was built only in Quanzhou (Song, 1988). Wang Zengyu (1978) states that the Southern Song established shipyards in Fujian and Guangdong in the Xiaodong Period (1163–89), but the state-run enterprises did not flourish whereas private shipyards did become prosperous in Zhangzhou, Quanzhou, Fuzhou, and Xinghua.

Cooperation between the government and private merchants took various forms. Chen (1991) mentions that the government recruited private ship owners, permitting them to carry as much as 20% of the whole cargo as private goods in exchange for liability for the entire cargo. In 1032 the government introduced regulations that ships over 36 m in length should contribute 1 year in three to coastal patrol, which drastically reduced their opportunities to make profits. Ships attempting to escape this obligation were severely punished.

Government policy toward foreign traders also varied. Around 1085 foreigners were allowed to convey tribute and to trade on Chinese ships. Shortly thereafter foreigners were not allowed on Chinese ships; in the case of a violation the entire cargo was confiscated. In the Yuan period, foreigners were again allowed on both official and commercial ships with the payment of certain taxes.

Li Guoqing (1989, p. 283) states that in the Song Period, south of the Yangtze, private shipyards flourished alongside state-run yards, and that private businesses in this region raised their own capital. The Song Royal Clan, who fled to Quanzhou in 1130 under pressure from the Mongol invaders who would eventually found the Yuan Dynasty, appears to have been involved as investors and traders. Fu Zongwen interpreted the role of the Song Royal Clan in maritime trade in the following way (Fu, 1989). The Nanwaizongzhengsi, the Agency for the Southern Branch of the Royal Clan, was engaged in maritime trade up to the end of the Song period. The lower ranked members of the royal clan had to engage in trade to maintain themselves, while the powerful branches which dominated the Nanwaizongzhengsi in Quanzhou could override state policy, use state soldiers under their command as laborers, and forcibly expropriate ships from merchants to make huge profits. While members of the royal clan received a government living stipend and were in principal restricted by the government from trading activity, they evaded these prohibitions. According to Fu, during the Southern Song the members of the Southern Branch of the Royal Clan at Quanzhou increased from 300 to 2300 (Fu, 1989, p. 81).

Fu argues that Quanzhou had three groups of sea merchants: the indigenous Fujian group, the Nanwai group, and the foreign group. The indigenous group flourished in the late Northern Song and the early Southern Song, declining in the mid-Southern Song, to be replaced by the foreign merchant group. The Nanwai group survived to the end of the dynasty with its special power and connection to the central government. Since the scale of its operation was small in comparison to the other groups, few textual accounts describe its activities.

Yang Lien-sheng suggests that the Mongols may have extended special privileges to merchants because the Mongol ruling classes were very much dependent on the huge profits brought by the Uighur and Chinese merchants (Yang, 1979, p. 190).

The Houzhu Ship

One of the best preserved ocean going sunken ships in East Asia was discovered at Houzhu Harbor, Quanzhou Bay, in 1973 and excavated in 1974 for a period of $2^1/_2$ months. Most of the information in this section is taken from the 1975 summary (Quanzhou Songdai Haiquan Fajue, 1975) unless otherwise specifically noted.

Houzhu is located about 10 km to the southeast of Quanzhou City. Its location, with direct access to the sea but enclosed by low mountains, gives it one of the best

natural harbors in the Quanzhou region. The Houzhu area is known from historical documents to have been an important port at the end of the Song and early Yuan periods. The ship was located at the edge of a small channel, the major portion of the hull being deeply buried in silt. A deeply buried foundation consisting of stone slabs and pine posts, located 135 m northeast of the wreck, has been identified as the Song-Yuan period stone pier of Houzhu. The depth of the silt accumulation above the beach surface on which the boat lies is 2.1–2.3 m.

The wreck was 24.2-m long and 9.15-m wide. Of the fore section of the ship, the bow and a portion of the garboard are preserved. The hull is V shaped, wide and short, with a pointed bow and square stern. It is triple planked, and the garboard is double planked. Calculation made from the length, width and depth of the hull suggest a displacement of over 200 tons. Green estimates a larger displacement of 380 tons (Green, 1983, p. 253).

The pine keel was 17.65-m long, 42-cm wide, and 27-cm thick. It was composed of two pieces, with a scarfing joint of only 34 cm. The camphor bow post, connected to the keel section, was 4.5-m long. At both ends of the keel, where the joints were made, there were holes for protective charms. The fore holes had iron coins inserted into them, while the latter had Northern Song coins. In both the fore and aft area there was a hole approximately 11 cm in diameter and 2 cm in depth, into which was placed a bronze mirror with undetermined obverse decoration and without handles or knobs. The arrangement of the upper group of protective charms represents the constellation of Ursa Minor while the lower portion represents the full moon. The practice of making these constellations continued in Fujian shipyards until the mid-twentieth century.

Carvel and clinker design can be seen in the cedar hull, showing some similarities with the Sinan ship found near Mokpo, Korea (Green, 1983, pp. 254–255). The planks were laid down in a four-tier installation from the keel to the edge of the deck in 14 rows. The hull is double planked from the 1st row to the 10th and triple planked from the 11th to the 14th and is divided by 12 bulkheads 10–12-cm thick into 13 compartments, which range from 1.84 m to 0.8 m in length and from 9.15 m to 4 m in width. All of the bulkheads except for the first and last had a waterway cut in the lowest plank. Broad iron brackets were used to attach the bulkheads to the inner hull planking to reinforce the hull structure and countersunk iron nails with caulking were used to fasten the layers of planking. It is thought that the ship may have had three or more masts. A square section with dimensions of 70 cm $\times$ 34 cm cut out of the bulkhead between No. 5 and No. 6 compartments must be the socket for placing the mast. No. 1 compartment contains the foremast step and No. 6 compartment contains the mainmast step, both steps being made of camphor wood. Two masts are confirmed by the finding of the steps, and a third mast is believed to have been located near the stern. The transom, also of thick blocks of camphor wood, was partially preserved. The rudder could be raised or lowered. A portion of a winching device possibly used for raising the sail or rudder was found in Compartment No. 11.

The authors of the report concluded that the boat might be classified as a *fuchuan* or ocean cargo ship, which had advanced features such as V-shaped hull construction, multiple masts, triple planking, numerous compartments, and large displacement. There were no signs of repair, indicating that the ship was newly constructed.

The structures above the deck were not preserved. Some attempts have been made to reconstruct the missing upper portions of the ship (Quanzhouwan Songdai Haichuan Fuyuan Xiaozu, 1975). It is thought that the long distance cargo ship would have had about 50 crew members. They carried a year's supply of grain, kept pigs, and brewed spirits on board. It is proposed that the bow section was arranged in two levels, and the stern in three levels (which joined up with the main deck to make a total of four levels). In the bow section, the first level was the deck of the bow cabins and the second level was open air, where the anchor was weighed and lines wound. In the aft section, the first level housed the living quarters of the captain and officers, the second featured the helm and an area where food was cooked, and the third deck was used for standing watch and winding the sail. The main mast is postulated to have been 28.5-m tall, while the bow mast was 21 meters. The sails are thought to have been made of bamboo matting and cloth, although no cloth has been recovered. The anchors were compound, with a longitudinal stone component 6.6 m in maximum length and two transverse wooden pieces which dug into the sea bed. An anchor was found at Fashi, the place from which Marco Polo is said to have set out for Persia with a Mongolian princess, while a second example was found at Jinmei Village on the bank of the Luoyang River which flows into Quanzhou Bay. The former is 2.32-m long with a weight of 237.5 kilograms while the latter is 2.88-m long with a weight of 385 kilograms (Qin, 1990). The stone anchor pieces have central grooves. They are similar to examples found in Hakata Bay, Japan.

Keith and Buys found that the Houzhu ship is as large as any merchant vessel known from the same period in the west. In their opinion, the most striking characteristics of the hull are its pointed bow, deep V bottom, true keel, and stern rudder (Keith and Buys, 1981, p. 124). Keith and Buys (1981, p. 130) state, "It was, perhaps, not until the middle of the fifteenth century that seagoing European ships, notably the carrack, acquired the complex set of technological features already evidenced in the Quanzhou ship at the end of the thirteenth century: transom stern, axial rudder, large size and capacity, multiple masts and multiple layers of hull planking accompanied by a gradual shift to carvel joinery."

The Houzhu ship provides clear evidence of a "hitherto unsuspected tradition of seagoing ship construction in China which was neither adequately documented in literary references nor unambiguously depicted." (Keith and Buys, 1981, p. 131). Manguin proposes that the clearly V-shaped hull, solid frame and light, nonstructural bulkheads, and cargo hold that are not water tight are features that are assumed to be un-Chinese, but are shared with Southeast Asian ships (Manguin, 1988, p. 7).

Fragrant wood (*xiangliao*) was the most abundant of the cargo, being found in all compartments. A total of 2350 kg (not fully dehydrated) was recovered, including lakawood, sandal wood, and garrowood. About 5 liters of black pepper were collected from the sediments in the cabin. Other medicinal products included betel nut, frankincense, ambergris, cinnabar, mercury, and tortoise shell.

Thirty-three wooden tags and 63 wooden slips used to identify different types of cargo was recovered. Fu divided the wooden tags into five categories (Fu, 1989). Twenty-six percent of the tags bear the term Nanjia, indicating to Fu that the ship was a merchant vessel owned by the Agency for the Southern Branch of the Royal Clan, and jointly operated by individual lineages of the royal clan. The tags contain the term *jun* which is part of a title conferred on members of the Song Royal Clan (see also Chaffee, 2001). Other tags bear the titles of officials of the Agency (Zhuhuguoji and Chousi) while tags including the term *gan* in the inscription may refer to either civil service personnel or private servants. Fu has also identified tags of crew members, passengers, and local businesses. Fu concludes that the Nanwaizongzhengsi was engaged in maritime trade up to the end of the Song Period.

Opinions differ on the interpretation of the tags, however. Using textual accounts of late thirteenth century maritime trade policies, Zhuang argues that the shipowner owned 80% of the cargo, which was not tagged (Zhuang, 1991). The remaining 20% of the cargo belonged to the crew members and merchants and was tagged for identification. Variations in tag shape are linked to rank. The square tags were used by important persons such as the three assistants of Pu Shougeng, who were managers of the ship. Rectangular tags, according to Yuan documents, were used by the crew, passengers, and people who ordered goods to be purchased, such as the Southern Branch of the Royal Clan. The name Yali (Ali) appears on tags. Zhuang proposes that Muslims travelled on the ship, adding weight to the idea that the owner was Pu Shougeng, also a Muslim. Zhuang states that the Song Royal Clan did not have enough capital to own the ship and arrange trade missions. Yet another interpretation of the tags is presented by Wang, who argues that the term *gan*, appearing after family names, refers to estate managers who were commissioned by elites to undertake overseas trade on their behalf (Wang, 1978). Each of these interpretations leads to very different ideas on the nature of overseas trade.

A total of 504 bronze coins was recovered, including 33 Tang coins, 358 Northern Song coins, 70 Southern Song coins, and 43 undated fragments in all of the compartments. Ceramics included 56 vessels which could be restored. Most were found in the fore and aft sections. Glazes included greenish yellow, celadon, black, white, brown, and dark brown. Functional types included bowl, jar, urn, alms bowl, vase, cauldron, pot, box cover, and kendi (low spouted pouring vessel). The majority were bowls, urns, and vases. Celadon bowls included a bowl with outflared mouth, 20 cm in diameter, with crackling in the exterior glaze and wave

and cloud pattern in the interior. One lotus petal decorated bowl was recovered. A black glazed *jian* ware bowl from Shuiji, Jianyang, of Song date, was also found.

Seven narrow mouthed earthenware urns were recovered. With their glaze color ranging from bluish yellow to brown and purple, these jars may have contained flaming oil used in naval combat. It was first used by merchant ships as a combat device, and later adopted by the navy and army as military equipment (Liu, 1993). Other postulated uses of these bottles include storage for gunpowder, rose perfume, mercury, or wine. The earthenware bottles are stylistically similar to examples found in the Song cultural layer of the Kaiyuan Temple in Quanzhou. They have also been recovered from the Penghu Islands (Chen, 1994; Ye *et al.*, 1998).

Two spouted vessels or *kendi* with straight mouth, long neck, shallow body, flared exterior rim, and contracted interior rim were found. Fragments of jars, pots, alms bowls, cauldrons, and three-footed incense burner were also recovered.

One broken bamboo ruler with intervals of 2.6 cm, appears to have had 10 intervals and a total length of 26 cm, close to the standard Song unit. Woven bamboo containers, rattan hats, and rope fragments were also recovered. Metal fragments included 4 rim fragments of a bronze alms bowl. Twenty wooden Chinese chess pieces were recovered as were fragments from a Song printed book. Over 2000 cowrie and other assorted tropical sea shells were recovered, as well as fragments of coconut shell and other seeds. Pig, sheep, dog, rodent, and fish bones were also recovered.

No absolute date can be assigned from the materials at hand. On circumstantial evidence the wreck has been dated to the late thirteenth century up to the beginning of the Yuan Dynasty (1279). This dating is based on the V shape of the hull. Song ships of this type have a ratio of 10–1 between the width of the deck and the bottom of the hull; this ratio is seen on the Houzhu ship. The Song celadons found in the cabin, with lotus petal and incised petal decoration respectively confirm the general date. Similarly the blackware bowl from Shuiji is dated to the Song Period, and the white earthenware boxes come from kilns of the same time period in Quanzhou or Dehua. No coins later than Xianchun Year 7, minted during the reign of Emperor Duzong (1265–74) of the Southern Song were found, indicating that the earliest date for the sinking of the ship would be Xianchun 7 (1271).

Zhuang (1991) concludes from the style of the ship that it was built locally and it sank between 1256 and 1279. He concludes that it must be related to a powerful local personage at the end of the Song, and that it was privately owned by the Pu family, probably Pu Shougeng. Pu is known to have been a very powerful local merchant for decades before his appointment to the position of Trade Superintendent some time after 1266. He also believes that the ship sank during the 1277 attack on Quanzhou by the general, Zhang Shijie, while it was unloading at the pier. The fact that fragments of one porcelain vessel were found in many compartments suggests that there was violence aboard the ship (Zhuang, 1991, p. 352).

The Fashi Ship

A second ship was found at Fashi, between Houzhu Port and Quanzhou, in 1976. Previously Song/Yuan porcelain sherds were discovered in the region, as well as pieces of ships planks, sections of ropes, and a later hoard of Spanish silver (Zhongguo Kexueyuan, 1983). Four test pits were devoted to exploring the hull. No structures from the portion of the ship above the hull were preserved. The ship, also of *fuchuan* type, with a pointed bottom and keel, is similar to the Houzhu ship; however, the hull was single planked, with a different arrangement of the planks. Its estimated length is 23 m with a capacity of over 120 tons. It is slightly smaller than the Houzhu ship, with fewer compartments. Nearby was a portion of a Song/Yuan dock, constructed of stone slabs on the top, pine timbers in the middle, and a pebble foundation on the bottom. Ceramics found in the ship include five small mouthed bottles from the Cizao kilns, 12 bowl fragments including celadon from the Guiyao Kiln of Anxi and the Tingxi Kiln of Tong'an, *yingqing* ware from Jingdezhen, and white ware from Dehua. On the basis of these ceramics, the ship was constructed and used in the Southern Song Period.

TRAFFIC ROUTES—THE LUOYANG BRIDGE

Quanzhou was linked to its hinterland by the Jin River, which served as a shipping route for ceramics, and by an extensive network of roads and bridges, which have been studied by Clark (1991) and So (2000, pp. 131–160). Possessing an excellent seaport with deep water anchorage, it was also equidistant from two important coastal sub centers, Zhangzhou and Xinghua, each approximately 100 km from Quanzhou.

Of the many stone bridges of Song date in the Quanzhou area, the greatest bridge, built in 1053, is the Luoyang Wan'an Bridge, 10 km east of the Eastern Gate of Quanzhou. Its present length is 834 m and its width 5–7 m. It is the first stone beam bridge to be built at a salt water port in China. Associated with the bridge are two pavilions, numerous shrines, pagodas, statues, and inscriptions. One shrine is dedicated to Cai Xing, the magistrate of Quanzhou Prefecture during the time of the completion of the bridge and its opening ceremony, and the other to Yibo, one of the monks who were responsible for the construction. Innovative construction techniques include the building of an underwater causeway of large stones for the foundation; the cultivation of oysters along the base of the bridge to consolidate the boulders against tidal action (Liu, 1993, p. 97) and the use of the tide in the placement of the stone planks, which weigh over 20 tons (Chen and Zhuang, 1990, p. 155).

Among the individuals known to have sponsored the construction of 100 bridges, there is mention of 41 monks who sponsored the construction of 74 bridges. The Kaiyuansi was actively involved in the construction of several

bridges. Buddhist monks of Quanzhou gathered donations and actively participated in the planning and construction of bridges as one of the paths to achieve Nirvana (Chen and Zhuang, 1990, p. 155).

KILNS

At the height of its power in the Song and Yuan Dynasties, Quanzhou exported ceramics, textiles, metal goods, and coinage, as well as many other commodities, including agricultural produce. While rarely mentioned in historical records, ceramic production can be well documented by archaeology. Kiln site research has been focused on surface survey, which provides information on vessel shapes, glazes, and kiln furniture (Ho, 2001; Kamei, 1995). Excavations have been conducted at kiln sites in the Cizao area (Ye *et al.*, 1988) and also at Wangpinglun and Qudoudong near Dehua, in the hinterland (Fujian Sheng Bowuguan, 1990), and the results have been described by Ho in her extensive review of kiln production and chronology (Ho, 2001).

Ho (2001, p. 239) notes that the kilns in the region are difficult to date precisely since they do not show extensive stratigraphic deposition and few products of the kilns have appeared in dated burials. She concluded that the bulk of the wares were produced for the export market. Grouping the kilns by wares common to them, she found 13 groups of wares produced from the eleventh to fourteenth centuries. Major glazes included *qingbai* (bluish white), green (celadon), white, black, and lead glaze, which was used on earthenware vessels to produce opaque green, rich brown, and dark yellow colours. She described five phases of ceramic production (2001, p. 257). Phase A kilns, dating from 1050 to 1150, were concentrated to the south of Quanzhou near Zhangzhou and specialized in *qingbai* wares. Phase B kilns, dating from 1140 to 1280, produced mostly celadon wares such as the dark green Tong'an types. Phase C kilns, the dating of which is unclear, produced *qingbai* wares using ring separators, which left the rims unglazed. Many of the sites were located inland and Dehua emerged as an important production area. The Cizao kilns near Quanzhou produced distinctive wares including large bowls and *kendi* spouted vessels, bottles, plates, and tiles. In Phase D kilns, dated from about 1340 to 1380, Dehua had the highest concentration of kilns, and in Phase E, from 1370 to 1400 and later, the Dehua kilns began to become famous for their white *blanc de Chine* wares. Although some kilns in Phase A were as small as 7 m in length, some were as long as 40 m and could fire 20,000 pieces at once. These were long slender dragon kilns with multiple chambers. Although the literature in English, as well as in Chinese, is extensive, there is still a lack of excavation data concerning the large celadon producing kilns in regions such as Tong'an.

While Ho organized her joint survey project data by glaze types, Huang (1996) gave an overview of some of the decorative techniques employed. Both techniques

and motifs proliferated in the twelfth to fourteenth centuries to include many floral designs and stamped auspicious insciptions such as "houses filled with gold and jade" and "long life like a new boat." Incision with bamboo tools and applique were also practiced.

Ho (2001, p. 269) concluded that, judging from the scale of production already evident in Phase A, the ceramic industry "was well capitalized" and it "must have been built on a solid foundation of market knowledge and ample financing along with foreign market connections, agents, buyers, and shippers" (2001, p. 270). The organization of the ceramics industry has also been discussed by So (1994, 2000). He estimated that each of the large kilns supported at least 100 households, or 500 people, and that at the height of the maritime trade, 65,000 people may have been engaged in the production and business of export ceramics in Quanzhou (So, 2000, p. 194).

We attempted to examine links between the Quannan production area and a market area, Okinawa, which had close historical links to Quanzhou and later to Fuzhou. We found that ceramics types made in the the Quannan area in the thirteenth to fourteenth centuries, including Tong'an comb decorated bowls, are found in Okinawan sites, but most common are types from the fourteenth and first half of the fifteenth centuries (Pearson *et al.*, 2001, p. 200). We also attempted to review changes in the number of producing kilns and specialization of production, as well as changes in the use of kiln furniture and saggers, which indicates an increase in the efficiency of the kilns.

The number of kilns in southern Fujian increases drastically from Southern Dynasties-Tang to Tang-Five Dynasties and Song-Yuan. Our analysis showed that the number of types of glazes increases from one in the Southern Dynasties-Tang to seven in the Song-Yuan, all kilns handling a minimum of two glaze types and most as many as seven. Table II shows data for Quanzhou City and adjacent Jinjiang County. Enormous changes occurred in the range of shapes or functional types produced. There were four vessel types in the Tang-Five Dynasties, all kilns producing the same four vessel types. In the Song-Yuan, 31 functional types were produced. Thirty kilns produced almost the same range of types. Seven kilns manufactured spouted pouring vessels (*kendi*) for the Southeast Asian market. Kiln furniture shows elaboration and standardization. In the Southern Dynasties-Tang Period, lining rings, lining pieces, and stands were found at Shuangxikou. In the Tang to Five Dynasties kilns, stands were employed. In the Song-Yuan, stands, stacks and saggers were used.

Fundamental productive changes were associated with the widespread use of saggers, which increased production dramatically (Mizukami, 1998). The use of saggers may be taken as an example of the capitalization and technical expertise involved in the Quanzhou ceramics industry. Saggers, which are clay containers in which objects are fired, made it possible to standardize stacking procedures so that less time was needed to load the kiln and more objects could be inserted.

Table II. Kiln Specialization: Jinjiang County and Quanzhou Wanyao

	Shuangxikou[a]	Huzaishan	Houshan	Laoshushi	Houbishan	Gouzaishan	Tongzishan No. 2	Zhizhushan	Tuweian	Shanping	Tongzishan No. 1	Xushan	Gongzaishan	Dingshanwei	Zengzhushan	Jinjiaoyishan	Xiqianshan	Dashuwei	Wanyao North	Wanyao South
Period																				
Southern Dynasties to Tang	×																			
Tang to Five Dynasties		×	×	×	×	×	×													
Song Yuan								×	×	×	×	×	×	×	×	×	×	×	×	×
Ware																				
Coarse paste porcelain		×	×	×	×	×														
Semi porcelain coarse paste	×							×	×	×	×	×	×	×	×	×	×	×		
Fine hard paste																			×	×
No. of types of glazes	1	4	4	4	4	4	4	7	7	7	7	6	6	6	6	6	7	6	2	2
No. of functional types	7	4	4	4	4	4	5	31	31	31	2	24	28	28	1	2	1	31	11	11
No. of types of kiln furniture	3	2	2	2	2	2	[b]	4	4	4	4	4	4	4	4	4	4	3	[b]	[b]
No. of firing methods	1	1	1	1	1	1	[b]	3	3	3	3	3	3	3	3	1	3	[b]	4	4

Note. S indicates that this kiln is reported to specialize in this item.
[a] Separate site report; other sites are in group report.
[b] No data.

Before the beginning of the Song, vessels were usually stacked within or on top of each other, with the aid of supports and spacers. In addition, saggers helped to maintain an even heat around the objects, reduce negative effects of convection currents and falling ash, and also protect the objects from cooling if the roof vents were opened. However their production required an investment in time and energy, and saggers which could withstand particularly high temperatures were more costly than the ordinary ones. In Fujian, a particular style of sagger with V-shaped cross section permitted an increase of 60–80% in the number of bowls in one firing, a major increase in productivity. Unskilled laborers could also load the saggers relatively quickly, further increasing productivity (Mizukami, 1998). Li reports that in northern Fujian, excavations of the Jian kilns have shown that 10,000 saggers could be handled in a single firing (Li, 1993). Some sites specialized in the production of bowls fired in saggers, such as the Pukou Kiln, wares from which were found in the Houzhu sunken ship (Chen, 1986). A particular type of sagger for firing *yingqing* wares, in which the wares were placed in the sagger in an inverted position, resting on their rims (which were unglazed), was used in the Song Period (Chen, 1986) and can be seen in Jingdezhen and Fujian kilns such as Dongmen (Fig. 9). Further development in the Ming led to the construction of stage kilns in Dehua.

Fig. 9. Porcelain and stoneware sherds and broken ring separators and sagger fragments from the Dongmen Kil, Quanzhou.

CONCLUSION

Archaeological research in Quanzhou has concentrated on religious diversity, foreign relations, overseas trade, and ancient technology.

Architectural remains from a wide variety of religions constitute rich documentation of the ethnic diversity of the city in its heyday. The specific context in which foreign religious remains were found, in fragmentary condition used for building materials in the Ming city wall, shows that the policy of multicultural tolerance collapsed at the end of Quanzhou's international era. The recovery of foreign gravestones and architectural fragments attests to links between the city and polities in Western Asia, India, and Southeast Asia and the presence of a world network of maritime trade at the time of the Song Dynasty. The presence of bilingual inscriptions and burial styles which fused Islamic and Chinese motifs show the assimilation of foreign communities and the flow of ideas through the city. Southeast Asian incense, medicinal plants, and spices found in the hold of the Houzhu ship confirm trade connections with Southeast Asia. Archaeology provides an insight into many aspects of ancient technology not described in documents. Some of this technology was directed to the extension of trade relationships. The distinctive attributes of the hull, rudder, and arrangement of the masts of the Houzhu ship, which differ from those of later coastal or river boats, have changed notions of Song and Yuan ships and their relation to western ships. The association of particular kinds of kiln furniture, vessel forms, and glazes shows increasing specialization of production in the Song and Yuan. Most of all the sheer scale of ceramic production is indicated by distribution studies and spatial surveys of kiln sites, dated by the wares found on their surfaces, indicating huge increases in production in the Song and Yuan. The introduction of saggers and changes in their form, both steps which increased the labor input into production but allowed for increased efficiency and increases in the scale of production, can be seen as a kind of capitalization.

The recovery of foreign gravestones and architectural fragments attests to links between the city and polities in Western Asia, India, and Southeast Asia and the presence of a world network of maritime trade at the time of the Song Dynasty. Quanzhou was home to members of a number of trade-diasporas which maintained their identity through language and religion. These diasporas were useful to both the exiled Song elite and the conquering Yuan rulers as sources of wealth through sponsoring and taxing of trade, without having to restructure power relations inside the Chinese community. Stein's trade-diaspora model highlights the ways in which the different goals, power balances, and social strategies of traders and host communities affect the organization of the interregional network as a whole (Stein, 1999, pp. 48–49). The diasporas were influenced by both government structure and dynamic strategies of individual traders. For instance, with the fall of the Song, western Asian minorities were favored by the Yuan government and new

commercial and political opportunities were seized by powerful entrepreneurs. At the same time the trade-diaspora model does not tell the whole story in Quanzhou, for the foreign communities were Sinicized to varying degrees and there was close co-operation between "foreigners" and local groups. Ever during the Yuan Dynasty, So concludes that their influence was never greater than that of the local merchants (2000, p. 114). Underlying the conspicuous patterns emerging from archaeological materials are fundamental changes leading to prosperity in South Fujian—evolving Confucian ethics, religious beliefs, and increasing lineage cohesion (So, 2000, p. 285). By combining historical research into these trends with systematic archaeological investigation of settlement, production, exchange, and environment, we may be able to understand the rise and fall of Quanzhou and other great ports.

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