

## 7. SHAM WAN TSUEN SAND BAR SITE

### THE SITE

The sand bar site at Sham Wan Tsuen was first excavated in the 1950's, but its significance was not recognized until the excavations conducted by the Hong Kong Archaeological Society from 1979 to 1984. This work (fully reported in Cameron and Williams 1984; see the summary at Appendix 7) brought to light seven lime kilns, large quantities of Tang pottery and coins, and several Sung burials on the site after the lime industry was abandoned. A small quantity of Neolithic material was also found, confined to the western corner of the sand bar.

The task for the 1991 project was clear: to complete the excavation of the site and extract as much information as possible on aspects of the lime industry still unclear. To this end, former Chairman of the Society Hugh Cameron was brought out of retirement in England to join the project. The large quantity and variety of Tang ceramics also required a more detailed study than had hitherto been carried out. For this task a Tang ceramic specialist, Ho Chui-mei, was invited to join the team.

The site belongs to a small group of sand bar sites in Hong Kong which are separated from present beach deposits, and stand as mounds in the valley floor behind the beach. There has been considerable debate on the significance of this type of "raised beach," especially whether they should be taken as evidence of higher sea levels in the past. Therefore, the structure of the sand bar and of adjacent deposits in the valley were



*Figure 7.1 -- Excavation of the sand bar site, facing north.*

the subject of special attention during the final work on the site.

## EXCAVATIONS AT THE SHAM WAN TSUEN SAND BAR

The original grid from the 1979-84 excavations was re-established, within a margin of error of 0.5 m. Several of the old squares were identified from backfill lines, and formerly excavated kilns were re-exposed. The first blocks of new squares laid out were F-G and W-X-10-12. A new kiln (9) and a long fired clay structure (FC1) were discovered. Scattered around and inside kiln 9 were 27 Tang coins of *wu-chu*, *kai-yuan* and *chien-yuan* varieties, all seen in the previous excavations. The clay trough is a new feature, and may represent a slaking pit. Square 10 yielded two pieces of double-f pottery

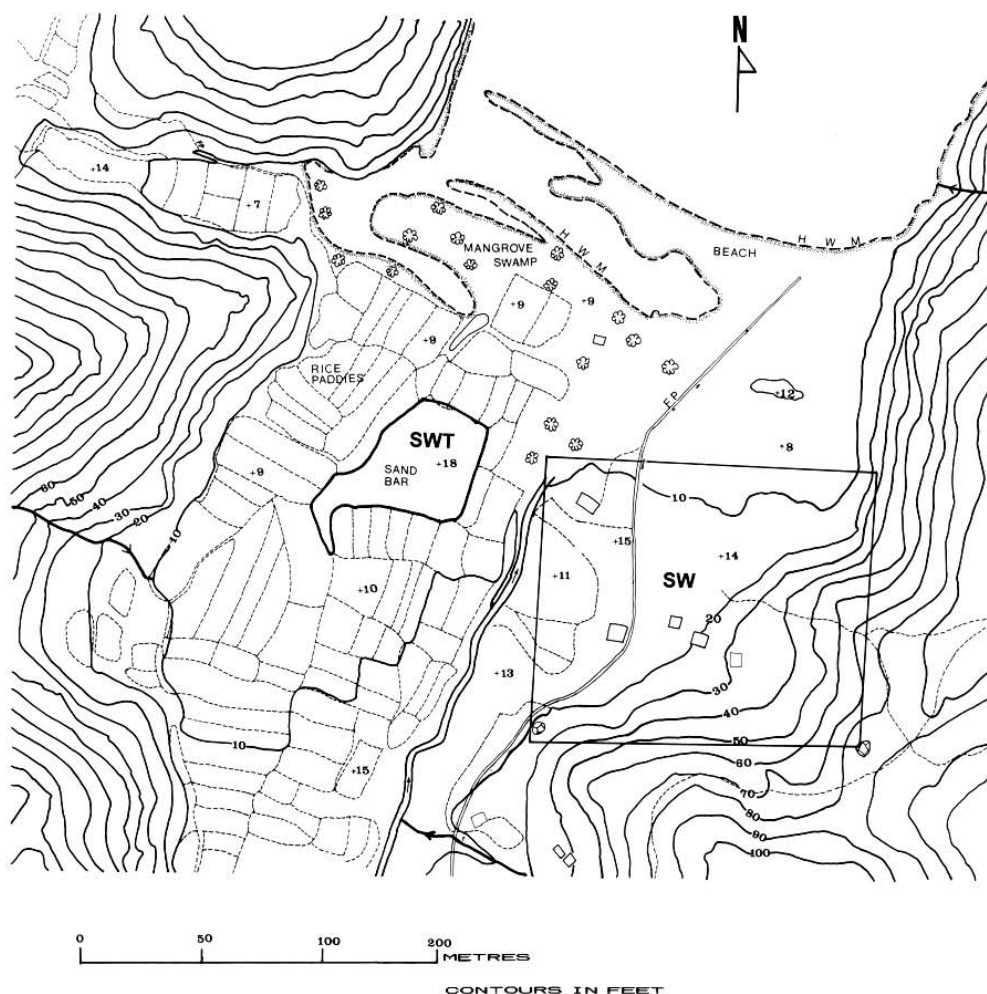


Figure 7.2 -- Map of the Sham Wan Tsuen area, showing sand bar and east valley sites.

-- the only Bronze Age artifacts found on the site. From Square 11 came the bottom half of a large black pot (no. 97 in figure 7.28) , possibly a water storage vessel, with a dish (no.6 in Figure 7.22) inside it. Square 12 had two large iron axes or hoes (Figure 7.20).

Squares 13 and 14 were excavated in the hope of reaching a Late Neolithic stratum below the Tang industrial layer, but in both cases Tang potsherds were found side-by-side with Neolithic ones to the bottom of the deposit, apparently re-worked or very heavily disturbed during the Tang occupation.

Squares Y1 and Y2 also yielded a few Neolithic sherds. S1 had only kiln debris. Square R had three features: a cache of 20 chipped pottery discs and a cache of 11 glazed spindle whorls or net-sinkers (see Figure 7.17), and the fragment of kiln 10.

The block of squares A1-A8 and B4-6/C4 provided the opportunity to obtain a cross-section through the sand bar and down the eastern slope. It also yielded the most important evidence concerning the functioning of the lime kilns, with the nearly complete example in kiln 11 (see the discussion by Hugh Cameron below on pages 223-230 on the

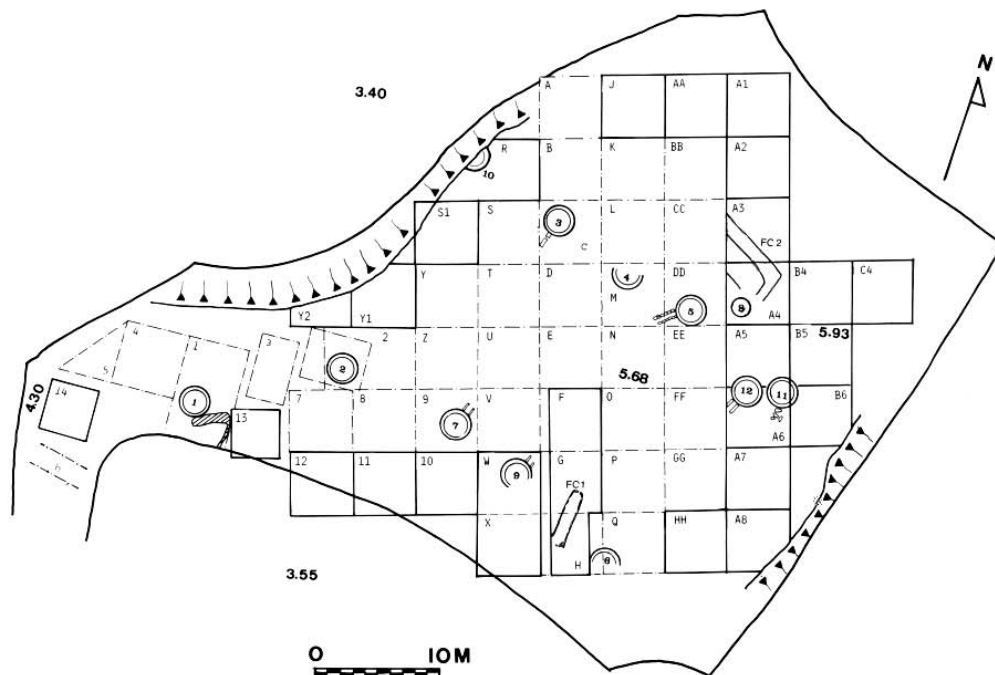


Figure 7.3 -- Excavation plan of the sand bar site, showing all structures discovered.



*Figure 7.4 -- Aerial view of Sham Wan Tsuen facing north, with the excavated sand bar site in the centre and airport construction in progress.*



*Figure 7.5 -- Close-up view of the excavated sand bar site with nine of the kilns exposed.*



Figure 7.6 -- Kilns 9, 7, 2 after excavation.

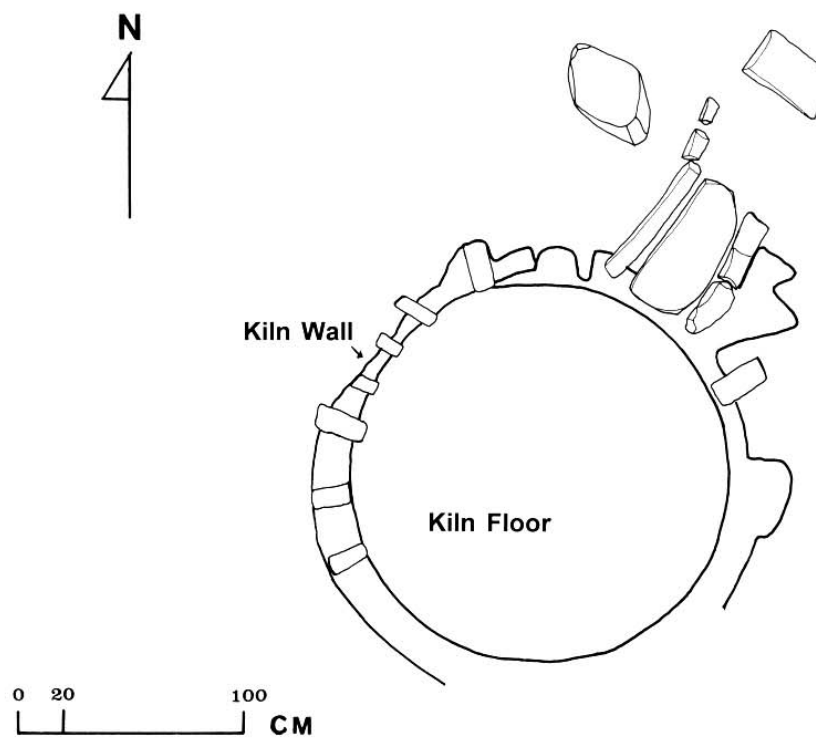


Figure 7.7 -- Plan of kiln 9.

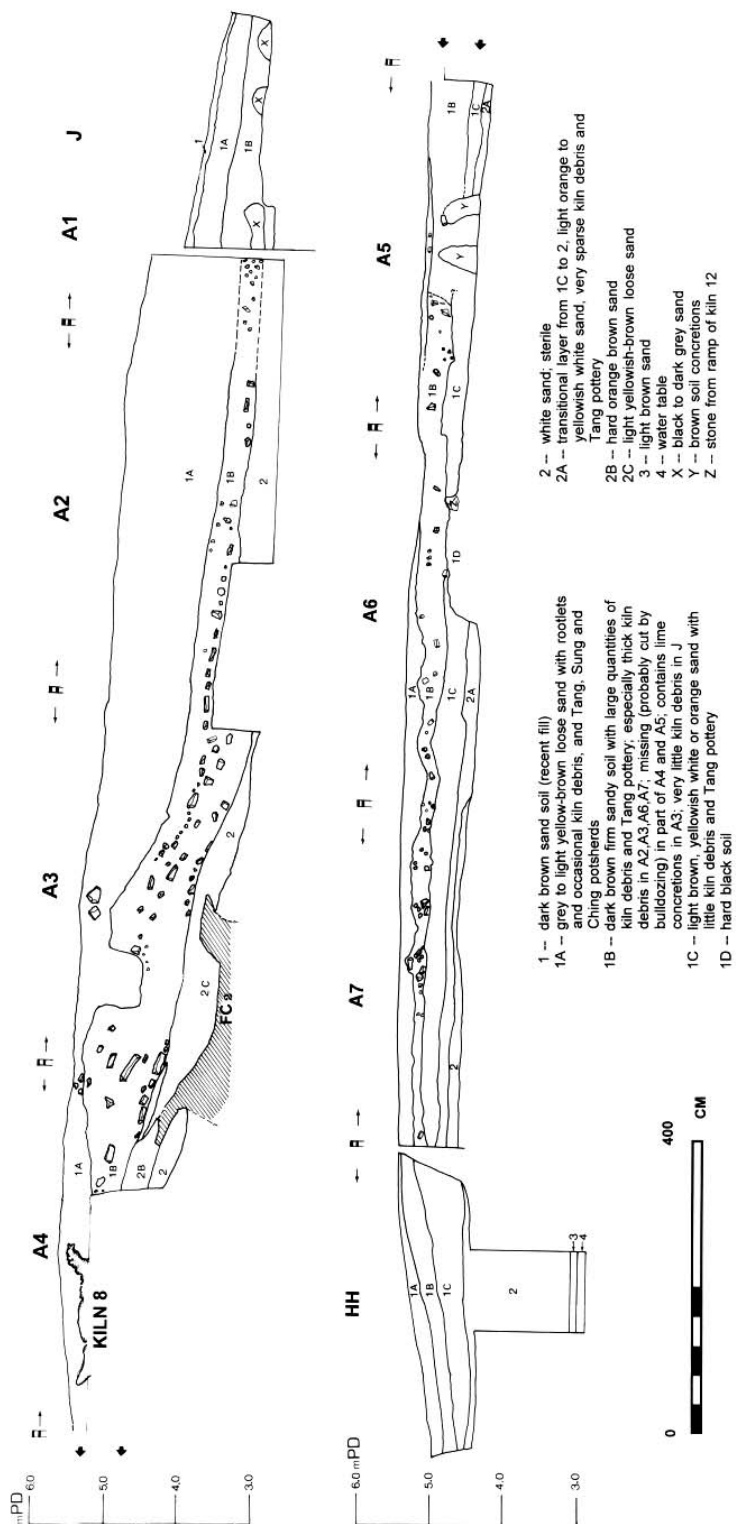


Figure 7.8 -- Section across the sand bar along the west walls of Squares A1-A8 and J.



*Figure 7.9 -- Kiln 8 (right), FC2 (lower centre) and the kiln debris layer in Square A3 (facing south).*



*Figure 7.10 -- Kiln 8 and the sloping kiln debris layer in Square A4 (facing west).*

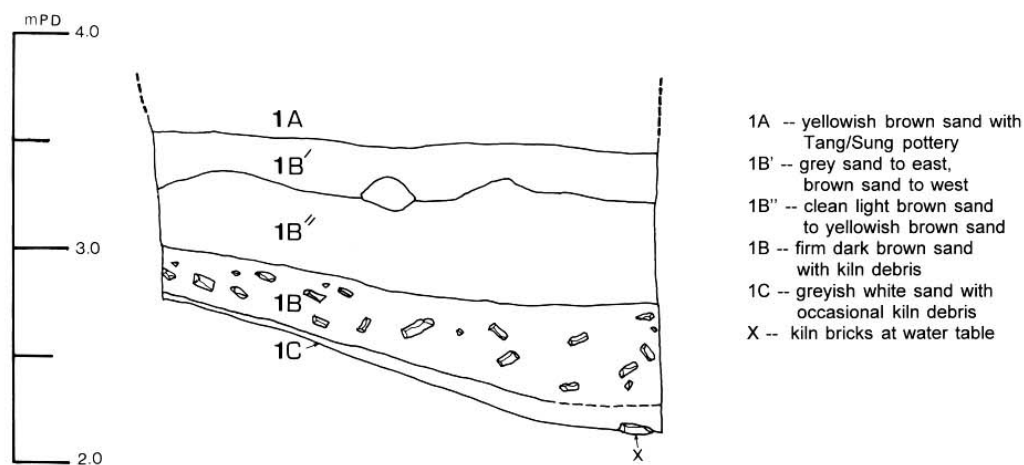


Figure 7.11 -- Profile of lower part of north wall, Square A3

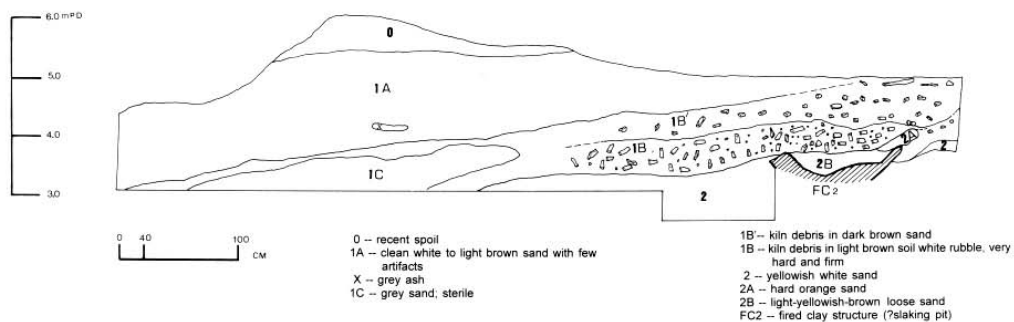


Figure 7.12 -- Profile along north wall of Squares B4/C4, and south wall of Square A4.

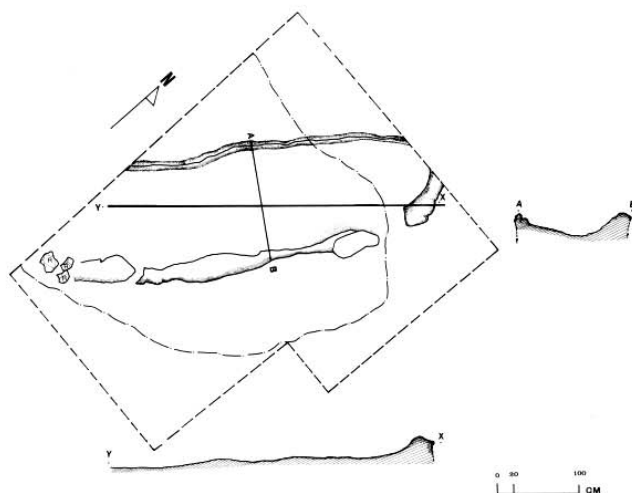


Figure 7.13 -- Plan of the clay trough FC1.





Figure 7.14 -- The clay trough FC1.

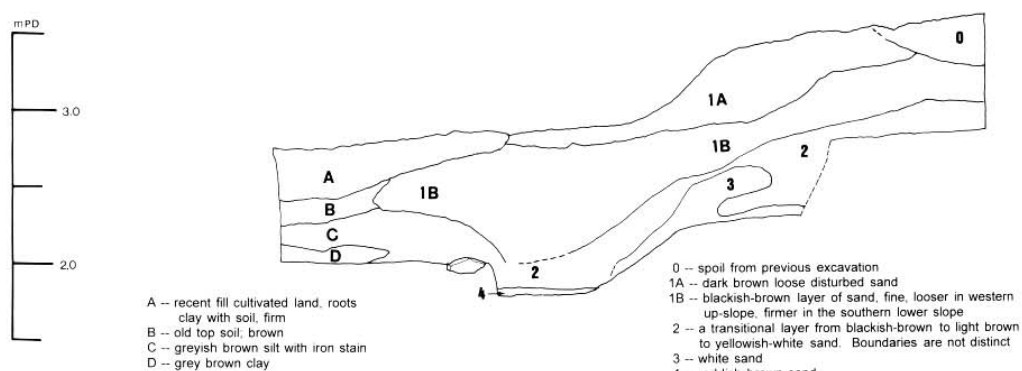


Figure 7.15 -- Profile of the west wall of Square 12, showing transition from valley/lagoon deposits to the sand bar (the main kiln debris layer is 1B).

significance of this discovery). In addition, another larger clay trough (FC2) and two other kilns (nos. 12 and 8) were unearthed. The slope of the sand bar in Tang times could be clearly seen in the massive debris layer sloping from A4 to A2 (see Figure 7.9) which had built up over the clay trough; similarly, the eastern slope of the old sand bar could be discerned (see Figure 7.10). The debris layer on the northern slope of the sand bar continued down to at least +2.2 mPD, the limit of the excavation (see Figure 7.11). This fact suggests that the sea level was the same or lower during the Tang era than it is today.

No new Sung burials were found during the excavation, but removal of the narrow 30 cm balk between Square A3 and the 1984 square CC (where a Sung burial with bowls

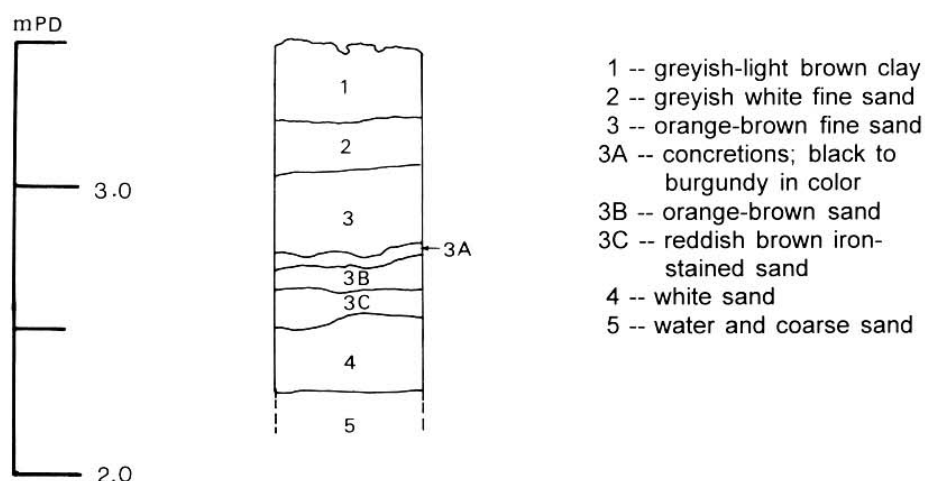


Figure 7.16 -- Profile at the centre of Square VA.

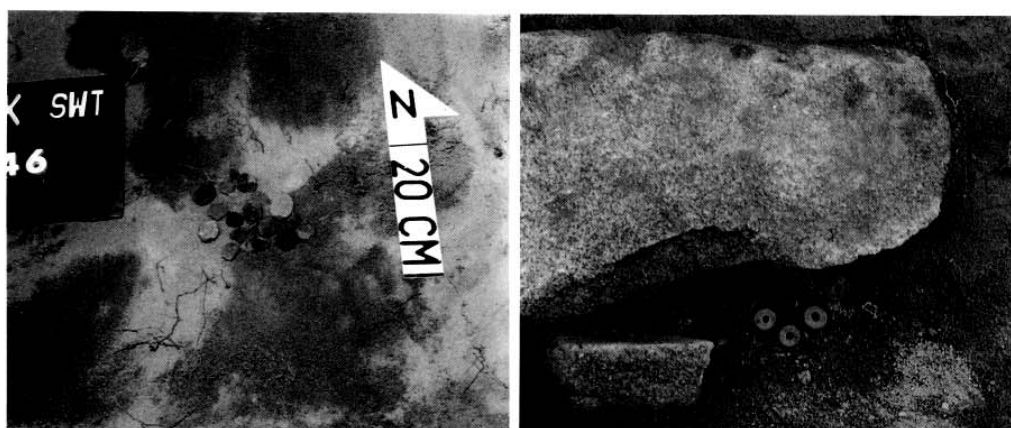


Figure 7.17 -- The cache of chipped discs (left) and the spindle whorls (right).

and coins had been found) brought to light two more Sung coins, almost certainly part of the same burial. The coins were a *hsi-ning yuan-pao* and a *shun-hua yuan-pao*, dating to 1068-77 and 990-94 A.D., respectively; these dates correspond almost exactly to those of the earliest and latest coins in the burial in Square CC.

Two squares (VA,VB) were excavated in the valley floor 15 and 50m south of Square 12. Bands of clay and sand were encountered, with a few Tang and Neolithic sherds in the upper layers. The basal fine, dark grey clay may represent the lagoonal deposits of Tang and/or Neolithic times, but no artifacts were found within it.

## STRATIGRAPHY AND DISTRIBUTION

A detailed, computerized record was kept on site of all pottery recovered during the excavation. Tang ceramics were sorted, counted weighed by types, then entered in the computer record according to square, layer, waretype, sherd type (rim, base or body), count and weight. However, no significant variation was found either horizontally or vertically. The conclusion suggested by this result is that the site was occupied for a rather brief period, perhaps not more than a century, and that there were no differentiated activity areas reflected in the pottery types present.

The chart below summarizes the pottery data stratigraphically. For descriptions of each ware type see the section below.

WARE	TOTAL	L1	L1A	L1B	L1C	L2	L2A	L2B
GCGW	2679	1825	231	355	51	154	12	51
Hunan	21	14	3	1	0	2	0	1
Meixian	168	98	23	8	25	12	0	1
Fengkai	5693	3786	694	638	16	297	24	238
Fengkai A	106	37	40	27	0	2	0	0
Qujiang	1488	985	21	146	134	181	10	11
Changsha	353	220	25	70	3	10	1	11
Ding	3	2	1	0	0	0	0	0
Haikang	4	4	0	0	0	0	0	0
Gulao	4	0	1	3	0	0	0	0
Ggdg cel	2	0	1	1	0	0	0	0
Yue	29	12	10	7	0	0	0	0
Industrial	60	36	12	8	0	4	0	0
Coarse A	253	131	69	39	2	11	0	1
Coarse B	14	5	0	9	0	0	0	0
Blue&White	35	26	8	1	0	0	0	0
historical	370	296	5	47	8	12	0	2
20th cent.	142	123	9	2	0	4	4	0
Neolithic	530	318	1	1	0	209	0	1

## DESCRIPTION OF FINDS FROM SHAM WAN TSUEN SAND BAR

The main category of material from the site was Tang ceramics, and these are described in detail below. The prehistoric pottery is typical Late Neolithic, with soft chalky grey ware impressed with geometric patterns. The characteristic heavily everted rim and rim with interior seatings of Late Neolithic coarse corded ware are also present. The only pieces not classifiable as Late Neolithic are the two fragments of double-f pottery mentioned above, which belong to the Bronze Age. Stone artifacts were few and generally unremarkable, consisting of an adze, a ring fragment and chipped pebble tool fragments.

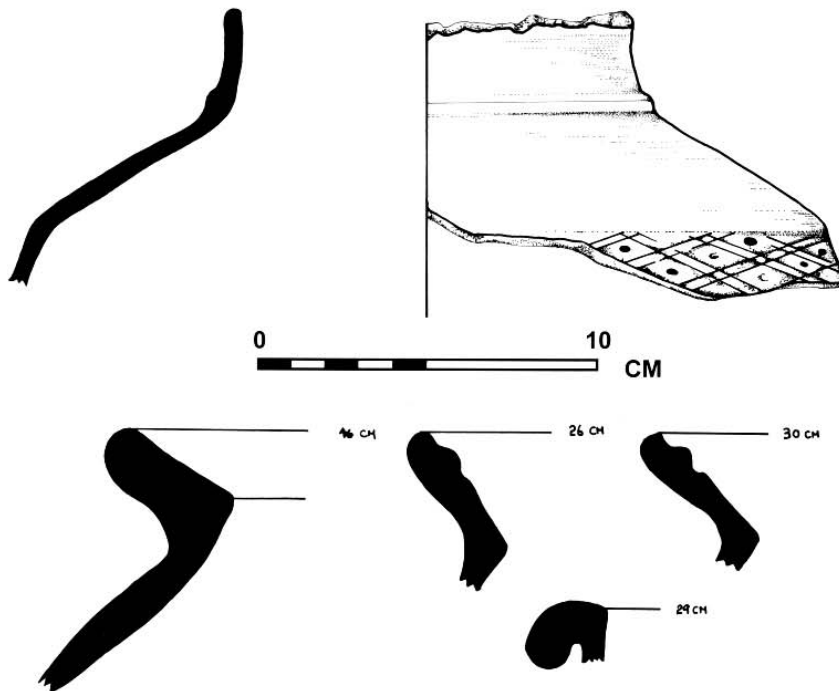


Figure 7.18 -- Soft geometric pottery (above) and coarse corded rims.

Metal artifacts included the two iron hoes or axes mentioned above, an iron knife blade, a U-shaped bronze hairpin, 46 Tang coins and 2 Sung coins. Part of a stone mould or measure and a glazed ceramic bead were also found.

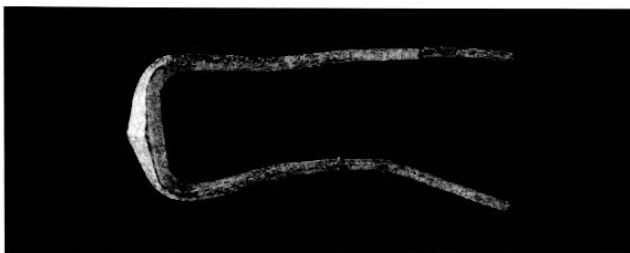


Figure 7.19 -- The bronze hairpin.

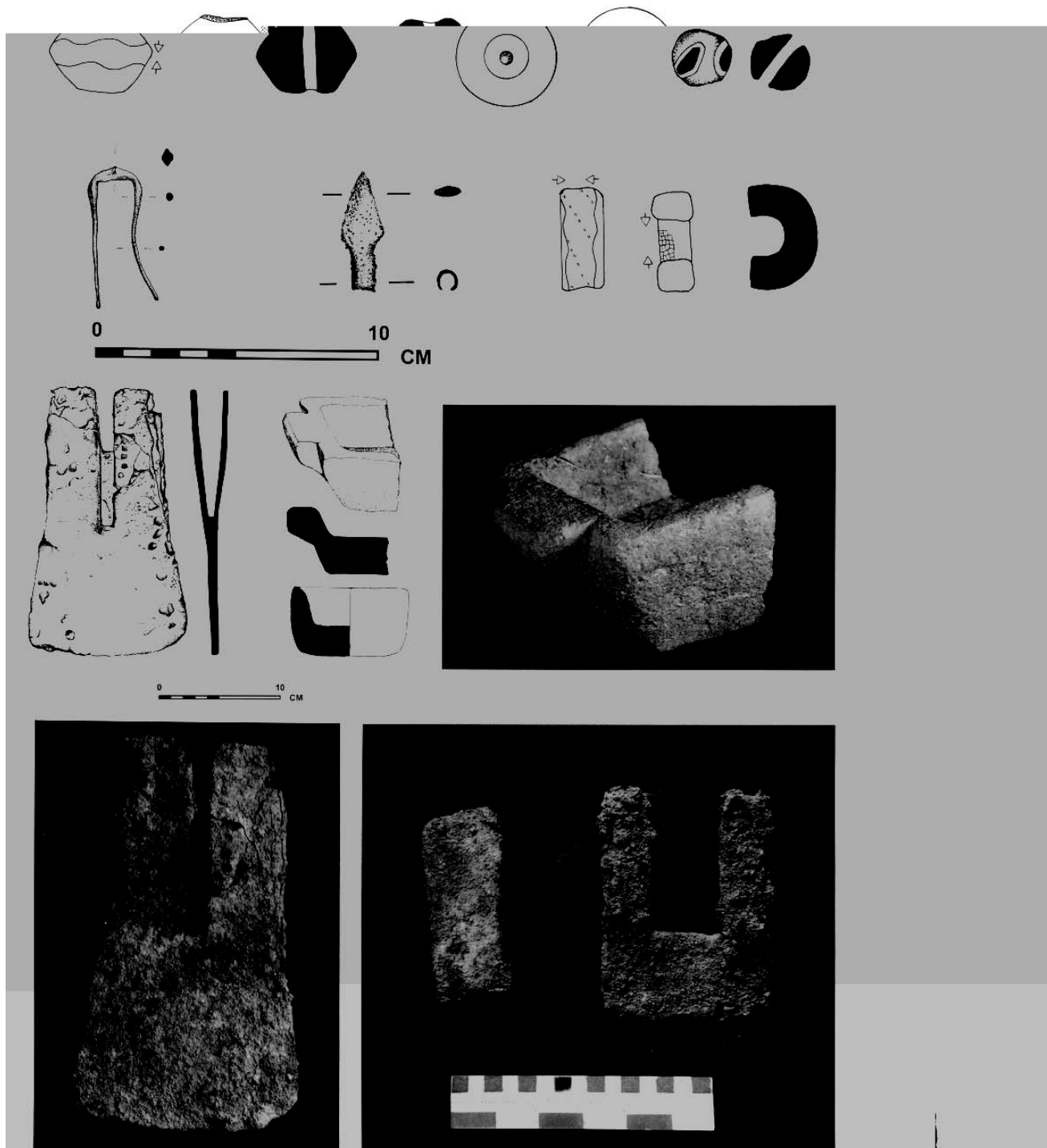


Figure 7.20 -- Metal, stone and ceramic objects from the Tang deposit.



Figure 7.21 -- Pottery processing at Sham Wan Tsuen.

The ceramics from the site were studied on site by Ho Chui-mei, and the descriptions below are based on information provided by her and on further study after the fieldwork.

#### GENERAL OBSERVATIONS

The site of Sham Wan Tsuen contains glazed ceramics covering the 5th to the 20th centuries AD, with the richest deposit dating to the 8th and the 9th centuries.

Evidence for occupation of the site during the 5th to 7th centuries is thin -- only a handful of green wares can be put into that period. Vessel No. 8 has vertical "bridge" lugs, and its shape also agrees with ceramics of the Jin and Six Dynasties periods. Other vessels such as No. 2 and No. 115 can also be argued to be Six Dynasties or Early Tang. Vessel No. 113 has a circle of impressed floral pattern on the interior surface; similar wares have been found in the northern part of Guangdong and in Hunan provinces. The vessel shape of No. 88 seems to belong to this period but its bi-chrome glazing manner is unusual. The manufacturing areas of these green wares are not clear. They could have come from Zhejiang and/or Hunan. Whether Guangdong made green wares at such an early date is uncertain. In general there are very few diagnostic ceramics at Sham Wan Tsuen which can be dated definitely earlier than the 8th century.

#### CODE FOR DRAWINGS OF SHAM WAN TSUEN CERAMICS

→ ← Limits of glaze



Crackle glaze



Brown glaze



Blue glaze

[Detailed captions for Figures 7.22 to 7.30 see pages 216-218]

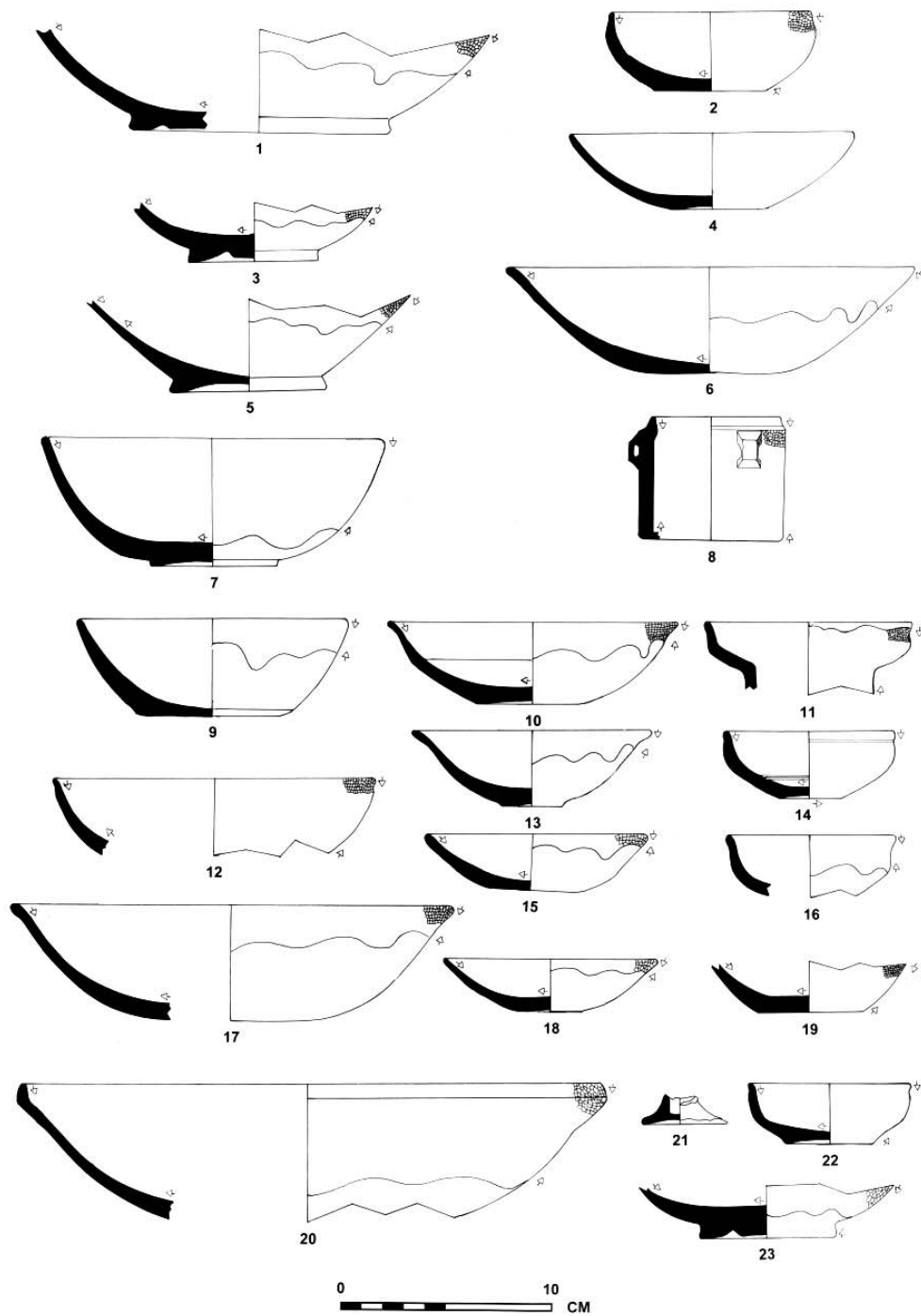


Figure 7.22 -- Guangdong Coastal Green Wares (GCGW).

The majority of the historical ceramics recovered from Sham Wan Tsuen appears to be mostly of the 8th and 9th centuries AD. The wares were imported from Hebei, Zhejiang, Hunan, and Guangdong. While the Guangdong wares have a fairly long stretch of production time, covering at least the 8th and 10th centuries, the Changsha wares from Hunan belong to the second half of the 8th century up to perhaps the end of the 9th century. A few bowls came from Shanglinhu kiln complex in Zhejiang province. Even a few vessels were imported from Hebei province; only two fragments of Ding ware have been recovered from the Sham Wan Tsuen 1991 excavation.

The Guangdong wares were by far the largest item of ceramics collected from the site. Several kiln complexes could have been responsible: there are fine green ware from Meixian, coarse green wares from several coastal complexes (Hanjiang River, Pearl River Delta, Yanggan River), dark purple ware possibly from Qujiang and black ware from Fengkai. The last category is the most numerous.

There are also unglazed earthenwares: Coarse Ware A and Industrial Wares might be local products -- the body matrix includes coarse quartz which is also a characteristic of the kiln furniture at the site.

For the 10th to 12th centuries there are only a couple of sherds from Sham Wan Tsuen belonging to that period. However, more examples were collected from Sham Wan Tsuen valley (abbreviated SW). These sherds were most likely made at Chaozhou in Guangdong, or kilns in Fujian.

There are at least 4 groups of glazed jars (Unknown 1, 2, 3 & 4) which do not appear to be of Tang period. They are probably wares of the 10th century or later times.

Two fragments believed to be of the Ming period were recovered from Sham Wan Tsuen. These are Guangdong Longquan which have been dated by archaeologists in Guangdong to the 14th to 16th centuries. These are however the only pieces of purportedly Ming ware found on the site and indeed the island, and the dating may be questioned. Or they may be part of the 18th/19th century assemblage.

The site also yielded blue-and-white sherds belonging to the 19th-early 20th century. They appear to be wares made at the Wun Yiu Kiln at Taipo in Hong Kong. A few small fragments however might be Minnan blue-and-white from Fujian. There are at least two sherds which have fine bodies and good quality cobalt blue painting. They could very well be 18th century Jingdezhen or Dehua wares.

The historical ceramic finds have been classified into 23 types of ware according to the origin. However there are also wares which could not be classified; these are grouped into separate ware types by their fabric and surface treatments.

#### *1. Guangdong Coastal Green Ware (GCGW)*

This group of ceramics represents a broad category of ware with green glaze which covers a wide range of green colours. The bodies of the ware can be variable ranging from hard stoneware to earthenware-like soft paste. The glaze appears to be flaky and can be peeled off easily.

Shapes include shallow bowls, medium to small-sized jars with four or more horizontal lugs, lids for jars, ewers and some netsinkers as well. Some jars have Chinese characters, or a character-like mark., inscribed underglaze at the shoulder. The bowls are the most common vessel shapes found at the site. A few of them still have intact clay wads on their interior surface. On pots where the clay wads have been removed five to six irregular unglazed patches appear as spurmarks. There is only one example where the



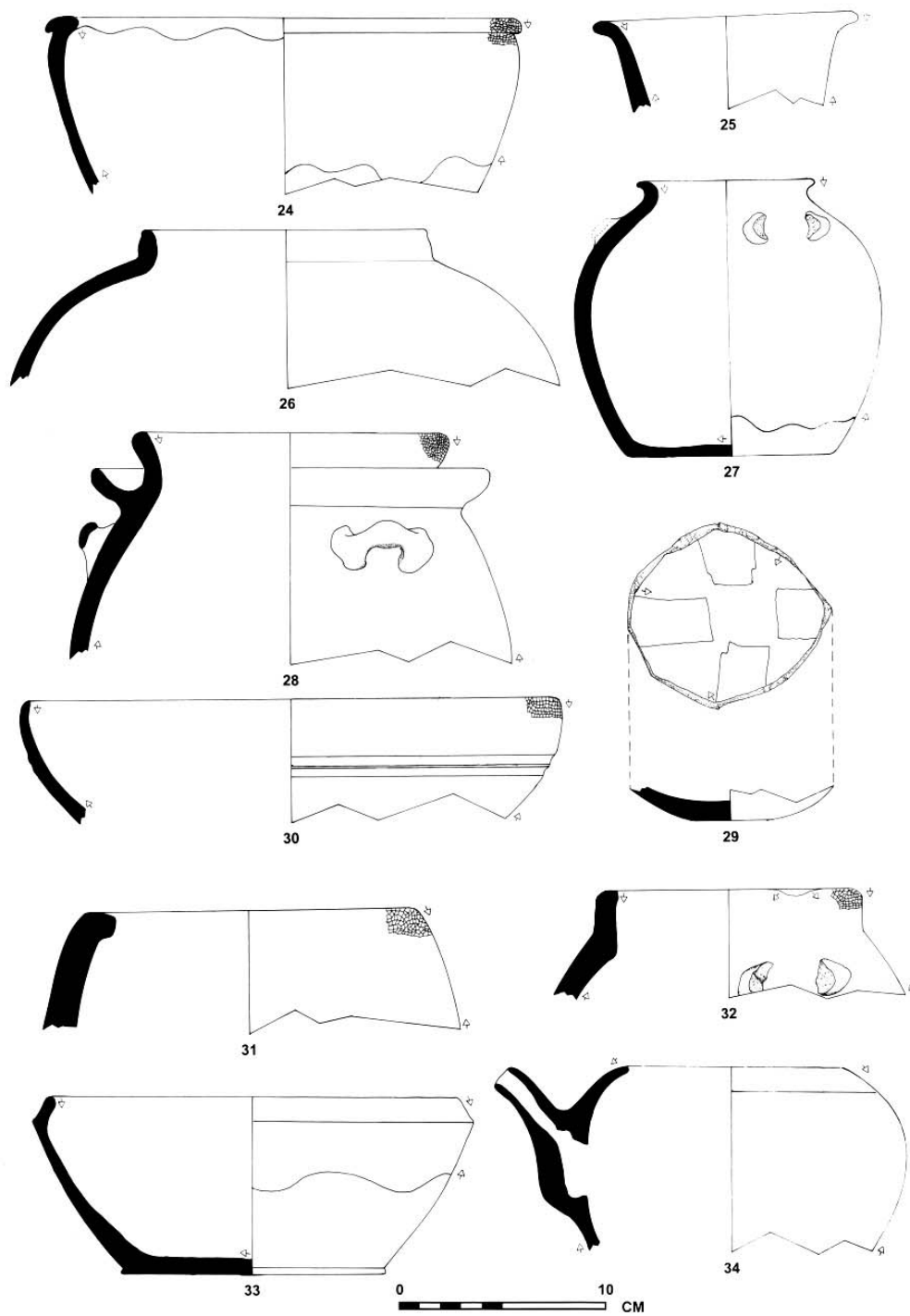


Figure 7.23 -- Guangdong Coastal Green Wares (GCGW).

The wares were made at several kiln regions in Guangdong: Hangjiang River spurmarks are neatly prepared leaving a "star"-like unglazed pattern on the bowl (No. 29). (Chaozhou), Pearl River Delta area (Guanchong, Fenggang, Gaoming, etc), Haikang (Moutan) and Yanggan areas (e.g. Longtousha). These kiln localities made highly comparable glazed wares with similar vessel shapes. Whenever possible the kiln localities responsible for the manufacturing of the samples have been suggested. But it is not always possible. In addition, all body sherds of green glaze without distinctive features have been assigned as GCGW ware. It is possible that some Meixian or Changsha sherds could have been included in this category as well. It is not always possible to distinguish the wares when the sherd has little glaze left and the body much weathered. Hence the proportion of GCGW bodies would appear higher than it should be.

Therefore Meixian and Changsha sherds could very well be put together as GCGW sherds when (1) there is no glaze left; and (2) the shape is not diagnostic for Meixian or Changsha.

Some of the GCGW examples are too fine to be considered as ordinary GCGW. Yet they are not Changsha types, or Meixian. These could be Hanjiang (Chaozhou) group of GCGW, or the better quality ones from the Pearl River Delta. The group which has a flat base showing string-cut features might actually be Meixian.

## 2. *Haikang Ware*

This is one of the Guangdong Coastal Green Ware complexes lying on the eastern coast of the Leizhou Peninsula. The two kiln localities at Haikang produced green wares highly comparable with other GCGW made in Guangdong. The wares identified here as Haikang ware were because of the vessel shape. The high solid stud footing is not common among other production centres of GCGW wares in Guangdong.

## 3. *Yanggan Ware*

This is a branch of the GCGW ware but distinctive in having a thin yellowish green glaze, often finely crackled and a powdery light-coloured or white body. The ware comes from a number of kiln localities (e.g. Macheng, Fengshu, Longtousha) in the northwestern part of Leizhou Peninsula, Guangdong.

## 4. *Gulao Ware*

Also a branch of the GCGW group. The term is used to refer to basins which are very likely made at the Pearl River Delta area, especially at Fenggang kiln in Gulao subdistrict. Gulao ware is characterized in having wide unglazed rims that are reddish in colour, flat base, and two to four horizontal lugs.

## 5. *Fengkai Ware*

This is basically an unknown group of ware to most scholars. Ho visited the kiln sites and observed wasters and kiln structures in situ in Fengkai and Yunan counties. This kind of black ware might have been made there over a fairly long period -- from the 8th to the 12th centuries at least. The sites seem to have made mostly jars of different sizes, which are what can be recovered at Sham Wan Tsuen. Several kiln localities along Xijiang between Fengkai (Gubaoyong) and Yunnan (Shuiguakou) counties of Guangdong province were involved in such productions.

The vessels recovered from Sham Wan Tsuen are overwhelmingly small to large-

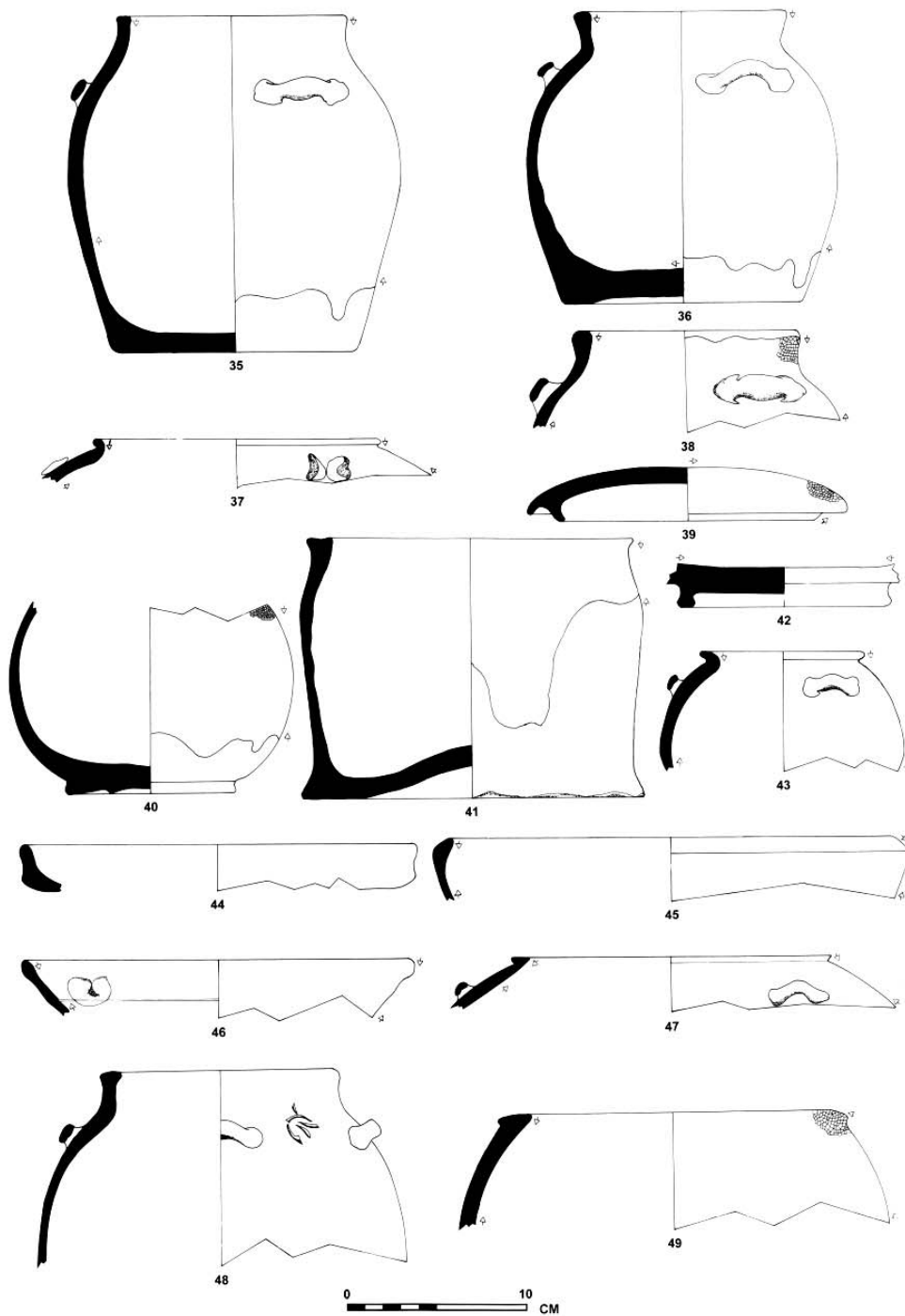


Figure 7.24 -- Guangdong Coastal Green Wares (GCGW).

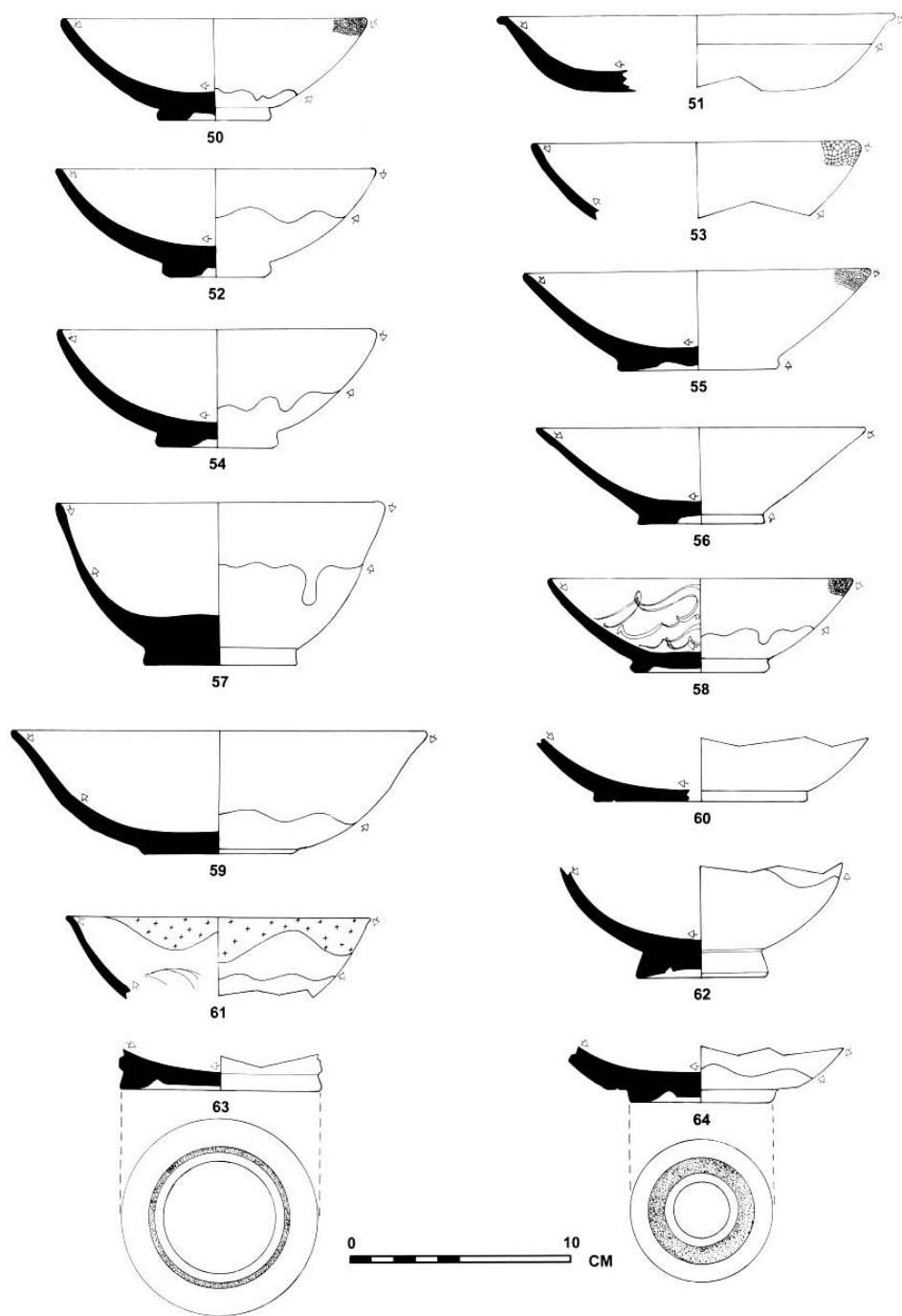


Figure 7.25 -- Changsha wares.

sized jars with 4 to 6 horizontal lugs. The pots were made of hard grey unglazed stoneware that is often covered with a thick black slip. When the slip is well polished it shows a rather shiny and sometimes even glossy surface.

Fengkai black ware constitutes the most frequently represented and the largest jars used at Sham Wan Tsuen. Rim diameters were recorded of 12, 16, 17 and 20 cm; base diameters of 12, 14, 16, 18, 20, 24 or 32 cm were noted.

#### 6. *Fengkai Ware A*

There is another group of black ware which is not as hard paste as Fengkai. The fabric is soft and contains a fair amount of sand. In the cases of badly weathered sherds they could be confused with those of Coarse Ware A. The shapes include shallow bowls which might have been used as lids, and possibly jars as well. This is a category evolved out of Fengkai only some time afterwards. So some of the Fengkai counts also contain Fengkai A sherds. This type of ware might very well also be made at Fengkai since similar sherds did occur at those kiln sites.

#### 7. *Changsha Wares*

There are at least 14 vessel types of Changsha wares represented at the site, containing 12 rim types and 14 base types forming several types of bowls, jars and ewers. Their modes of decoration include monochrome yellowish/greenish glaze, molded applique in green glaze, polychrome underglaze painted mode showing abstract patterns and simple floral, polychrome in dotted pattern, and green-and-white splashes.

The wares were made at Tongguan north of Changsha in Hunan Province. Changsha wares have been categorized fairly tightly on their dating. The dotted pattern mode can be attributed to a late 8th century date whereas the green-and-white splashes group belongs to a late 9th century/early 10th century period. The other three modes of decorations fit in within the two ends of the time scale.

#### 8. *Hunan Ware*

The sherds have sometimes been labelled as Brown Ware, or Brown Ware A. They should all be lumped together as one group. There is a group of brown glaze bowls which has neat finish, well-trimmed footings or string-cut flat bases, and rather white and chalky body. Such features do not seem to belong to the GCGW group. Some of them have the lower half of the interior surface unglazed, a feature recognizable and widely used on 8th century Changsha wares. It is not clear where they come from. They might very well be Hunan wares, possibly from the vicinity of Changsha because:

- a) string-cutting is not widely practised in Guangdong;
  - b) this kind of brownish-reddish glaze is not a Guangdong glaze;
  - c) the body thickness is unlikely to be of Guangdong origin either;
  - d) the vessel shape is however common enough in many parts of China, and could have been in use until Yuan times;
  - e) it might well be a Changsha type but Ho had not seen any shape and glaze like this from Changsha kilns;
  - f) there are kilns north of Changsha where small plates like this, of similar glaze have been reported; they are said to be Five Dynasties-Song kilns;
  - g) sometimes the sherds appear to have a layer of slip underneath the glaze.
- The pieces from Sham Wan Tsuen are small plates, possibly lamps, with rim

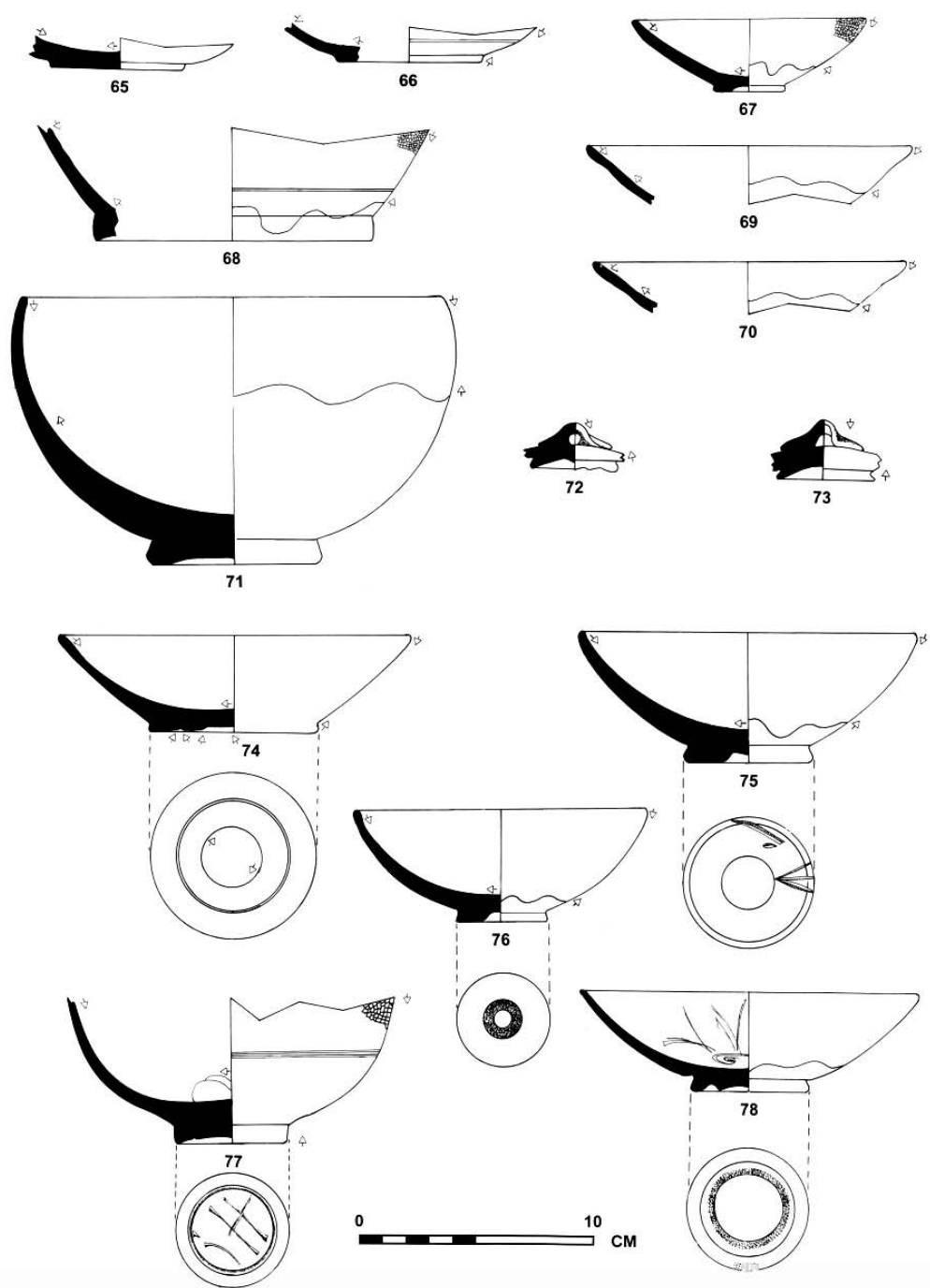


Figure 7.26 -- Changsha wares.

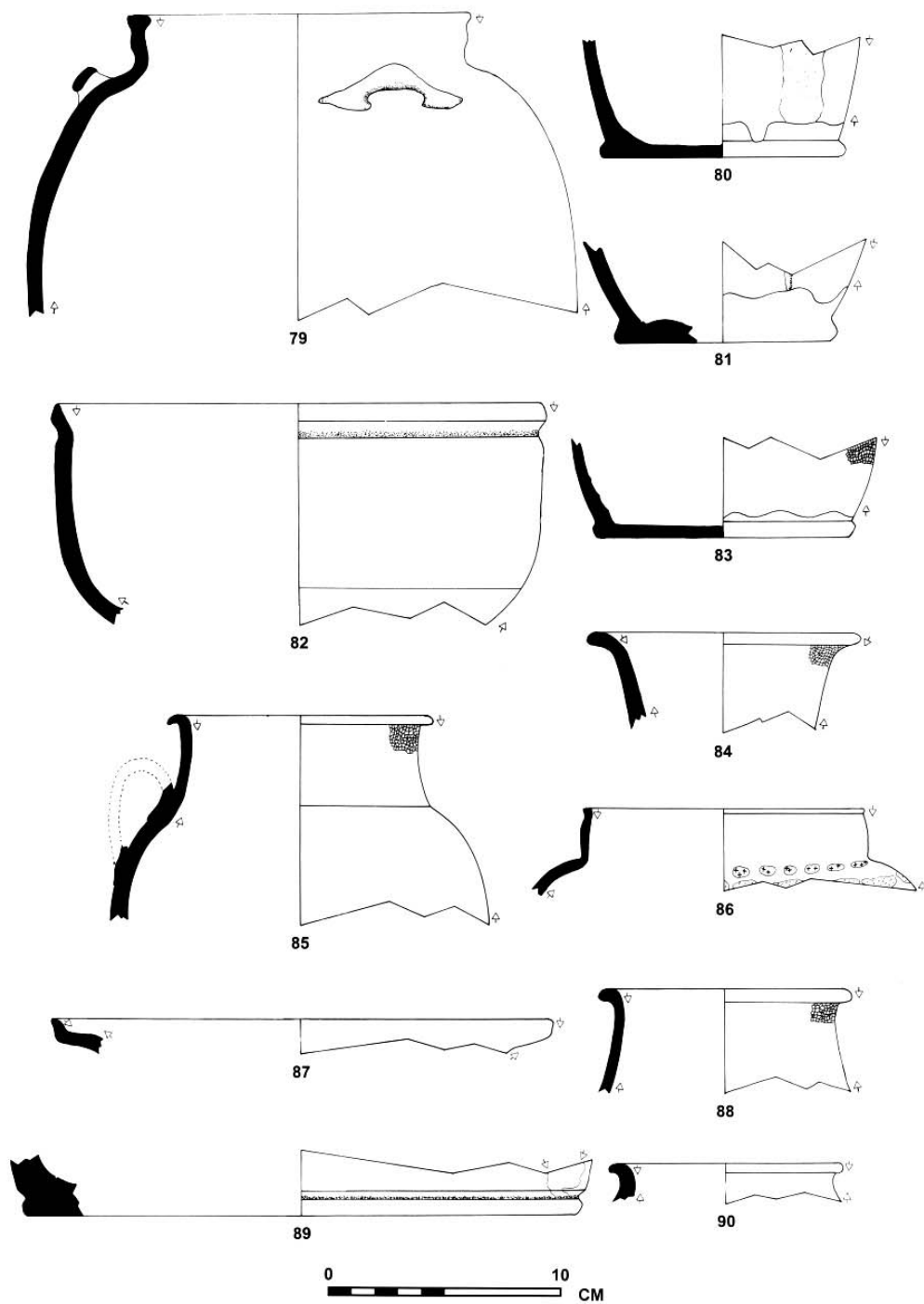
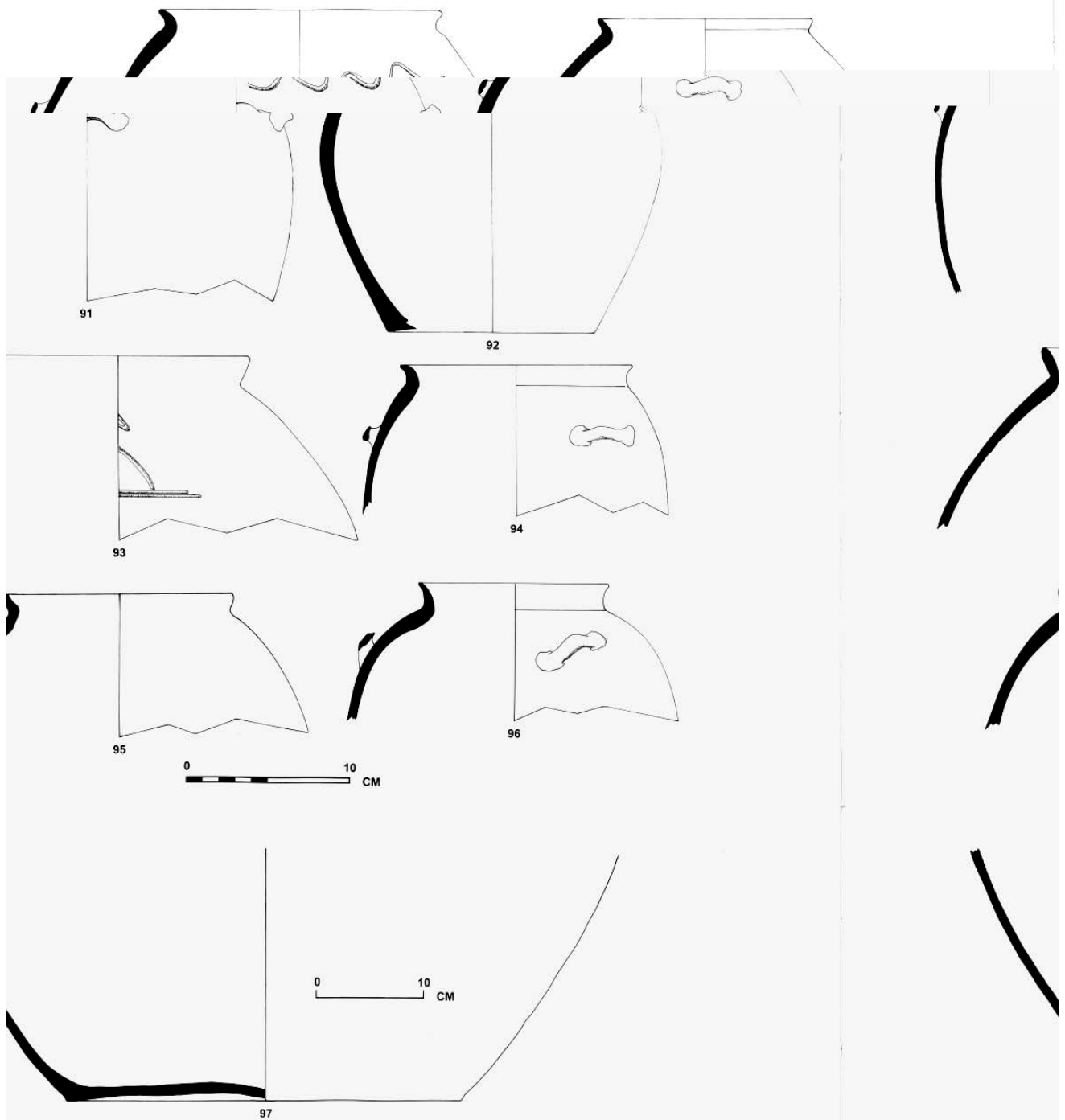


Figure 7.27 -- Changsha wares.



*Fengkai wares.*

*Figure 7.28 --*



diameter not larger than 7 cm. A kind of brownish-reddish glaze covers the entire interior, and the upper part of the exterior. The flat base shows string-cut marks sometimes, or rough finish. The body thickness of the plate is relatively thin as compared with those of Guangdong wares.

There are several green glazed bowls and shallow plates which also have finer body, neater finish and unglazed interior. These sherds have been labelled as GCGW but they could also be Changsha or Hunan pots.

#### 9. *Qujiang Ware*

The ware looks very similar to that of Fengkai except that Qujiang ware has a rusty reddish surface rather than black, and apparently is not glazed. The body ranges from hard stoneware paste to soft earthenware but is generally thicker and softer than that of Fengkai ware without the laminated effect of the Fengkai ware. Like Fengkai ware, the vessel shape of Qujiang seems to be mostly that of lug-jars. As Fengkai kilns do not have any reddish sherds, to group the pieces into Fengkai ware would miss out one type of ware yet to be identified. Wares of this group have been labelled as Qujiang ware because a kiln at Qujiang area yielded jars with similar appearance. Jars of that kind also turned up in Shaozhou prefecture mostly in contexts which have been dated to Five Dynasties-Early Song period. Mo Zhi seems to think that this group of ware was made at Lianshi, at Shiwan area in Guangdong, because many similar vessels have been recovered from burials in that area. This piece of information has yet to be confirmed.

Some large fragments of Qujiang show broad net-paddled marks on the exterior. Some of them are not unlike those of the Historical Pottery group except that the Historical Pottery group is earthenware, and the Qujiang ware is stoneware. However, sometimes the Qujiang ware do have softer paste not unlike those of Historic Pottery. In fact the two groups of wares need to be checked and sorted again.

There are fragments of Qujiang wares with iron slag, or slag-like material firmly attached on the sherds.

#### 10. *Yue ware*

The fragments with green glaze have well-adhesive glaze and dense body. A few of them are not typical good Yue examples but they could be regarded as Yue types of ware, probably from the Zhejiang area rather than from Guangdong kilns.

The only bowls recovered have everted rims but straight walls, and flat bi-bases. Another bowl which is larger in base diameter contains more than 10 small crescent-formed spur marks visible in the interior.

#### 11. *Historic Pottery*

This is a group of high-fired earthenware, red paste, no glaze but otherwise the shape is one of those horizontal lug-jars generally used during the 8th-19th centuries. Three kiln sites in Guangdong were known to have made earthenware as well as glazed ceramics during the time concerned. They are Wanshan, Fenggang in the Pearl River Delta Region, Wanwenling in the Leizhou Peninsula, Beititou and Yangshangfou in the Hanjiang River Region. All these kiln localities also produce the green ware GCGW.

Another group of wares being put together as Historic Pottery has a greyish earthenware body, sometimes quite high-fired, and has cross-paddled marks on the surface. The cross-paddled marks vary in size on different sherds. When this group of ware was

shown to Mo Zhi, he has no hesitation calling them "Han". Meacham is equally confident that this group should be Tang.

#### *12. Industrial Ware*

This type is earthenware in nature, but the thickness, the size and the coarseness of the body suggest strongly that these are not for domestic utilitarian purpose -- hence the name. They might be related to the kiln industry, or some other heavy duty job of historical period. The distinctive type of vessel has 3 legs and 3 curled hooks -- possibly a very small stove or a very large lamp.

Ceramicists in Guangdong do not seem to know about this type, hence strengthening the idea that the Coarse Ware A group could be a local Chek Lap Kok product.

#### *13. Coarse Ware A*

Another temporary nomenclature for this unknown group of ware. It is distinctive in having very loose paste which tends to crack. The surface is rough without being glazed or polished. Surface colour ranges from dull brown to slightly red. Vessel shapes seems to include bowls of everted rim. The colour of the ware tends to be greyish black. Some pieces have the coarser kind of Fengkai Blackware look. It might be possible that Coarse Ware A is in fact a coarser kind of Fengkai production.

#### *14. Coarse Ware B*

This group of ware are not vessels or containers. They are earthenware in nature, and have functions other than being container. There are half of disc of roof-end tile-like object with incised lines, and fragments which might be water pipes.

#### *15. Unknown*

This group of ware are certain to be historical period. But they are either too weathered, without traces of shape, glaze, or surface finish to indicate the types of ware they belong to.

#### *16. Unknown 1*

This group of ware has a greyish black surface, which might have been the result of a thin glaze, but it might just be a black slip with patches of accidental glazes on it. The body of the ware is soft and fine and chalky, unlike that of Fengkai which is always hard. The Unknown 1 seem to be jars, with an incised horizontal line at the shoulder.

#### *17. Unknown 2*

These are sherds of large jars, with a well-adhering glaze somewhat brown or yellowish green in colour. The glaze is thick and well vitrified. Ho suspects that they could be later than Tang. Meacham thinks they look very much like those recovered at Penny's Bay and therefore should be Ming in time.

#### *18. Unknown 3*

Jars, like those of Qujiang, but they have thick brown glaze on both sides of the wares.

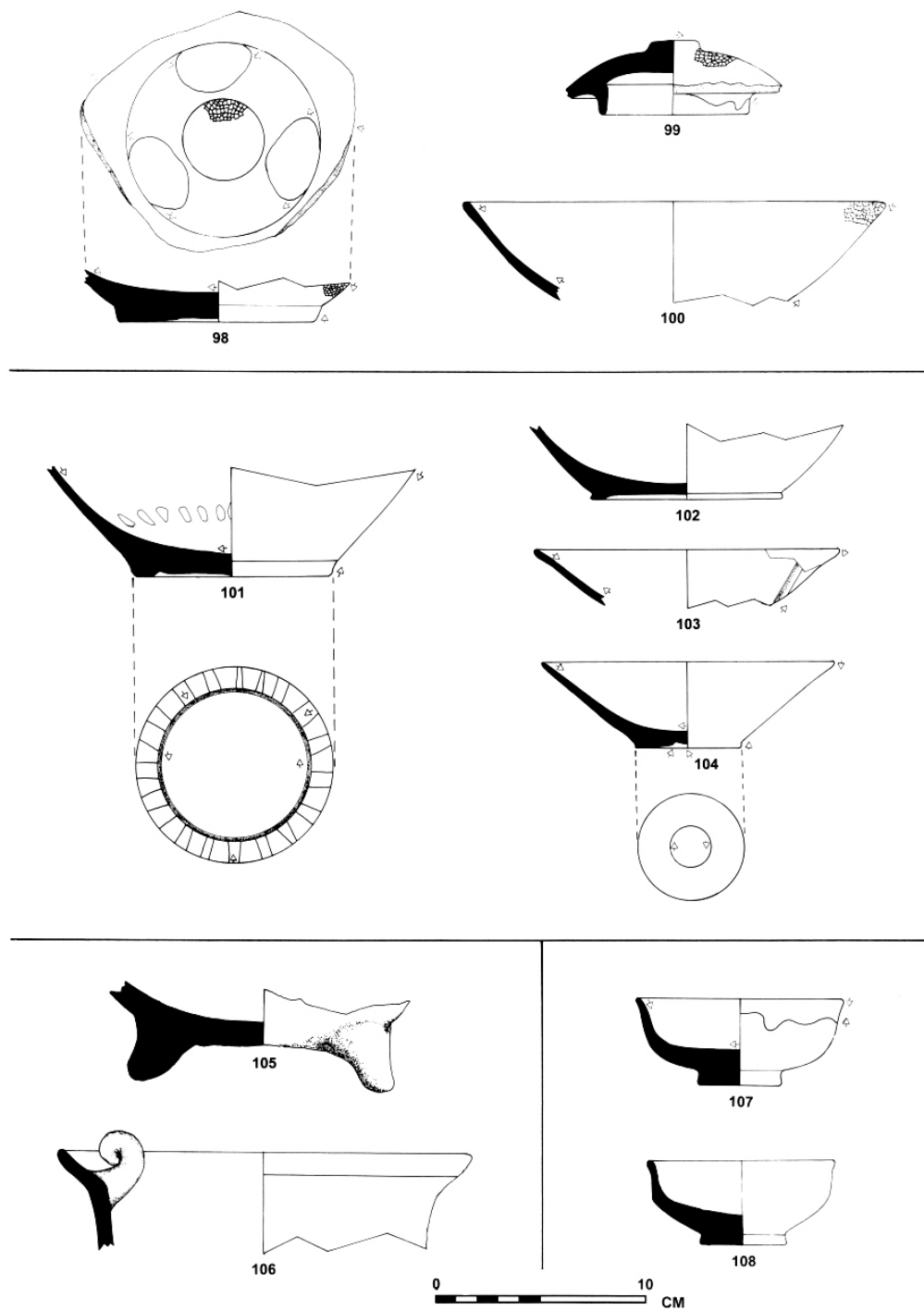


Figure 7.29 -- Meixian (above), Yue (centre), Industrial (lower left) and Haikang (lower right) wares.

19. *Unknown 4*

Lugged-jars, broad rim, no glaze left. Hard stoneware body.

20. *Blue-and-white*

Most of the small sherds of blue-and-white cannot be older than 19th century. They are either Wunyu (Wanyao) products from Taipo (Dapu) or Yaoping wares in Guangdong.

21. *Ding Ware*

Only two small fragments were recovered from the Sham Wan Tsuen 1991 excavation. They seem to belong to a vessel with melon-shaped body. Ding ware is distinctive in having very thin and dense white body. The vessel is covered with transparent glaze showing the whiteness of the body. The samples from the site do not belong to the high quality category of Ding ware showing greyish colour. Ding ware was made in Hebei Province.

Some scholars may prefer to further distinguish this group of fine white ware into Xing of Ding kilns. It has not been attempted here since the two kiln sites overlapped in production, times and were close enough to each other to be considered as one complex.

22. *Meixian Ware*

The vessels have a smooth green glaze with large crackles which usually cover the entire vessel surface except the base. In some cases even the base is covered with glaze except for three arch-like spurmarks. Bowls and jars are the most common type of vessels from Meixian. The ware was made at Meixian area (Shuiche) in the northeastern part of Guangdong.

23. *20th Century Wares*

These are fragments of very recent date, probably not older than this century. Some of them are sherds of modern burial jars.

24. *Post 10th Century Wares*

These are jars and basins with brown glaze which are not typical Tang wares in the south. These are likely to be at least late 10th century or even 11th century wares. The coarse jars and basins could be products from a number of kilns in Guangdong : Qishi (near Fo shan), Xicun (near Guangzhou), or even Bijia shan at Chaozhou.

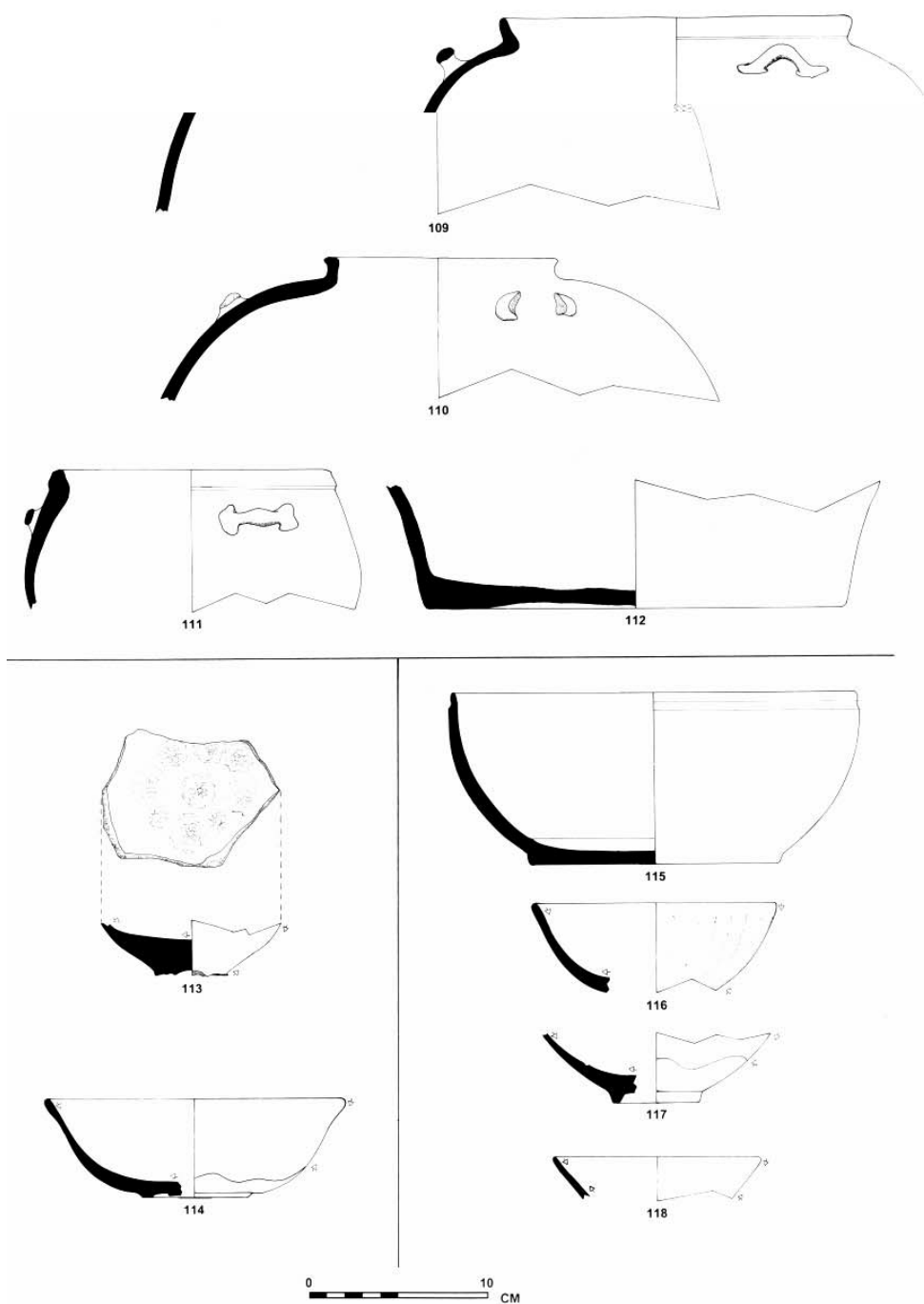


Figure 7.30 -- Qujiang (above), Hunan (lower left) and Guangdong, Sung and Ding wares (lower right).

Figure  
(lower right)

#### GUANGDONG COASTAL GREEN WARE (GCGW)

1. base with greenish crackle glaze on interior and part of exterior.
2. complete flat-based bowl with yellowish green crackled glaze all over, very worn.
3. whole base with interior of greenish crackled glaze and pale blue edges to spur marks, some traces of glaze on exterior.
4. almost whole dish or lid, traces of creamy glaze inside and out, spur marks on bottom inside.
5. base with traces of greenish crackled glaze (blue edged on outside) 4 cms from bottom.
6. four adjoining sherds making almost complete dish or lid; traces of glaze inside, "dripping" over up to 1/3 of outer side, incised decorative line inside, 3 cms down from rim.
7. vessel with thin greenish yellow glaze inside and top outside; crackle inside base and spur marks.
8. two adjoining sherds giving rim to base profile of small lidded pot with 2 vertical lugs (2 missing), lid missing, crackled green glaze all over.
9. part of flat-based bowl, discoloration on outside where glaze is worn off.
10. vessel with crackled green glaze inside and top outside; incised line inside.
11. rim with green glaze on exterior with crackle.
12. rim with green glaze with small crackles.
13. small bowl(vessel) with reddish brown glaze all worn off inside and out.
14. small flat bottomed bowl with 2 concentric rings incised on inner base, worn beige glaze inside and out.
15. small bowl with reddish brown green glaze on entire interior with crackle; piece is not symmetrical.
16. rim with green glaze mostly worn off exterior and interior.
17. vessel or bowl with green crackle glaze on all of interior; design groove on interior 1/3 down from rim.
18. small dish or lid with flat base, uneven yellowish green crackled glaze inside and approx 1 cm from edge of outer surface.
19. base with small flat base; greenish crackled glaze inside and out, spur mark on base edge.
20. three rim sherds, shallow bowl, worn, crackled yellowish green glaze inside, partially glazed outside.
21. leg or handle with dark glaze inside; broken stump of leg or handle.
22. bowl with glaze worn off interior and exterior.
23. bowl base on low 0.7 cm foot with circular indentation or unglazed outer bottom; traces of dark green glaze inside and to 2 cm from base outside, encrustation (spur mark?) inside.
24. lid or shallow dish of soft paste; possibly western Guangdong.
25. neck rim sherd with worn yellowish green glaze outside and partially inside; no glaze(or worn off) on top of rim.
26. bottom rim; indented rim and shoulder of jar, traces of greenish glaze outside.
27. small flat-based pot with curled rim, uneven milky green glaze inside and most of outside, traces of obliquely applied lug.
28. large double-rim sherd with one lug high on shoulder; brownish green glaze on both sides, more worn inside, incised decorative lines outside.
29. base with spur marks creating check design on interior of base; green glaze.
30. rim with raised-line decorative band 3.5 cms from rim edge outside, green crackled glaze both sides.
31. very thick jar rim sherd with uneven crackled green glaze outside and "drips" on top of otherwise unglazed edge, unglazed inside.
32. rim with brownish green crackled glaze inside and out; unglazed spur mark on top edge; traces of broken off lug on shoulder.
33. flat-based bowl with incurved rim with worn yellowish green glaze inside and top outside.
34. uneven green-glazed spout on body sherd, decorative line incised above spout.
35. jar with lugs.
36. lugged jar, yellowish green worn glaze inside and out but outside base and 2-3 cms sides unglazed.
37. rim with broken lug; green glaze exterior worn off on interior.
38. rim with 1 complete lug; green glaze with crackle.
39. fitted lid, edge chipped, green glaze inside and out; very worn on outside where also concentric incised bands.
40. whole base and 3 adjoining body sherds with yellowish green glaze on rough inner surface and almost to base of outer surface.
41. vessel or basin with reddish brown with green glaze mostly worn off.
42. base with low foot rim; green glaze on inner surface with crackle.
43. rim and shoulder with small horizontal lug, green glaze outside and partially inside, incised mark inside (accidental?) glaze worn on rim top.
44. basin with reddish-brown with green glaze, fine crackle.
45. rim with green glaze mostly worn off interior and exterior.

46. rim with green glaze on interior, worn off exterior; feature on interior and design groove through feature.
47. rim of small jar with lug on shoulder; brownish glaze on outer surface, unglazed inside.
48. rim and shoulder of 4-lugged pot, incised band at joint and "potter's mark" incision between 2 lugs, uneven glaze inside and out with spur marks on top of rim.
49. flat top rim with spur mark, trace of broken lug 5 cm down, on shoulder?; uneven crackled green glaze inside and out.

#### CHANGSHA WARE

50. four adjoining pieces from whole base to rim, yellowish green mottled glaze inside and 2/3 outer surface; incised marks on unglazed parts-unintentional?
51. three adjoining rim sherds, unglazed except for yellowish glaze band on rim edge: up to 1.5 cm outer side, just over 2.5 cm on inner side.
52. vessel with worn greenish glaze inside and top outside.
53. rim with smooth green glaze with crackle.
54. vessel or bowl of greyish-pink ware with smooth greyish green glaze.
55. base or rim of bowl with interior surface glazed, exterior rim glazed and crackled.
56. shallow bowl of 5 adjoining sherds, pinkish green glaze inside and down to base outside which is 0.5 cm high with indented centre.
57. almost complete bowl yellowish glaze with blue patches on upper half of sides both inside and out; half of unglazed portion outside baked red.
58. green crackled glaze bowl with painted Arabic design.
59. half complete bowl.
60. base piece unglazed outside, traces of glaze inside.
61. rim with dark brown and green glaze with painted pattern inside.
62. two adjoining base pieces, traces of glaze inside, discoloration and incised lines outside above 1 cm foot with groove.
63. piece of grooved 0.8 cm foot, traces of glaze inside.
64. piece of thick bowl base with 0.8 cm unglazed grooved foot, traces of glaze inside and above foot outside.
65. piece of 0.3 cm foot with worn glaze inside.
66. piece of base with grey green glaze inside, glazed down to 0.3 cm foot, incised line 1.5 cm above base outside.
67. two adjoining sherds, rim to base of small shallow bowl, green crackled glaze inside and 1/2 down outside.
68. one base piece and 6 body sherds with spout and relief figures; yellowish green glaze inside and out, base bottom unglazed.
69. rim sherd fit with 70, beige partial glazing in and out.
70. two adjoining rim sherds of a plate?, beige partial glazing inside and out, fit with 69.
71. six sherds from thick bowl on 1.2 cm foot(flat) unglazed except for yellowish green worn glaze band along rim inside and out.
72. lid with green glaze with small crackles.
73. lid with green glaze with small crackles.
74. bowl on 0.3 cm foot with indented centre and concentric groove, green glaze inside and out, base unglazed but indentation and groove glazed.
75. bowl on 0.5 cm foot with indented centre, and incised potter's mark, yellowish green glaze inside and 1/2 way to base outside.
76. sherd with very worn brown glaze, incised X mark and broken-off protrusion outer side.
77. three adjoining base sherds of bowl with green crackled glaze inside, and outside down to base edge, potter's mark in incised circle on base; double incised line decorative band 5 cms from base, 3 spurs (+ 1 missing) on bottom inside.
78. four adjoining rim sherds and base of flat bowl, 0.5 cm foot unglazed and grooved, yellowish green crackled glaze inside and to base outside, brown painted line decorative inside.
79. brownware rim of jar with brown smooth glaze, brownware exterior and interior glazed.
80. base and body sherds; flat pot base, inside unglazed, outside to base: white crackled glaze with blue green decorative glazed streaks; 6 sherds with same blue/green decorative streaks on white glaze, 1 spout, 1 neck sherd.
81. jar base with green glaze with design groove in body.
82. neck rim sherd with uneven worn green glaze inside and out.
83. jar base with green glaze with small crackles.
84. neck rim of jar with brownish green glaze both sides; corrugated surface with sides.
85. three adjoining rim and neck sherds with lug attachment marks plus 4 "melon" body sherds and one loose

- lug, worn uneven crackled green glaze inside: neck and partially down outer body inside unglazed.
86. pot rim, unglazed inside, grey glaze outside and over into inner rim, brown line at outer edge of rim and row of brown dots at top of shoulder underlined by uneven blue glaze band.
87. small green glazed rim sherd.
88. three adjoining sherds, bowl wall, base missing, double glaze, green body with brown rim (run effect inside).
89. small piece of thick base with trace of blue glaze.
90. neck rim sherd with worn beige glaze all over.

#### **FENGKAI WARE**

91. two adjoining rim sherds of large narrow necked jar rim, corrugated brown body with 4 (of 5?) lugs, wavy line incised between lugs in 2 cases.
92. three adjoining sherds making up two thirds of 6-lugged narrow-necked jar, matt brown glaze inside and out, flat base unglazed outside, corrugated body.
93. rim and shoulder piece with incised line on shoulder 7 cm from rim lip, and part of incised decoration? character? potter's mark?
94. four adjoining rim sherds making up most of jar rim, 3 lugs (of 4?) on corrugated brown body.
95. two adjoining rim sherds from narrow necked, brown jar.
96. numerous sherds of small necked brown lugged jar.
97. very large incomplete base piece.

#### **MEIXIAN WARE**

98. whole base with greenish crackled glaze all over except for 3 spur marks underneath base, located around a circular indent approx 1/3 of diameter.
99. fitted lid with knob on top, green crackle glaze on rough inner surface and almost to base of outer surface.
100. shallow bowl rim sherd, with decorative? indentation; bluish green crackled glaze inside and out.

#### **YUE WARE**

101. whole base, almost flat with spur marks on outer edge of base and inside; green glaze inside and outside down to base.
102. shallow-indented base, creamy traces where glaze worn off outside (spur marks?) on inner surface.
103. rim to base of shallow plate yellowish green glaze all over; design groove on outer surface.
104. two pieces, rim to base, of shallow dish, fine grey green glaze inside and out, base glazed with central indentation, glaze worn in parts.

#### **INDUSTRIAL WARE**

105. two feet of tripod base with carinated flat bottom.
106. decorated rim piece with 2 incised lines on outer edge and hook-like protrusion inside. Matt coating-glaze?

#### **HAIKANG WARE**

107. whole base to part rim of small dish; very worn yellowish glaze inside and 1 cm down outer rim, incised lines on bottom inside.
108. small bowl on low flat-bottom base, glaze worn off but discoloration inside and 0.5 to 2 cm of outer rim, crack or finger nail indentation at centre of inner side.

#### **QUJIANG WARE**

109. rim piece with leg on shoulder, worn and pitted matt brown glaze inside and out, corrugated surface inside. groove at join of rim lip and outer body.
110. rim of fat, narrow-necked jar with broken lug, worn brown glaze all over.
111. part of base and flared side of jar; worn brown glaze outside? red surface inside on pale beige paste.
112. rim of 2 adjoining pieces with small shallow lug, red paste, brown glaze on outer surface.

#### **HUNAN WARE**

113. base sherd with broken-off protuberance on outer side of curve -- foot rim? whitish glaze on both sides, incised floral pattern on flat inside of curve.
114. two adjoining rim to base sherds with bowl matt worn brown glaze down inside and outside walls, base inside and out unglazed.

#### **UNKNOWN**

115. vessel of 3 adjoining pieces; green lead glaze, corrugated inner surface.

#### **GUANGDONG WARE**

116. two adjoining rim pieces of bowl, uneven grey green glaze all over, smooth inside, vertical lines outside.

#### **SONG WARE**

117. celadon base piece with 0.5 cm foot rim, grey green glaze inside with incised line, glaze reaching almost to foot outside.

#### **DING WARE**

118. rim of dense body with light blue/smooth white glaze.



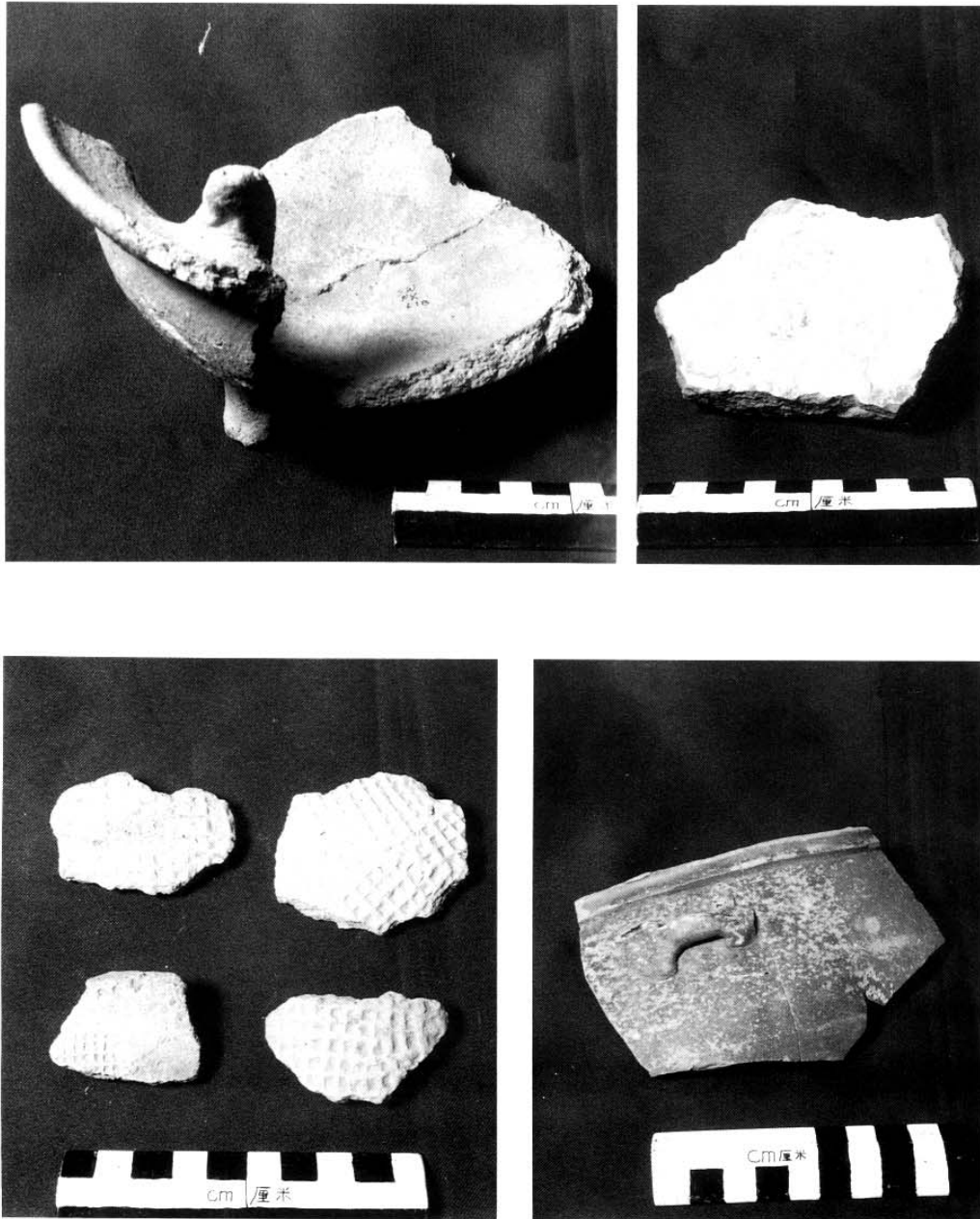


Figure 7.31 -- Upper left Industrial ware, lower left net-stamped earthenware, upper and lower right Hunan ware

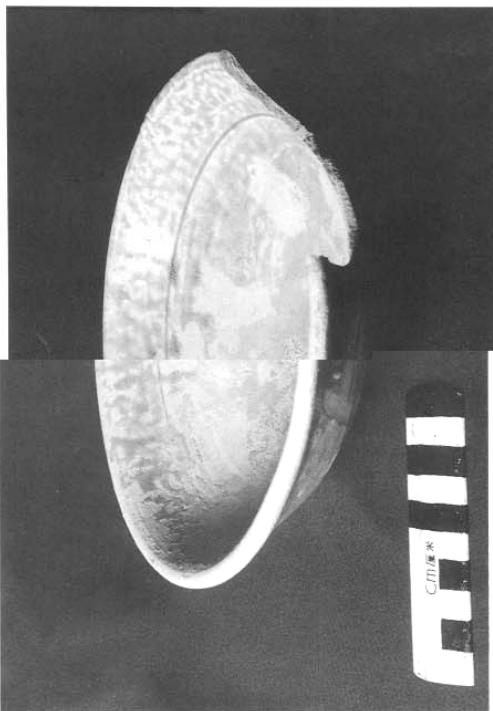
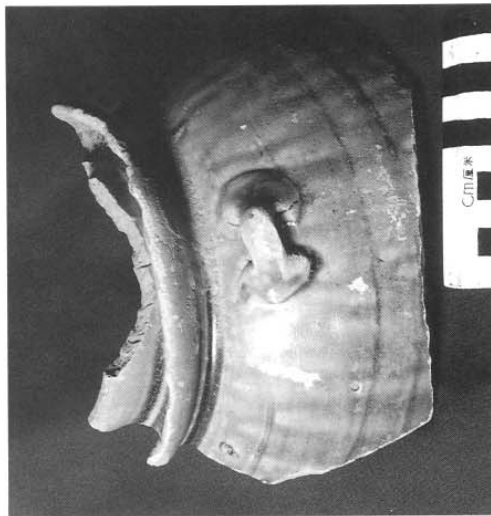
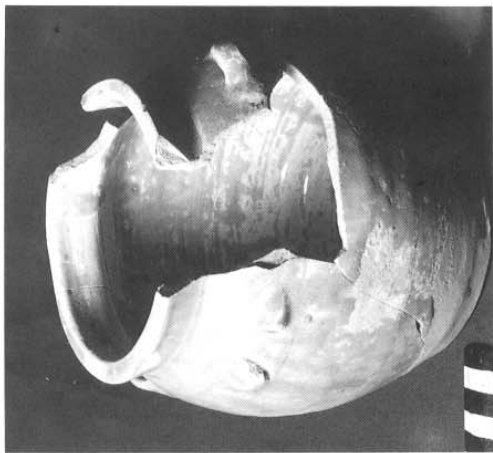


Figure 7.32 -- Guangdong Coastal Green Ware.

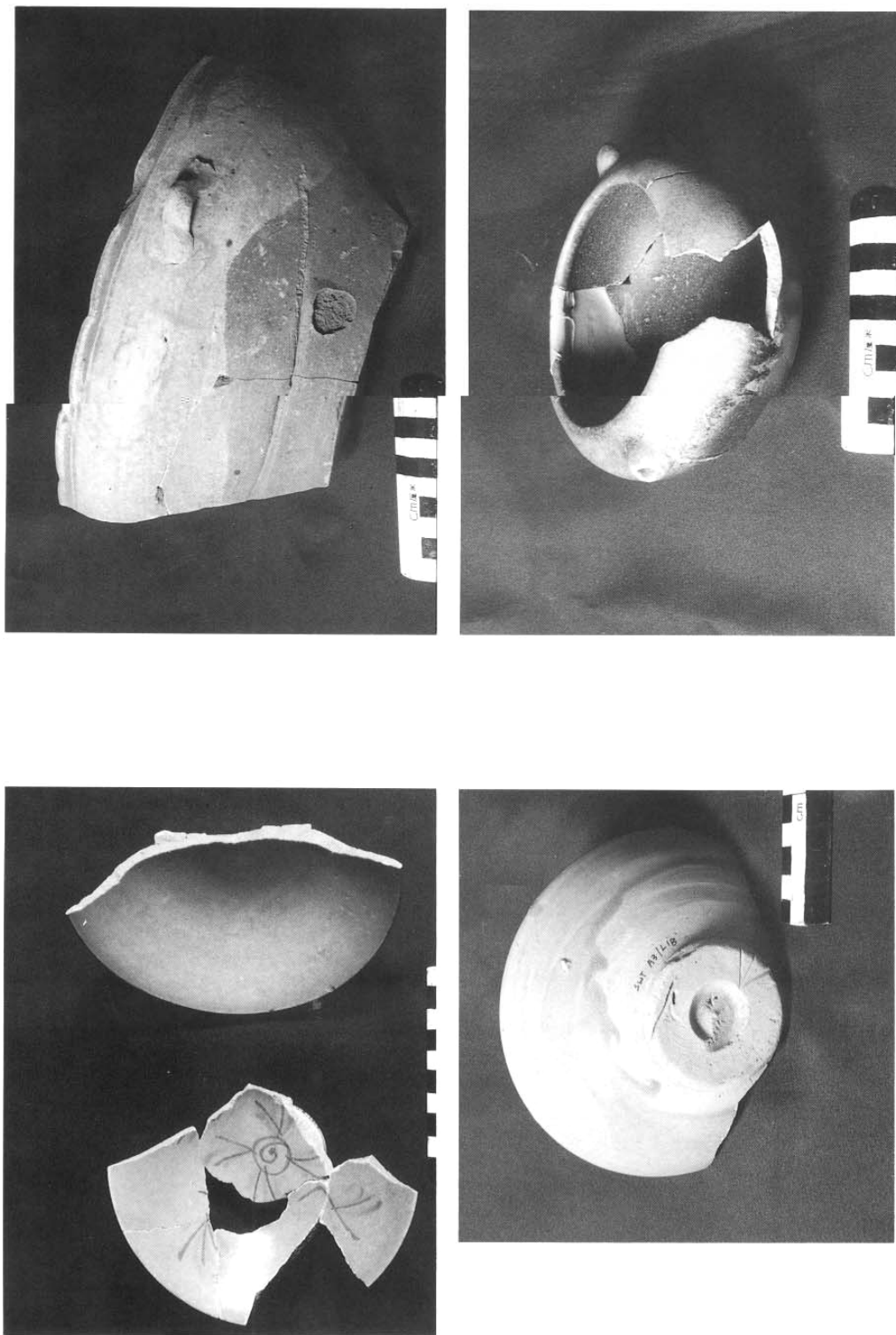


Figure 7.33 -- Left Changsha wares, upper right Gulao ware, lower right Hunan ware.

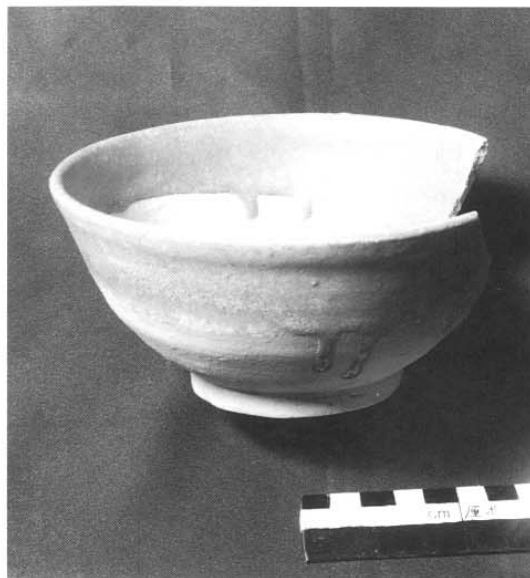
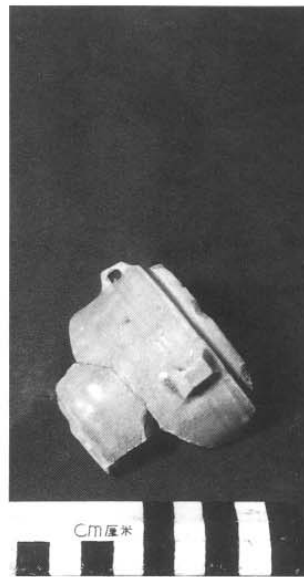
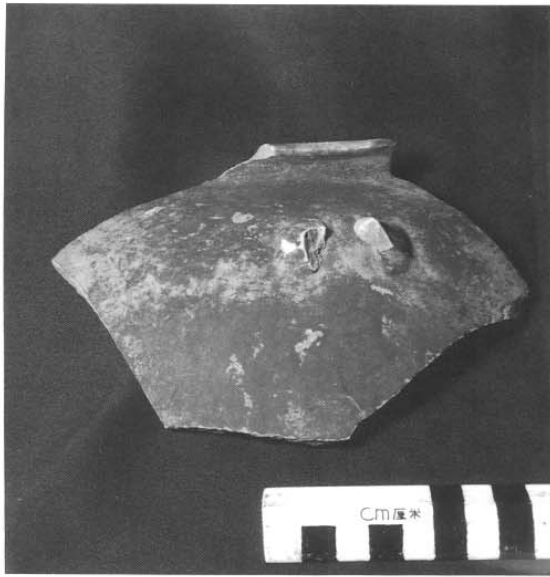


Figure 7.34 -- Upper left Qujiang ware, upper right GCGW, lower left GCGW with stilts for stacking in the kiln, lower left unknown.

## DISCUSSION OF TANG LIME KILNS AT SHAM WAN TSUEN

[This section was written by Hugh Cameron]

### INTRODUCTION

On all the Tang lime kiln sites in Hong Kong a major problem has been that erosion of the sand in which the kilns are situated has resulted in all the structure at and above the original ground level being eroded away.

The very substantial base of all these kilns and the massive support bars in some of them which seem to form the basis of a fire grate have puzzled the excavators because there has never been present a heap of rubble consistent with a large structure or body for the kiln. The hemispherical or bell shaped nature of the bases with the top diameter much reduced below that of the floor has led to the idea of a small structure on top (Cameron 1979:142) and to the statement by the late James Crawford (1990:42) "...there could, if the wall is projected, have been no upper part of the kiln at all."

The recent excavations at Sham Wan Tsuen, with more extensive erosion at ground level indicates that the last statement given in some surprise by Crawford is in fact the answer. Some, at least, of these kilns may have been an open bonfire on a complicated grate of firebars laid on clay supports radiating outwards from the perimeter of the base. It is possible during use that the lime was collected or pushed into the base until it was full and the firing operation stopped. When it cooled the lime could be dug out via the stone lined channel which every kiln has. The full contents would have amounted to some 3 cubic metres.



*Figure 7.35-- The kiln debris and structural pieces inside kiln 12.*

This also explains a structural problem in previous reconstructions. The kiln supports of the grate do not completely bridge the base structure but only protrude into it some 30 cm. The centre of the grate is probably a hole over 1 m. in diameter.

## THE SHAM WAN TSUEN KILNS

Earlier excavations at Sham Wan Tsuen were carried out by the Society between 1979 and 1984. On that occasion parts of 7 lime kilns were found and reported. The most recent excavation in 1991 has completed the excavation of the sand bar site and has uncovered another 6 kiln structures, numbered 8 to 13.

The plan of the site, now complete, shows that the kilns were in two parallel rows running roughly east-west along the edges of the sand bar. The sand bar fell away to a depth of 1.2 metres immediately to the north of the row of kilns 10, 3, 4, 5, 12, & 11, and what was described in the earlier report as a pit to the north of the kilns 4 and 5 can now be seen to be the edge of the sand bar. There were two clay troughs, one with each row of kilns. These were probably for mixing clay for kiln construction. The sloping surface of the sand bar at the northern end of the site was covered with discarded Tang pottery.

Kiln 8 was represented only by a circular stone floor with a fillet of lime around

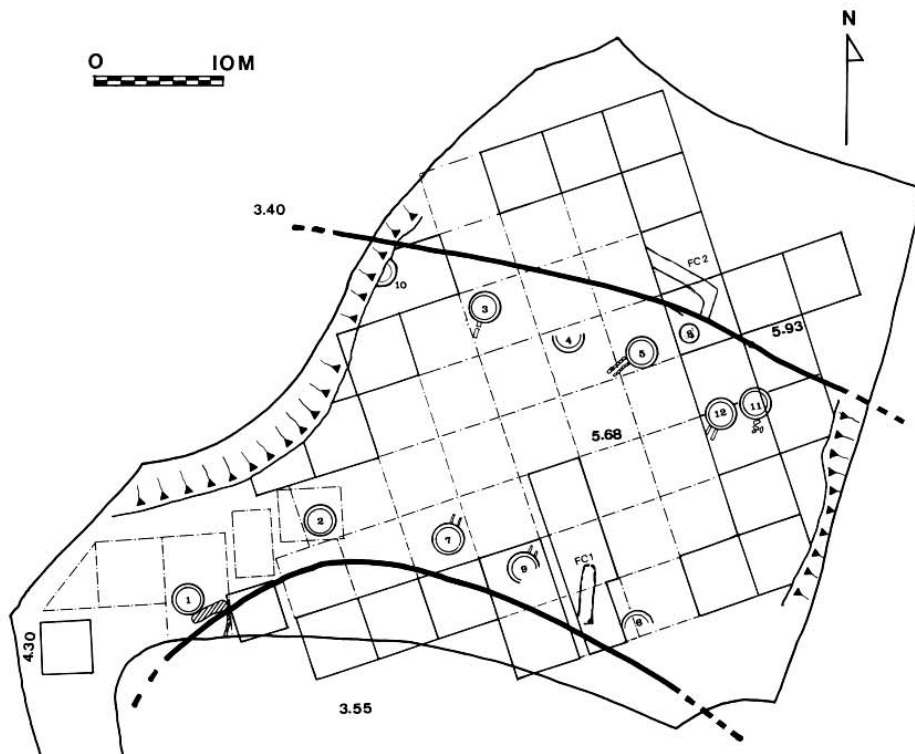


Figure 7.36 -- Excavation plan of the sand bar site showing the possible shape (heavy line) of the sand bar in Tang times.

the edges (see Figure 7.10). It was at only 15 cm. below the existing surface level. The villagers in recent years had scraped the surface of the cultivated plot on the sand bar in order to extend its area, and had certainly brought this feature nearer to ground level. Nevertheless, this kiln floor was at a higher level than others by 1 m. It clearly overlay adjacent the clay trough and it does not lie on the same line as the other kilns in this row.

Kiln 9 (see Figures 7.6 and 7.7) was typical of the ones from the earlier excavation. It could not be excavated in 1972-84 because a modern grave lay above it. It was of 2.18 m. internal diameter with a stone floor 1.20 m. below the existing clay structure. The stone lined channel was 0.90 m. above the floor.

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Kiln 10 was a remnant only at the N. end of the site. Reduction of t on the seaward side had caused the disappearance of half the base. The interr was 1.80 m. and the remaining walls 18 cm. thick. The floor was 35 cm remaining clay structure and was covered with a 25-30 cm. thick layer of ha ash.

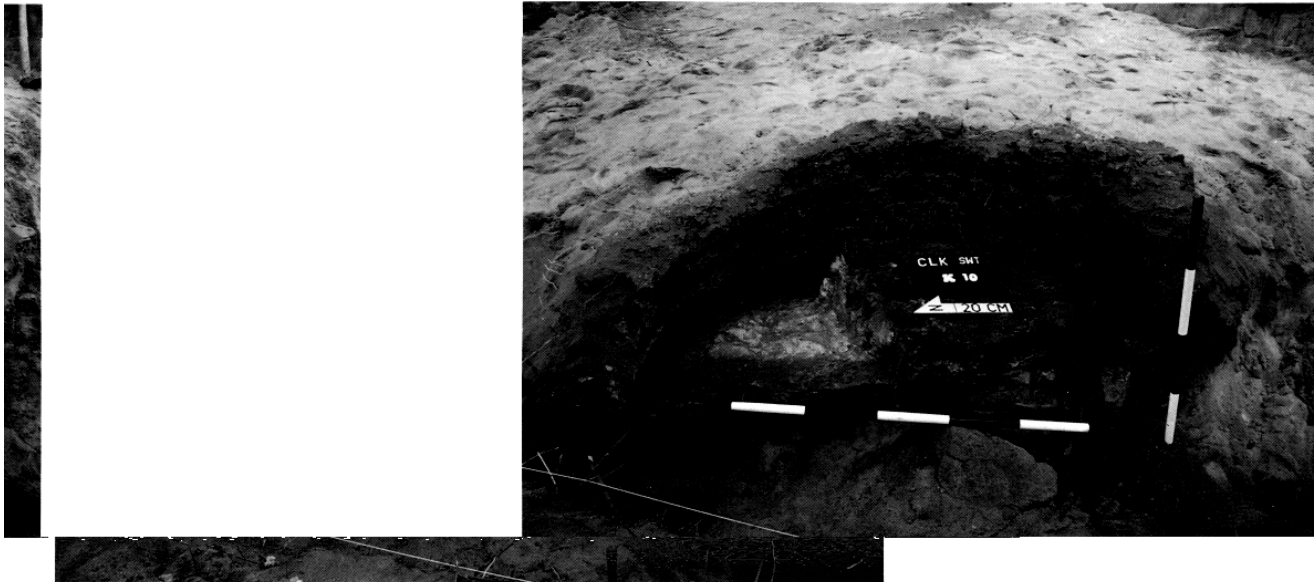


Figure 7.37 -- Kiln 10 after excavation.

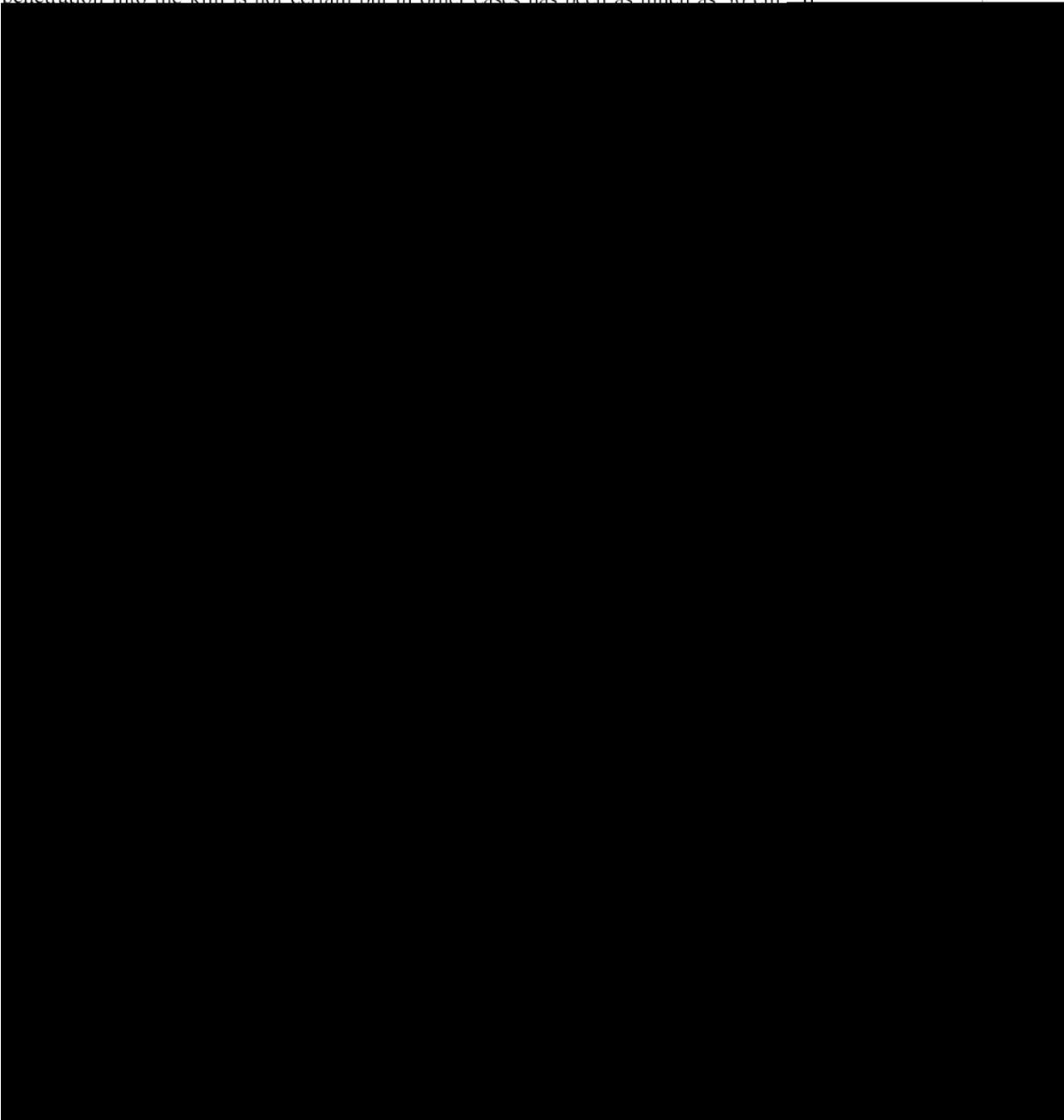
Two of the newly found kilns (11 and 12) provide better evidence of the construction of the Tang period lime kilns than any previous excavation on this or any other site in the Hong Kong area. It is apparent that these two kilns and probably most the kilns previously excavated were unlike any of the reconstructions which have been put forward.

The two kilns were adjacent and similar but kiln 12 was out of operation when kiln 11 was built though the builders of 11 knew of the presence of 12. Both kilns had a

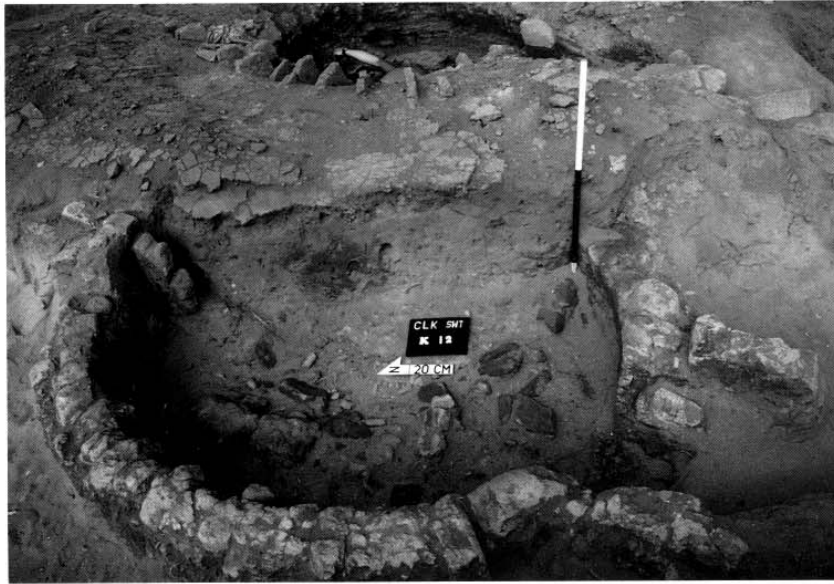
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dished plastered clay surface at ground level surrounding the base of the kiln. The maximum diameter for this clay surface was 6.40 m. for kiln 11 and its thickness was approximately 6 cm. but up to 8-10 cm. in places. The shape was roughly circular but not necessarily the neat circle shown in the plan. The clay surface was laid on sand so that it sloped gently down to the perimeter of the base. The diameter of the internal top of the base of kiln 11 was 1.80 m., very close to the average for all these kilns, and the thickness of the walls 30 cm., also normal. Thirty-two deep clay props 6-8 cm. wide had extended towards the centre of the kiln but were now all broken off. This is a high number of props. For clarity, only half are shown in the reconstructed section. Kiln 12 probably had only eighteen but they were much thicker. The extent of the props' original penetration into the kiln is not certain but in other cases has been as much as 30 cm. It







*Figure 7.39 -- Kiln 12 partially excavated, with the mortar surface from kiln 11 covering part of it.*



*Figure 7.40 -- Close-up view of the mortar surface around kiln 11.*

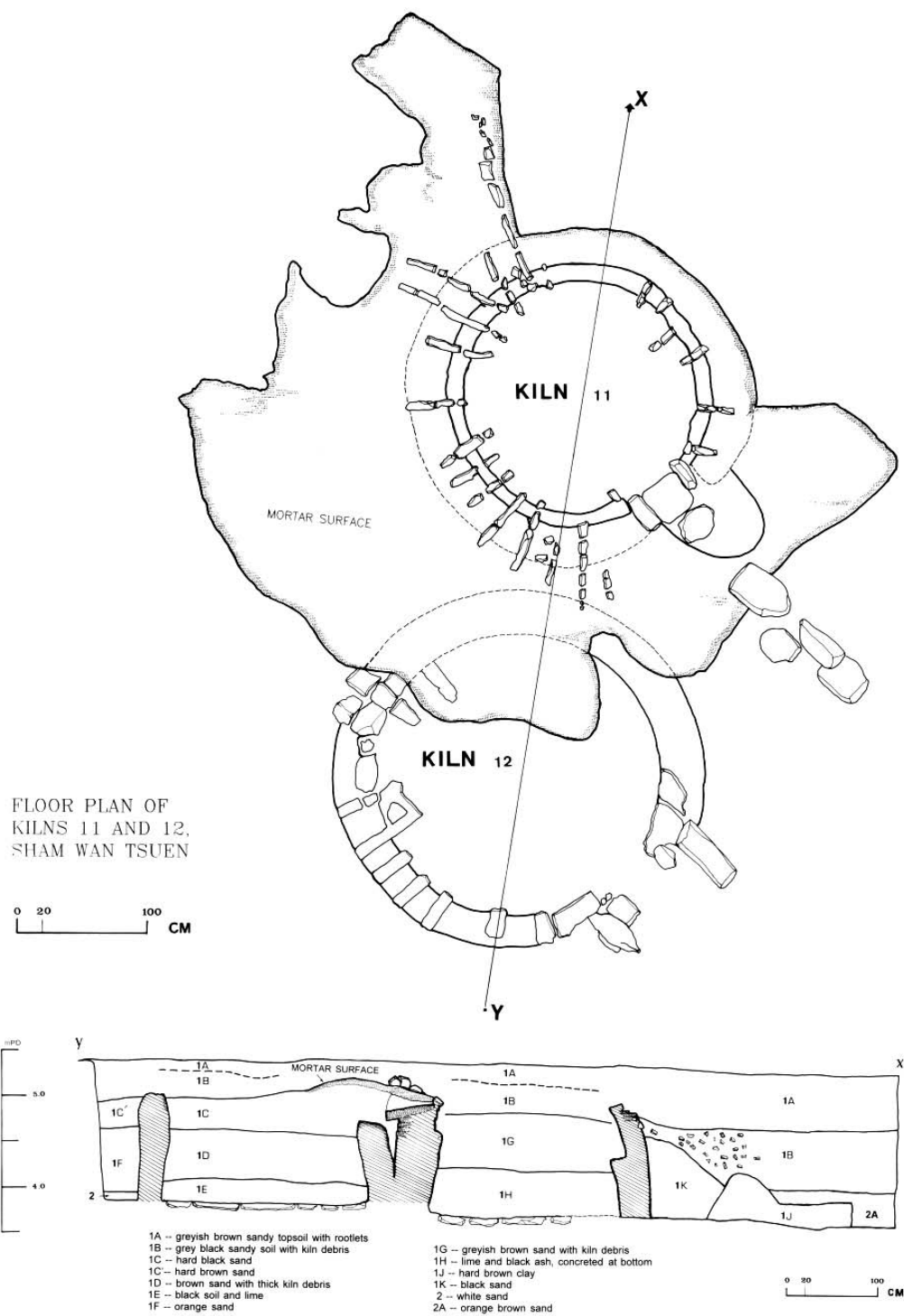


Figure 7.41 -- Plan and profile of kilns 11 and 12.

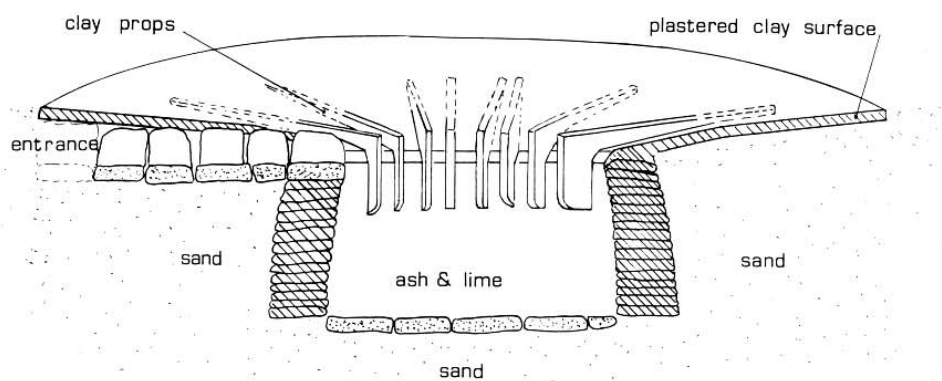
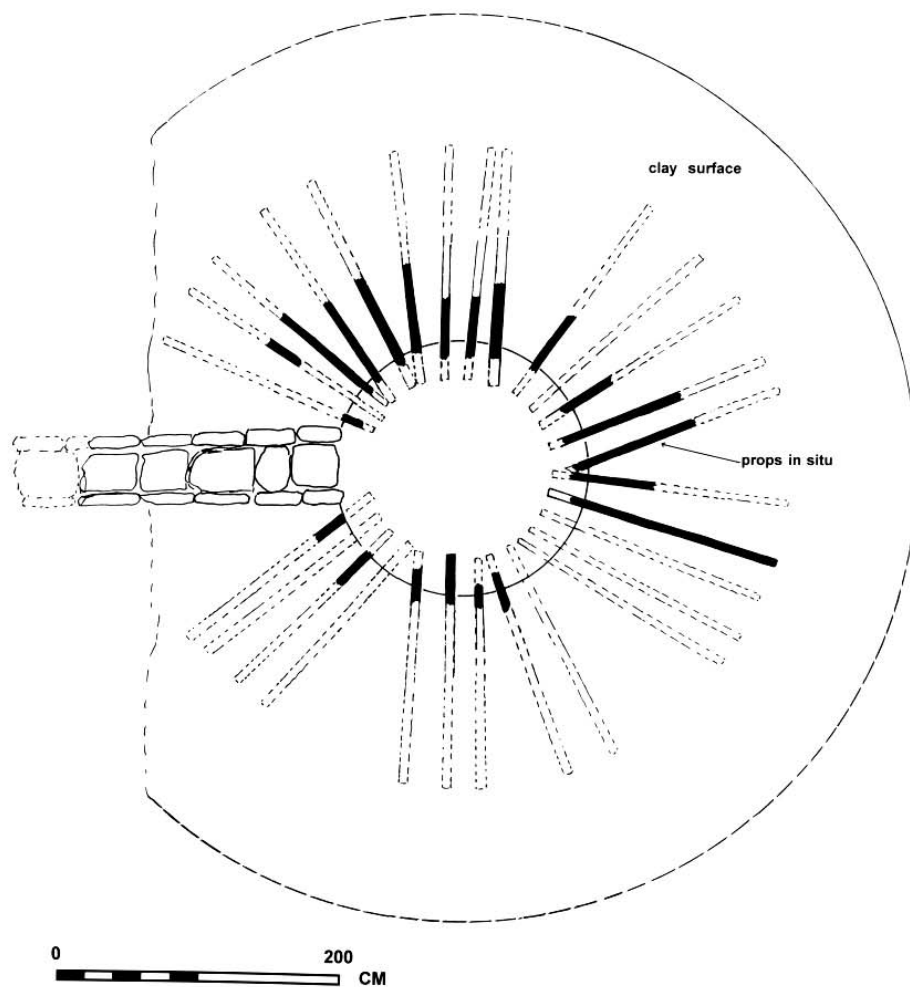


Figure 7.42 -- Reconstruction of kiln 11.

## RECONSTRUCTION OF TANG LIME KILNS

If, as is possible, all the other Tang kilns were of this construction then it explains why it was always so difficult to understand the lack of strength of the grate. The full extent of the diameter of the base (always about 1.80 m.) was not bridged by the clay supports. It is now assumed that the shell and coral burning took place round the perimeter of the grate and the fully burnt lime was pushed into the centre to fall into the large container of the base. When this was full the operation would be stopped and when the contents had cooled sufficiently the lime would be dug out via the stone channel which was often in past reports referred to as a "stoke hole."

The flat and roughly horizontal tops of the props had been extended radially outwards in all cases by the addition of clay strips of the same width and of tapering depth in such a way as to provide a flat platform just below the outer perimeter of the clay surface. Both kilns had the usual "entrance" or "stokehole" 30 cm. wide with flat stone to form the base flanked by upright stones to define the sides. There was no evidence of a superstructure above this penannular grate. The inner ends of the props were bonded into the structure of the base but the clay radial extensions merely rested on the clay surface and were not bonded into it in any way.

The body of kiln 11 was constructed of clay below ground level of continuous clay strips about 6 cm. thick laid one on top of another in a continuous coil. The radial width of the wall was about 50 cm. and it was backed by the natural sand now discoloured by the heat of firing. The base of the kiln was the usual thick granite slabs neatly fitted together at a depth of 1.4 m. below the rim and 1.1 m. below the flat stones of the "stokehole".

The operation of these kilns is unlike that of any modern kiln in that they were probably open at the top and not enclosed by a circular structure as previously thought. It remains possible that sand was banked up around the kiln but there is no evidence for this. The grate composed of "props", "bars" and "sausages" did not totally cover the kiln but left space at the centre which was accessible from the "stokehole" or "channel".

The purpose of the radially disposed props was presumably to carry the "bars" which could be laid across the props. The "bars" which were of approximately 12 x 12 cm. section in turn carried the "sausages" of 4 to 6 cm. diameter laid across the bars and parallel to the props. None of these have ever been found in situ but it is known from the debris that the "bars" supported that "sausages". The purpose of the clay pieces described as mushrooms found on all kiln sites is not certain but presumably they were to support the bars in position between the props.