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The Yorktown Pottery Industry, Yorktown, Virginia

Norman F. Barka and Chris Sheridan

This paper presents a second interim report on the Yorktown Pottery Factory, with an emphasis on the ceramic finds. An initial report on the ceramics was published several years ago (Barka 1973). Since that time, more archaeological excavation has been carried out and a second pottery kiln has been found, but the majority of ceramic finds have still not been thoroughly studied. A final, comprehensive report on the factory and ceramic products is expected in the near future.

LOCATION

The Yorktown Pottery Factory is located in Colonial National Historical Park and is owned by the National Park Service, who has sponsored much of the archaeological research. Constructed on Lots 51 and 55, which were on the southern edge of the populated area of the town, the factory was probably built in Yorktown because of the availability of local clay, a deep water harbor, and the business potential of the Tidewater area. Yorktown, founded in 1691 as a tobacco port, became a thriving settlement in the early 18th century.

BRIEF HISTORY

The Yorktown Pottery Factory was in existence from ca. 1720 to ca. 1745. Historical documentation is virtually non-existent, except for occasional references to a "poor potter" of Yorktown by Governor Gooch in the 1732-1741 period and the listing of many ceramic items in the will of William Rogers (Ayres 1977). Lots 51 and 55 were owned by Rogers, a local merchant, brewer, and entrepreneur. It was Rogers who apparently financed the pottery operation in Yorktown.

The identity of the potters, their derivation, information on the kilns, structures, and ceramics, etc., are unknown to us from documentary sources. However, Naval Officers Shipping Lists suggest that Yorktown pottery was not only sold

in Tidewater Virginia, but was exported to New England, North Carolina, and the West Indies (Ayres 1977). The Yorktown Pottery Factory was thus a successful and far reaching business venture during its ca. 25 years of operation.

KILNS

Yorktown ceramics were produced in a large and well designed factory, consisting of a well preserved complex of buildings and features that include 2 kilns, workshop-storage buildings, and waster pits (Figure 1). The main factory complex is a row of interconnected buildings, or rooms, and kilns, measuring 190 X 20 feet. Kilns 1 and 2 are situated at the south end of the complex. Both kilns are made of brick and both are of the updraft type. Kiln 1 measures 21 X 14 feet and the lower heat chamber has survived to a maximum vertical height of 4 feet. The chamber contained a main flue which connected with a firebox, in front of which was an ash pit sunk below the level of the firebox. The main flue passage was formed by a series of 6 parallel brick arches.

Kiln 2, situated 20 feet south of Kiln 1, is situated in the center of a 25 X 21 foot area delineated by 3 low marl walls. Kiln 2, only partially excavated to date, has overall dimensions of ca. 12 X 6 feet and consists of a small, 6 X 6 foot arched heat chamber, similar to Kiln 1. An apparent ash pit, stoke hole, or firebox is located at the north end of the heat chamber.

The interiors of both kilns are heavily salt glazed, suggesting that both lead glazing and salt glazing were done in the same kilns, at different firings.

CERAMICS

The Yorktown Pottery Factory produced large quantities of utilitarian lead glazed red earthenwares and grey salt glazed stonewares. A total of 23 basic shapes have been discerned to date, including 17 earthenware shapes and 6 stoneware

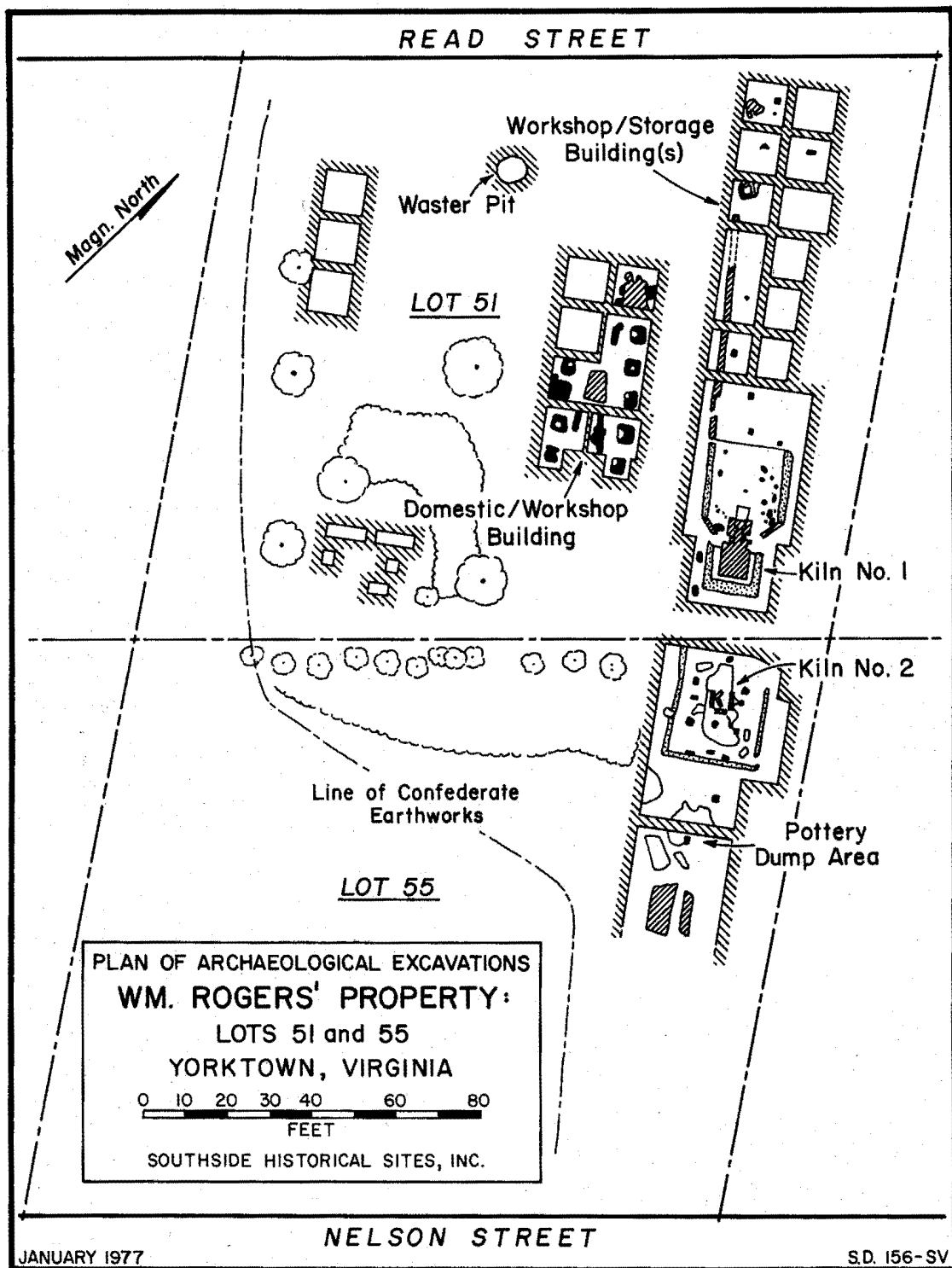


Figure 1. Plan of archaeological excavations, Yorktown Pottery Factory.

shapes. Many of these shapes have variable rim types. In addition, 54 rim types, different from the shapes mentioned above, are too small to be accurately identified at this time. Thus, the total number of vessel types and variations seem to be far greater than the 23 presently known.

SHAPES

The following summary description of pottery shapes and production methods is based on analysis of only ca. 25% of the over one million sherds excavated to date.

Earthenware shapes

1. milk pans. These vessels are flat based with curved out-sloping low walls; thickened and rolled rims are common, but 16 different rim forms have been defined; 14-16 inches in diameter and 2-4 inches in height; lead glazed on interior with glaze runs on exterior (Figure 2, A-B).

2. mugs. A few yellow-glazed and green-glazed earthenware mugs have been found. They appear to be quart size. The mugs have the same shape as the stoneware mugs.

3. storage jars. Only a few rim fragments have been found.

4. bottles. Bottles are similar in form to stoneware bottles; lead glazed interior and exterior.

5. bowls, with or without handles. Flat base, with curved out-sloping walls; flattened sloping rim with rounded exterior overhang with groove below. On vessels with handles, one C-shaped handle is attached to rim. Lead glazed on all surfaces, or biscuit unglazed. At least 3 sizes: diameter—7 to 14 inches; height—3-5/4 inches (Figures 2, C-D; Figure 4).

6. pipkin. Curving bag-shaped wall with pot wider at flat base than at rim; 1 pouring spout in rim; 2 raised cordons on exterior near rounded rim; tapered pulled handle applied at an angle. Diameter at base—5 inches; at rim—3 3/4 inches (Figure 5).

7. porringer. A vessel with a raised annular base and a triangular handle attached to rim and body; upper surface of handle flat with eight incised parallel grooves for decoration; all surfaces lead glazed, orange in color. One vessel of this type had the initials "AG" incised over the date "1720" on the exterior wall between the handle and the foot. Diameter—6 1/2 inches; height—3 3/4 inches (Figure 2, E).

8. dish or saucepan. Slightly out-sloping low walls, with flat base and no distinct rim; lip is rounded with V-groove below lip on exterior. Diameter—6 1/2 inches; height—2 1/4 inches (Figure 2, F).

9. crock or butter pot. Several sizes, varying in height from 5-6 1/2 inches and in diameter from 6-7 1/4 inches; vertical to slightly out-sloping walls. All surfaces lead glazed (Figure 2, G-H).

10. chamber pot. Only a few small sherds have been found.

11. plates or platters, either slip-decorated or plain, measure 14 1/2 inches in diameter. The broad, flat rims vary in width from 1-3/16-2 1/4 inches. Slip-decorated plates (interior only) exhibit 3 base colors—red, tan, and/or cream—which were used with various combinations of slip colors—white, light tan, dark tan, grey, cream, and/or red—applied in stripes or swirled (Figures 2, I; 6).

12. lamps. Five lead glazed sherds are parts of several lamps, similar in form to Betty lamps (Figure 7).

13. bird house bottles; Sherds and handles, both glazed and unglazed, have been found at the site.

14. colanders. Base and side wall sherds only, lead glazed on all surfaces, with holes punched through base and walls.

15. funnels. A few sherds of earthenware funnels have been recovered.

16. footed pots. Two different sizes of apparently manufactured pots were found several feet from tripod vessels: large (foot is 1-5/8 inches in diameter) and small (foot is 1 inch in maximum diameter).

17. stove tiles. The tiles are 7 inches square, with a raised design of a draped swag, 6 leaves, and what appears to be a pomegranate on the flat surface of the tile (Figure 8).

Stoneware forms

1. mugs. The mug represents the finest stoneware product made at Yorktown. The mugs are so well made they are largely indistinguishable from English-made mugs. The Yorktown mugs are vertical sided with one handle. At least 4 sizes were made—1/4 pint, 1/2 pint, pint, and quart. Decoration took the form of cordons near the base, and at least 11 different cordons have been distinguished thus far (Figure 3, A). Often stamped with mark: WR below a crown.

2. storage jars. A heavy, tall container with thick out-sloping walls and a flat base; inner portion of rim curved to accommodate lid. Diameter—6 inches; height—15 inches (Figure 3, B).

3. bowls. Outcurving walls with flat, overhanging rim. Diameter about 9 inches.

4. bottles. A tall form with bulging walls, small mouth, and narrow base; a wide and heavy strap handle is attached to shoulder and below rim. Height—11 1/4 inches; basal diameter—3 3/4

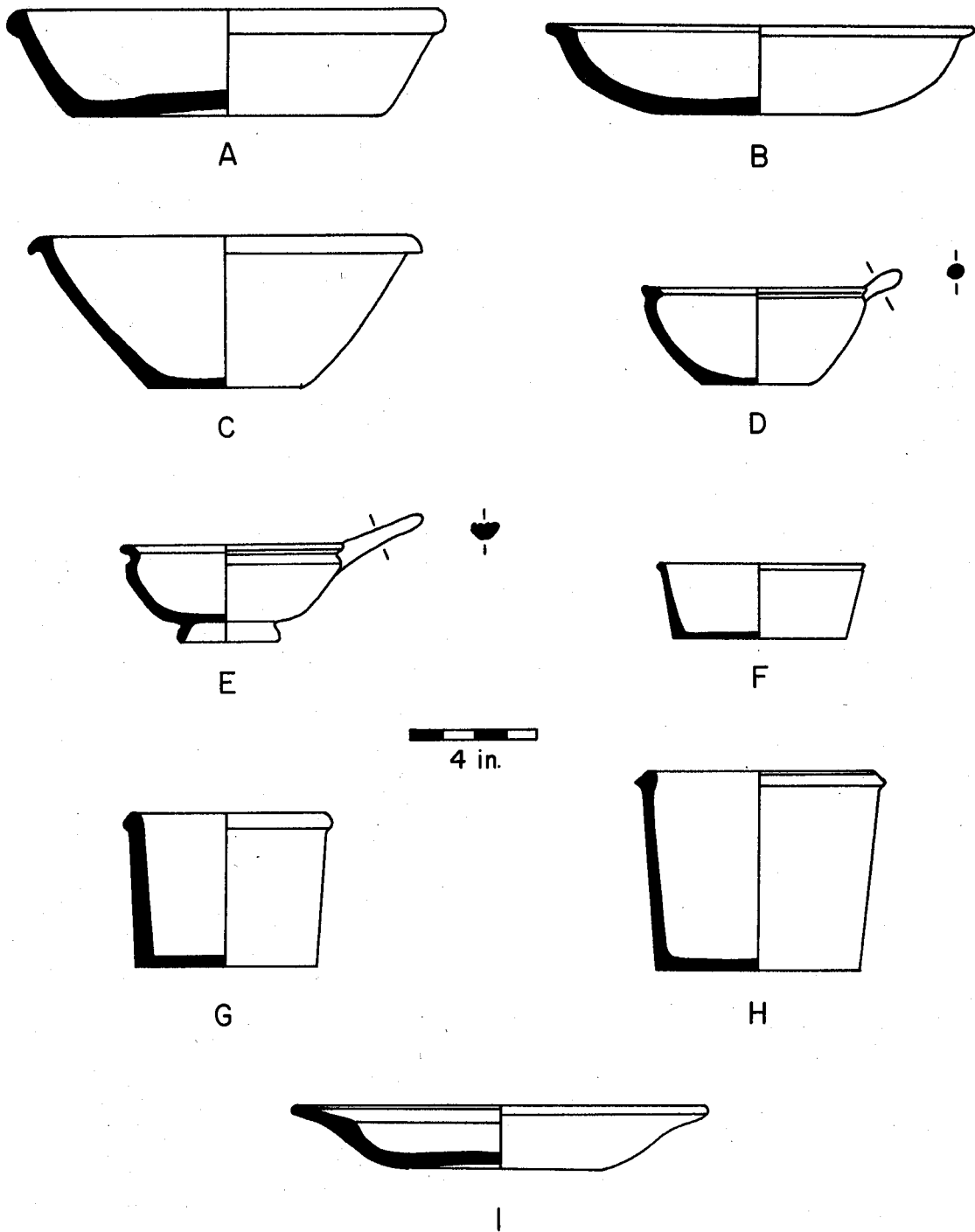


Figure 2. Earthenware shapes and sections: A, B, milk pans; C, D, bowls; E, porringer; F, dish or saucepan; G, H, crocks or butter pots; I, plate or platter.

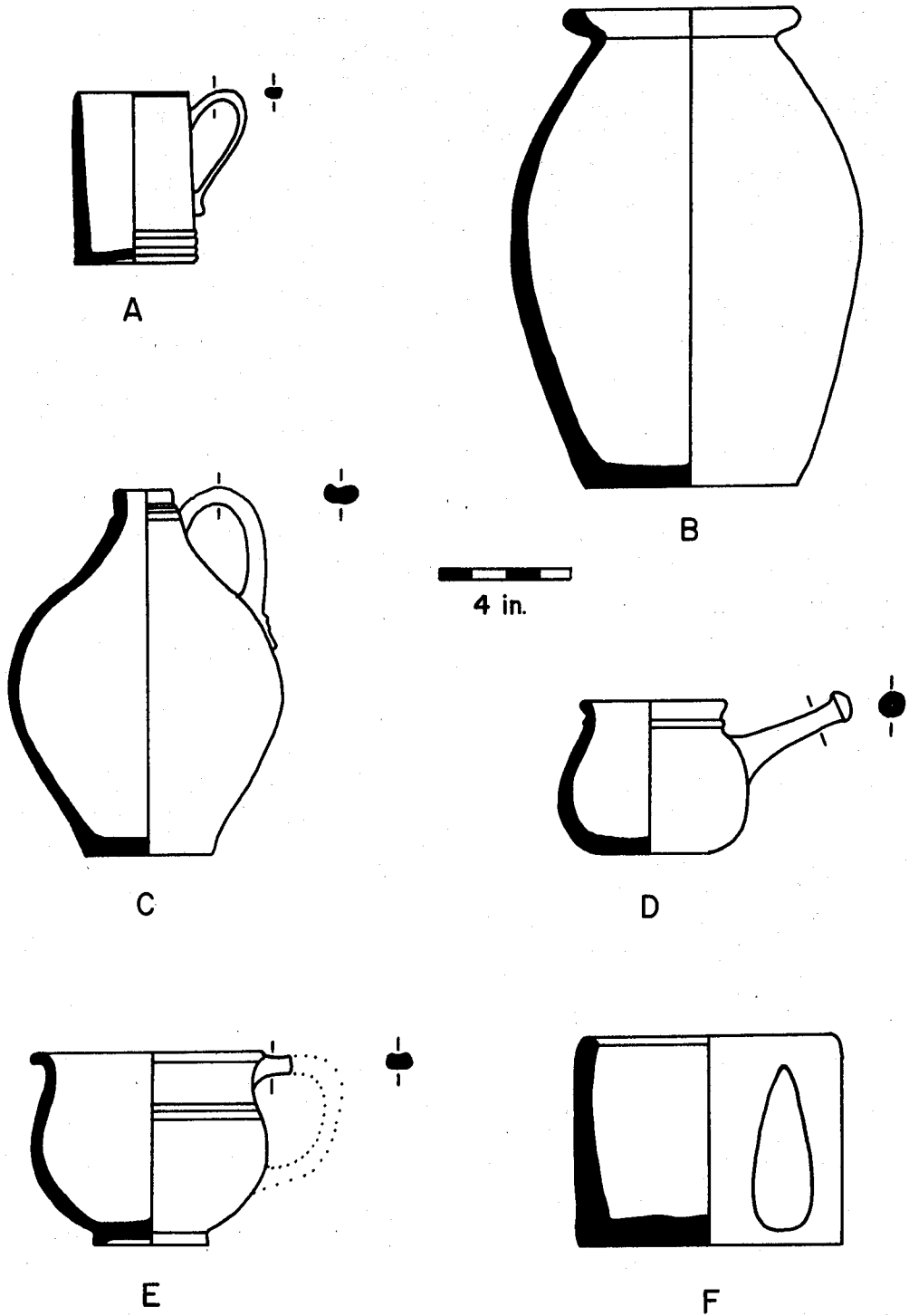


Figure 3. Stoneware shapes and sections: A. mug; B. jar; C. bottles; D. pipkin; E. chamber pot; F. saggar.



Figure 4. Earthenware bowl with handle.

inches. Often marked with stamp: WR below crown (Figure 3, C).

5. pipkin. Curving bag-shaped vessel with pot wider at base than at rim. Tubular handle, pierced longitudinally, with pestle-like terminal, attached at right angles to pot. Height— $4\frac{3}{4}$ inches; maximum diameter— $5\frac{1}{2}$ inches (Figure 3, D).

6. chamber pot. Curving walls; everted rim with strap handle attached at rim; annular foot. Height— $5\frac{3}{4}$ inches; diameter— $6\text{--}5/8$ inches (Figure 3, E).

METHODS OF PRODUCTION

The ongoing analysis has revealed information on the methods of production, including forming, stacking, and experimentation.

a. Wheel throwing and turning. All wares were formed or thrown on the wheel, with the exception of the stove tiles. Some milk pans show evidence of placing a tool under the edge for lifting off the wheel, but there is no evidence so far of the use of a wire.

Traditionally, when the pot had dried to a leather hard state, it was placed upside down on the wheel and the excess clay was cut or "turned" off with a tool, thus forming a flat or footed

base. Yorktown milk pans were not "turned." Excess clay was cut off with a knife or sharp tool with little care taken to smooth the cuts. This characteristic may be one good identifying feature for Yorktown milk pans (Figure 9).

Yorktown bottles, bowls, storage jars, crocks, and earthenware porringers have flat bases. Some bowls show "turning" marks on the outside wall extending up a short distance from the base. Where the throwing lines and the turning lines meet, there is usually a raised line unless they are carefully blended together.

Excess clay has been "turned" off the stoneware pipkins making a rounded curve. Here the turning marks can be easily distinguished from the throwing lines.

The stoneware chamber pot is the only shape, thus far, that has a raised foot, other than the earthenware porringer (Figures 3, E; 2, E). Mugs have a slightly raised base with ornamental cordoning on the exterior near the base.

Rims vary with the shape and use of the pot. Earthenware pipkins were finely thrown with a thin rim (Figure 5). Three lines were incised just below the rim edge. A small spout was formed by pulling out the rim with the fingers after the lines were incised. The fine throwing of the one

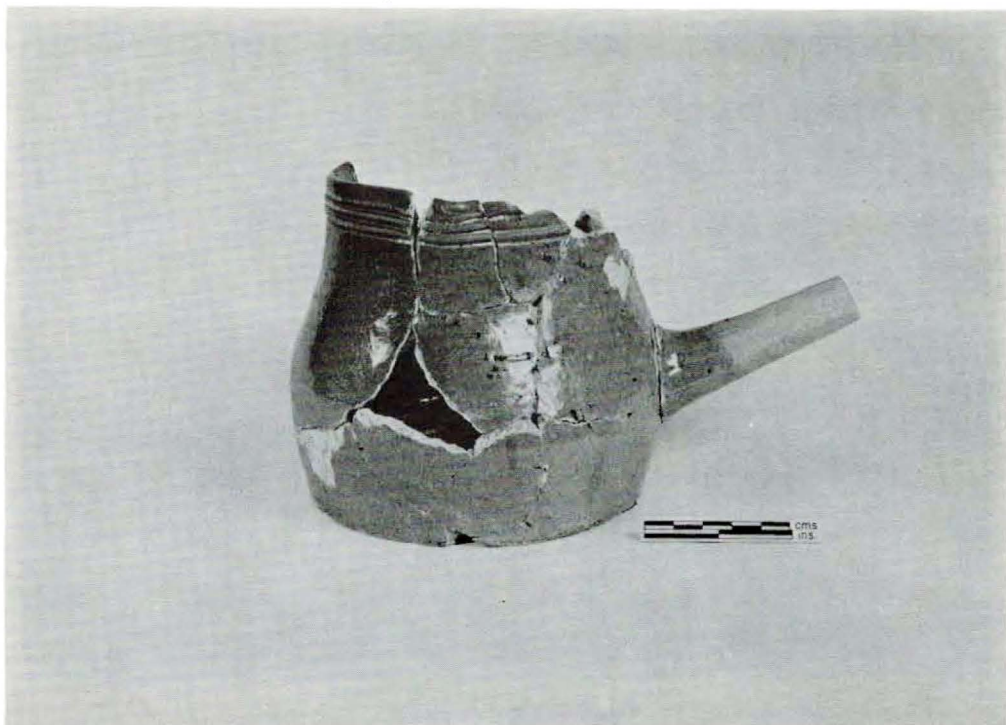


Figure 5. Earthenware pipkin.

complete pipkin may reflect the skill of this particular potter.

Stoneware pipkins are thicker and have one raised cordon near the top. Both earthenware and stoneware bottle rims are very thick and have 8 different cordon combinations near the rim.

Stoneware storage jars have a thickened overflowing rim to accommodate a lid or a cloth with a string tied around it. No lids have been found.

Crocks or butter pots have a thickened exterior flange or overhang that may have been to hold a string placed around a cloth cover.

b. Handles. Seven different types of handles were made. The dated earthenware porringer has a flat handle, triangular in section, and incised on the flat, upper surface. Another earthenware porringer has a tapered, pulled, cylindrical handle applied at an angle. Stoneware pipkins have a thrown cylindrical handle with pestle-like terminis. Earthenware bowls have a rolled C-shaped handles applied to the rim, and chamber pots have one extruded handle with one end attached to the rim and the other attached $2/3$ below the rim. Bottles have one broad and heavy strap handle with one end attached below the cordon decoration and the 3-finger impressed terminal attached just above the maximum bulge of the side. Mugs have one thin strap or extruded handle with the top

end joined below the lip and the lower terminal folded back on itself and impressed with a finger or tool.

c. Lamps. Williams Roger's Estate Inventory of 1739 lists "three dozen lamps." Five pottery fragments reveal portions of a lamp similar to a Betty lamp (Figure 7). Yorktown lamps were thrown in sections, as revealed by turning marks on the bottom of 2 bowl-shaped sherds that had separated from the pedestals.

d. Stove Tiles. Stove tiles were made in 2 pieces, an upper flat tile with one surface decorated, and side walls or flanges applied at right angles to the flat tiles. The square stove tiles, measuring 7 inches square, were pressed into a mold which had a sunken design of a draped swag, 6 leaves, and a pomegranate. The flower at the top center must have been an added feature. The flower is concave in the finished tile while the other design elements are raised (Figure 8).

e. Glazing. Milk pans were glazed on the interior, to just over the rim on the exterior. The glaze appears to have been poured into the bisqued pot, rolled around, then poured out, a process revealed by streaks, uneven thicknesses of glaze on the interior, and glaze dripping on the exterior of the vessels.

Most other earthenware pots were glazed in-

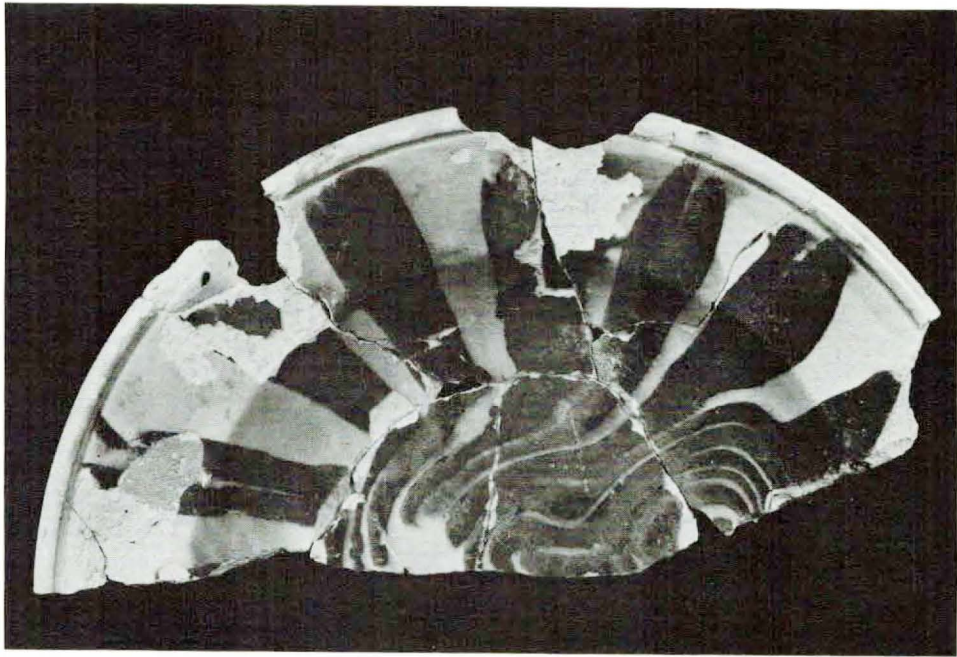


Figure 6. Slipware platter.

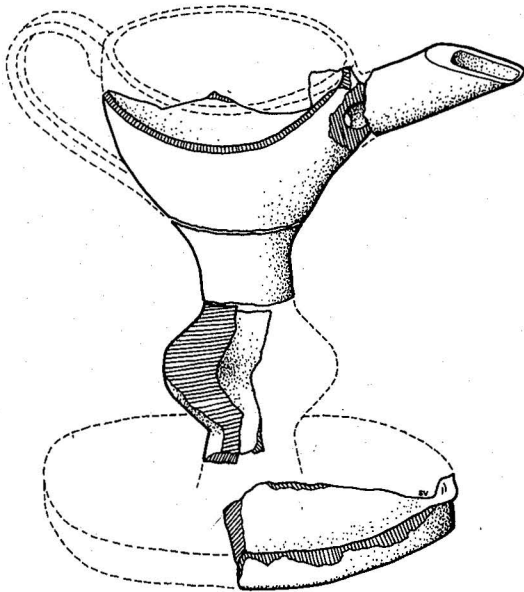


Figure 7. Reconstructed earthenware Betty lamp.

side and out, probably by pouring and dipping. A few small earthenware sherds have glaze on the exterior only.

f. Stacking. Sections of glazed earthenware rims fused to bases of glazed pots show that some forms were stacked upside down and built up in tiers, overlapping the pot beneath (Figure 11).

Milk pans were stacked on edge, leaning against others as shown by the direction of flow of the melted glaze and the sections of pots stuck to the outside of some of the milk pans (Figure 10).

Stoneware mugs were fired in covered saggars. Five sizes of saggars and 4 sizes of mugs have been found. All saggars have 3 teardrop-shaped openings cut into the walls, one rectangular slit cut from the rim to the base, and several shallow-rounded gouges cut from the rim. These openings permitted circulation of heat and salt fumes (Figure 3, F).

Lids were placed on top of saggars with small wads of refractory clay in between. Saggars were placed on top of each other with larger wads or pads between.

Clay pads on the inside base of the saggars sometimes show the number of mugs fired in each. The smaller sagger held one mug. One heavily glazed sagger shows it was fired at least 3 times before it was discarded.

Solid clay cylinders or props were used in stacking, but as they averaged 3 inches in length we are not certain how they were used. Whereas hundreds of these cylinders have been found, only a few triangular stilts have been recovered.

g. Firing. As previously mentioned, the remains of 2 stoneware kilns have been found at Yorktown, but no earthenware kilns. It is possible that earthenware was fired in the stoneware kilns at a lower temperature. A few lead glazed

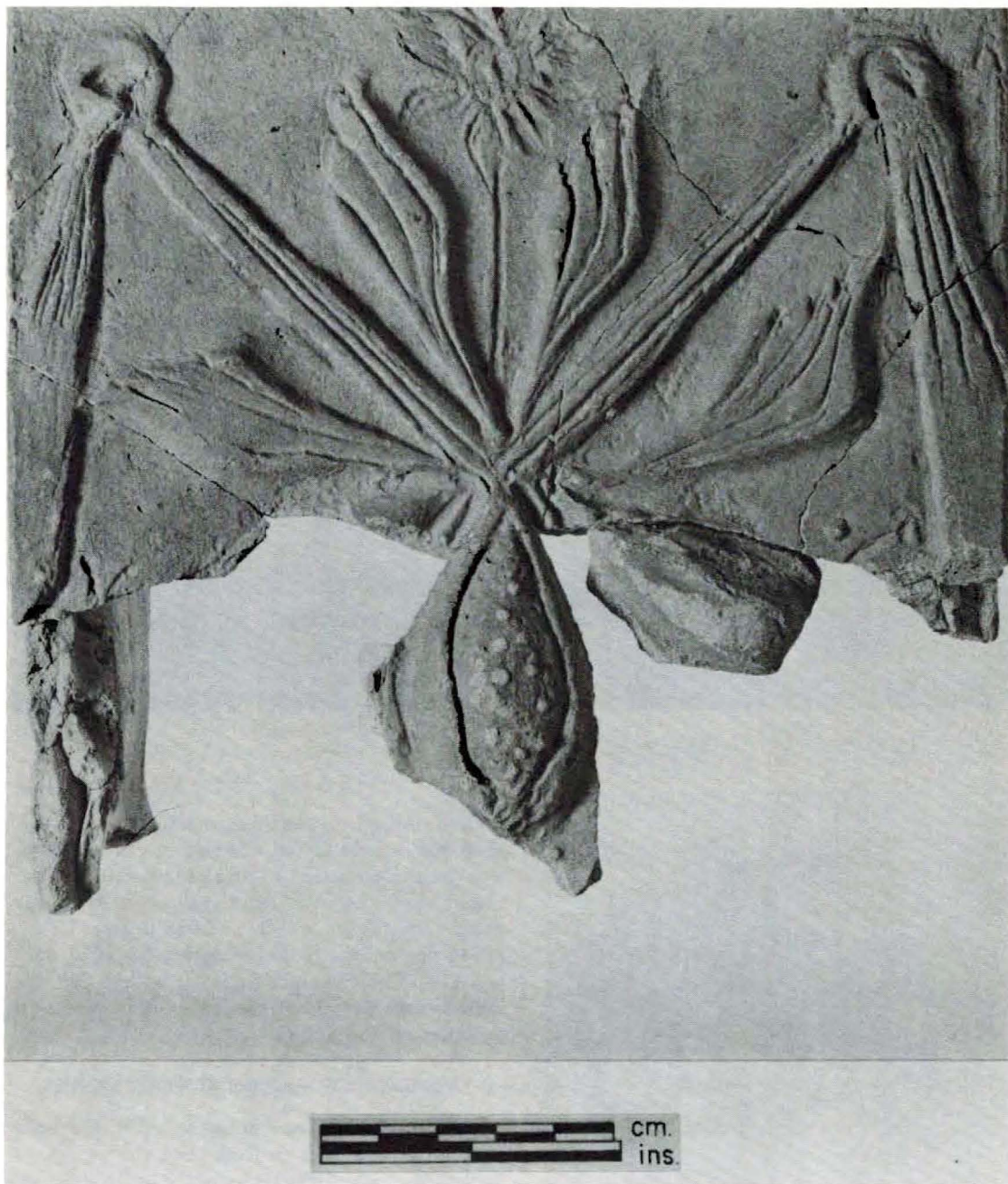


Figure 8. Earthenware stove tile.

sherds that appear to be salted have been recovered.

No shelving or draw trials have been found. These objects were pieces of clay fired with the pots in the kiln, that could be hooked out of a spy hole, cooled in water, and examined for the thickness of the salting.

It appears that both earthenwares and stone-

wares were fired twice, first to a bisque state and secondly after glazing, as revealed by numerous bisque sherds and vessels.

There is great variation in the core and surface color of bisque earthenware, and body and glaze color of earthenware and stoneware, which reflects differences in kiln temperature and atmosphere. Some variation may also be due to differ-

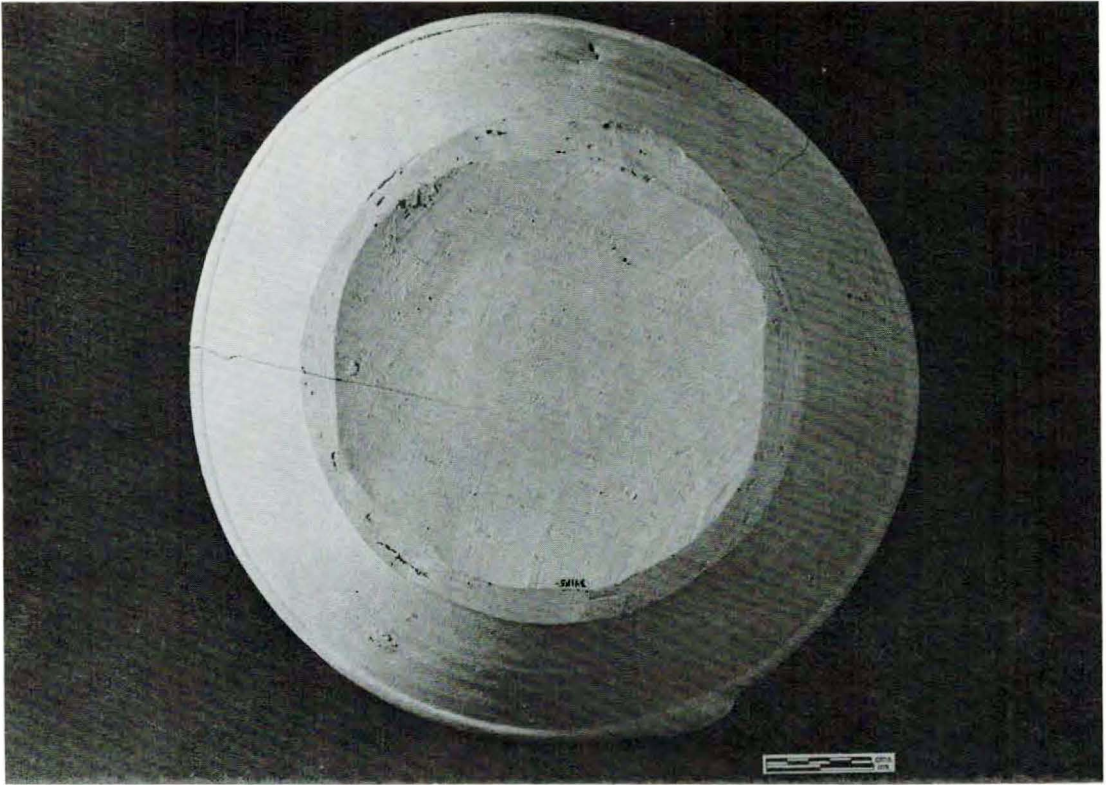


Figure 9. Milk pan base showing knife marks.



Figure 10. Milk pan showing glaze flow.

ences in the clays used and the ingredients in the earthenware glazes.

Yorktown stonewares were fired at relatively low temperatures, as revealed by recent reverse thermal expansion tests on 3 stoneware sherds by the New York State College of Ceramics Research

Station, Alfred. Underfired, medium, and high fired pieces were tested in order to give information on the variations in firing temperature. The results show the temperature range was from approximately C/06 to C/1, or 1005 degrees C. (1841 degrees F.) to 1125 degrees C. (2057 degrees F.). These temperatures are within the earthenware range, but the higher fired pieces are as dense as stoneware.

EVIDENCE OF EXPERIMENTAL WORK

Five small stoneware mugs, found in the vicinity of Kiln 2, appear to have been test pieces, as 4 of them have different numbers or lines incised on their bases (Figure 12). Some of the mugs appear to have been dipped several times, first in iron oxide, then in a grey slip or an unknown mixture, and finally in a white slip, the last slip extending only $\frac{1}{2}$ way up the body. The potter may have been trying to achieve a white slip. Energy dispersive x-ray analysis of some of these mugs showed a high amount of calcium in the white slip, which suggest the potter may have tried a substance other than white clay to achieve a white surface. Ground-up shells could possibly have been used.

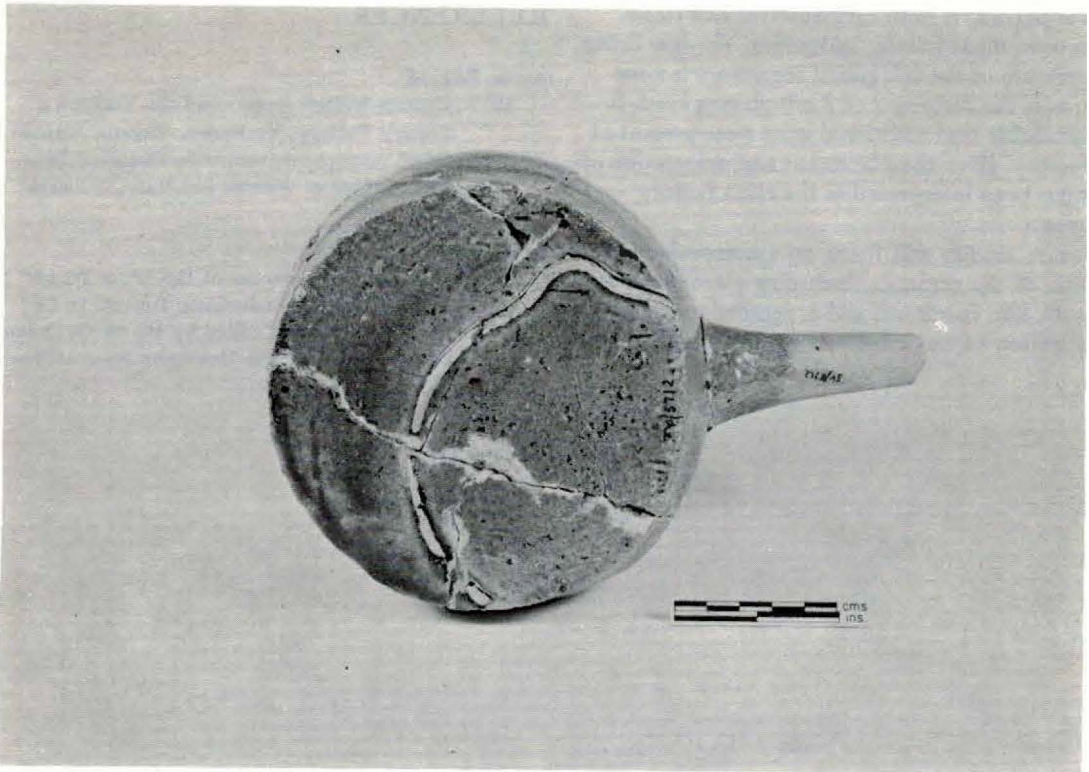


Figure 11. Earthenware pipkin showing rim of another pipkin fused to base.



Figure 12. Stoneware mugs with clay slips.

A peeling of the slip may have been caused by the different ingredients or the time of application of the slips. Clay slips are usually applied to rather wet clay, so both can shrink together. If the slip is applied when the clay is leather hard, the pot has already undergone a portion of its shrinkage. The added slip may shrink, loosen, and peel off.

Numerous chunks of flint found in the workshop area may have been utilized in different

combinations in the slip. This factor, and the use of the white slip mentioned previously, may reflect, in Yorktown, the English potters search for a whiter body.

CONCLUSIONS

The archaeological finds at Yorktown are remarkable in many respects, including the following. The kilns are well preserved, an unusual occurrence on pottery sites. The factory complex is well developed, suggesting that 18th century industry in the South was more advanced than previously thought. A large variety of both earthenware and stoneware shapes were manufactured in Yorktown for use in local Tidewater communities and for export to distant places. This in turn reflects the communities demand for locally manufactured ceramic products. An analysis of this need and the possible reasons behind it will be the subject of future studies.

The origin of the Yorktown potter(s) remains a mystery. Definite English shapes, such as mugs, were being made. In addition, various Germanic shapes and objects, such as the stove tiles, porringers, slipware, etc., suggest the presence of one or more German or Dutch potters.

It appears as if both earthenwares and stonewares were made in large quantities. The low firing temperature of the salt glazed stoneware is a surprise, as is the discovery of 2 salt glazing kilns. It is improbable that additional kilns were present at the factory, given the placement and orientation of what has been interpreted as the main factory complex.

Future studies will focus on a comprehensive analysis of the ceramics, including glaze and paste analysis; kiln furniture; and a detailed study and visualization of the kilns and factory buildings.

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