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The Conference on Historic Site Archaeology Papers 1973 - Volume 8

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Volume 8

THE CONFERENCE ON HISTORIC SITE ARCHAEOLOGY PAPERS

1973

Volume 8

Part 1 - PRESENTED PAPERS at the Fourteenth Annual Conference
Memphis, Tennessee

Part 2 - CONTRIBUTED PAPERS

Stanley South, Editor

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Stanley South, Chairman
The Conference on Historic Site Archaeology
The Institute of Archeology and Anthropology
University of South Carolina
Columbia, South Carolina 29208

September, 1975

THE CHAIRMAN'S REPORT

The Fourteenth Annual Conference on Historic Site Archaeology was held at the Holiday Inn City in Memphis, Tennessee, on October 4, 1973. Some of the papers presented at this conference are presented here.

Four papers constitute the "Contributed Papers" section of this Volume 8 of The Conference on Historic Site Archaeology Papers. One of these, by Richard Polhemus, was presented at a previous conference but publication was delayed until this time.

The John M. Goggin Award for Method and Theory in Historical Archaeology was offered and three papers were received. However, The John M. Goggin Award Committee was of the opinion that the quality of the papers was not sufficiently high enough to warrant presentation of the award.

No Historical Archaeology Forum section is included in this volume in order to keep the cost of publication as low as possible. I would like to thank those at the Institute of Archeology and Anthropology at the University of South Carolina who have helped with the preparation of this volume. Typists who prepared the manuscript are Alice Boggs, Myra Smith, and Sharon Howard. Particular thanks are due to Maryjane Rhett, who put the volume together and supervised getting it to the printer. I would also like to thank Robert L. Stephenson, director of the Institute of Archeology and Anthropology for his continued support of the Conference Papers.

Stanley South, Chairman
Conference on Historic Site Archaeology

TABLE OF CONTENTS

FIGURES, TABLES, MAPS AND APPENDICES

FIGURES, TABLES, MAPS AND APPENDICES (Continued)

FIGURES, TABLES, MAPS AND APPENDICES (Continued)

PRESENTED PAPERS - INTRODUCTION

The papers presented at the Fourteenth Annual Conference on Historic Site Archaeology that were submitted for publication are included in this section. These range from the presentation of sophisticated analysis of historic site data to underwater techniques, to a consideration of county seat towns, to a research project dealing with socioeconomic aspects of documents relating to ceramics, to a traditional report of field excavations. This cross section of papers illustrates the variety of interests being pursued in the field of historical archeology.

Papers on method and theory in historical archeology presented by me at this conference were published in Volume 7 of The Conference Papers.

Stanley South, Chairman
The Conference on Historic
Site Archaeology

ANALYSIS OF CERAMIC MATERIALS FROM FORT WATSON DECEMBER 1780-APRIL 1781

Leland G. Ferguson

In December or early January of 1780-81 Colonel John Watson of the British army constructed a fort on the summit of an abandoned Indian mound about 1/2 mile from the Santee River in present Clarendon County, S.C. In a letter after the war Watson (n.d.) commented that "...having found a place, supposed to have been the burying Ground of their Indian Chiefs in former times, resembling the Barrows of this Country[England]; we scarp'd it, stockaded it at Top, abattis'd it at bottom, and rendered it as strong as the materials we could collect, and the only utensils we had, our Tomahawks would admit." After completion Fort Watson served to control traffic on the Santee River as well as on the road from Charleston to Camden which also passed nearby. Proximity to these two Low Country arteries probably meant that Fort Watson was visited by many detachments of the British occupation forces.

After the battle of Guilford Courthouse on March 15, 1781, General Nathanael Greene sent Lieutenant-Colonel "Light Horse" Harry Lee to assist Brigadier General Francis Marion in his harassment of the British in occupied South Carolina. As part of this campaign Marion and Lee set siege to Fort Watson on April 15, 1781. Eight days later on April 23, 1781, Lieutenant James McKay, commander of the garrison, surrendered and the fort was destroyed by the Americans. Thus, Fort Watson came to an end approximately four months after its establishment (Watson n.d., McKay n.d., Lee 1812, Johnson 1822, Gibbes 1853).

Supplies and men enroute to Camden from George Town and Charleston passed by this fort, but it was simply a way station between the important terminals of the southern campaign. The historic record is not replete with descriptions, diagrams, and records concerning Fort Watson. In the frame of contemporary military activities this fort was not particularly important. Yet, the artifacts and their distribution are representative of the cultural variables at work in the British colonial army. Thus, the challenge of this site is to exploit a special activity cultural time capsule to help solve appropriate problems concerning eighteenth century culture.

During the summers of 1972 and 1973 as a representative of the Institute of Archeology and Anthropology of the University of South Carolina, I conducted exploratory archeology at the Scott's Lake site of which Fort Watson is a component. Observation, local history and testing indicated that there had been little disturbance to the main portion of the site since abandonment during the Revolution. The southern edge of the site had been eroded by wave action from Lake Marion, but the mound and most of the environs were not disturbed. The area not eroded by the lake had never been plowed, erosion was minimal, and there had not been any significant vandalism. Thus, artifact location, even in the topsoil, was supposed to represent the pattern of original deposition. This distributional data was reckoned to be vital information on this particular site since most of the structures were temporary, and,

in many cases, I expected that identification of activity areas would rely totally on the pattern of deposition of artifacts. As a result undisturbed areas on this site were excavated using a tightly controlled grid system, and all of the topsoil was sifted. The excavation units of concern, (I and II) included the mound summit where the stockade was located as well as the area at the base on the eastern side of the mound (Fig. 1).

The archeological problems that we will be able to formulate about this site will be answered with the entire body of materials collected at Fort Watson as a data bank. And, before all of the pertinent questions are answered, the major portion of that data will be used. However, within this body of collected materials the ceramic record is the most obvious and the one about which we have the most compiled information. As a result ceramic study has been the cornerstone of understanding of this site. Tentative conclusions and hypotheses derived from the ceramic analysis are presented here as a record of the process of developing scientific control over this specific aspect of late eighteenth century culture.

CERAMICS AND TIME

Analysis of the ceramics from Fort Watson began with typological identification and an evaluation of the temporal position of the types. Ceramic types identified are presented in Table 1 (see Figures 2-5).

One of the first steps in the ceramic analysis was the insertion of these data into the "mean ceramic date formula" derived by South (1972). Application of the formula to these ceramics produced a date of 1778.2, quite an acceptable approximation of the date of occupation. However, one of the ceramic types, annular pearlware, has an initial appearance date of 1790 on South's temporal chart; the terminus post quem implications of this date appear to be serious for a site supposed to have been occupied during 1780 and 1781. Also the occurrence of lighter colored creamware and the Royal and Feather-edged patterns tends to make American historical archeologists examining the collection estimate a date of from 1790 to 1805. There are obviously two possibilities for this difference:

1. there is contamination of the historic component on the site, or

2. annular pearlware, and the newest styles of creamware were in the colonies earlier than the date given by South's chart and earlier than they are now known to appear on American sites.

Contamination does not appear to be the case. The majority of the collection of historic artifacts divides neatly into two distinct categories--late eighteenth century and twentieth century. There were no glazed ceramics from the later context. The non-twentieth century artifacts invariably fall into a reasonable Revolutionary War Period collection. Glass fragments, buttons, musket parts, gunflints,

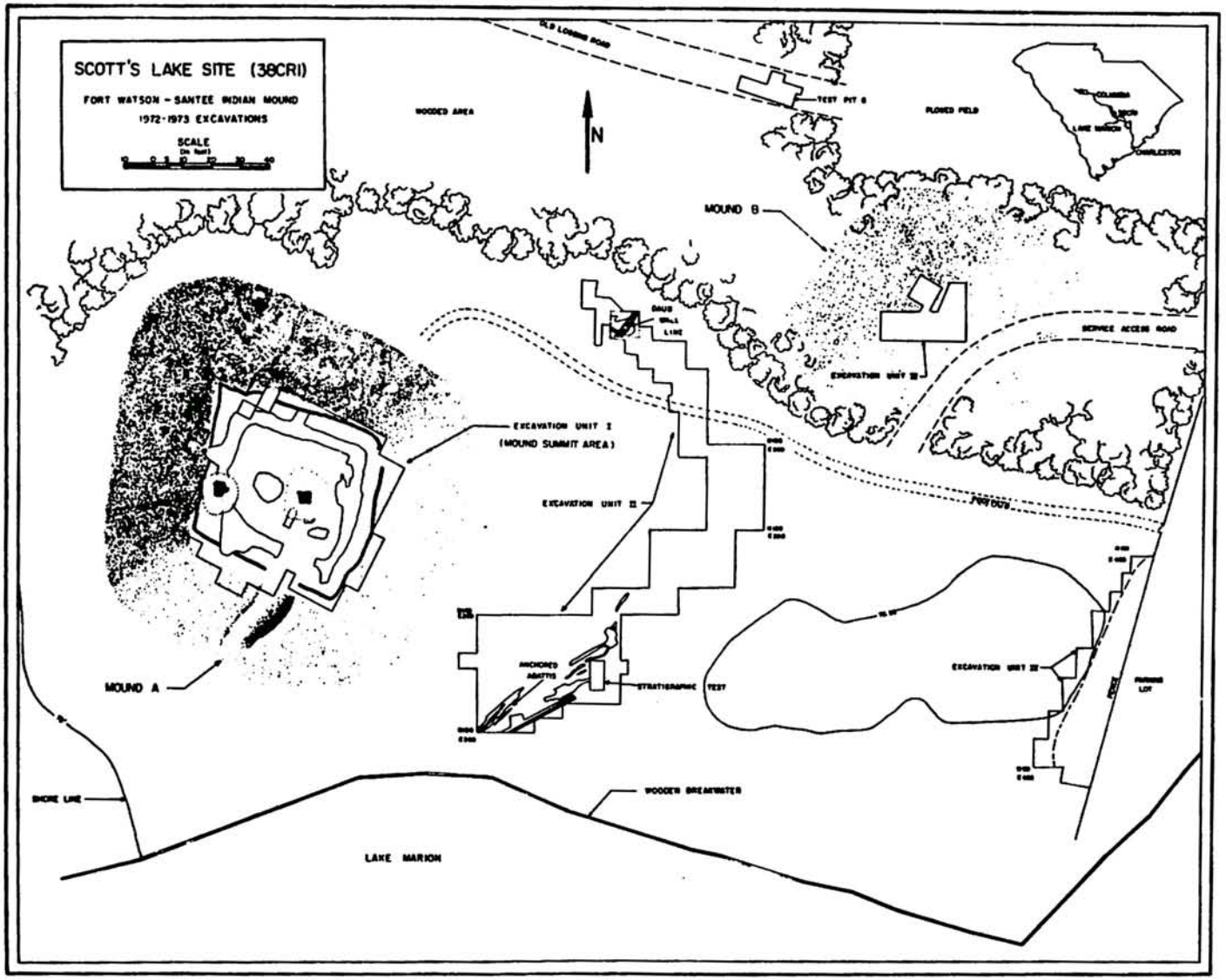


Figure 1

Map of the Scott's Lake site showing excavation Units I and II which revealed most of the primary data concerning British Fort Watson.

Figure 2

CREAMWARE AND PEARLWARE FROM FORT WATSON

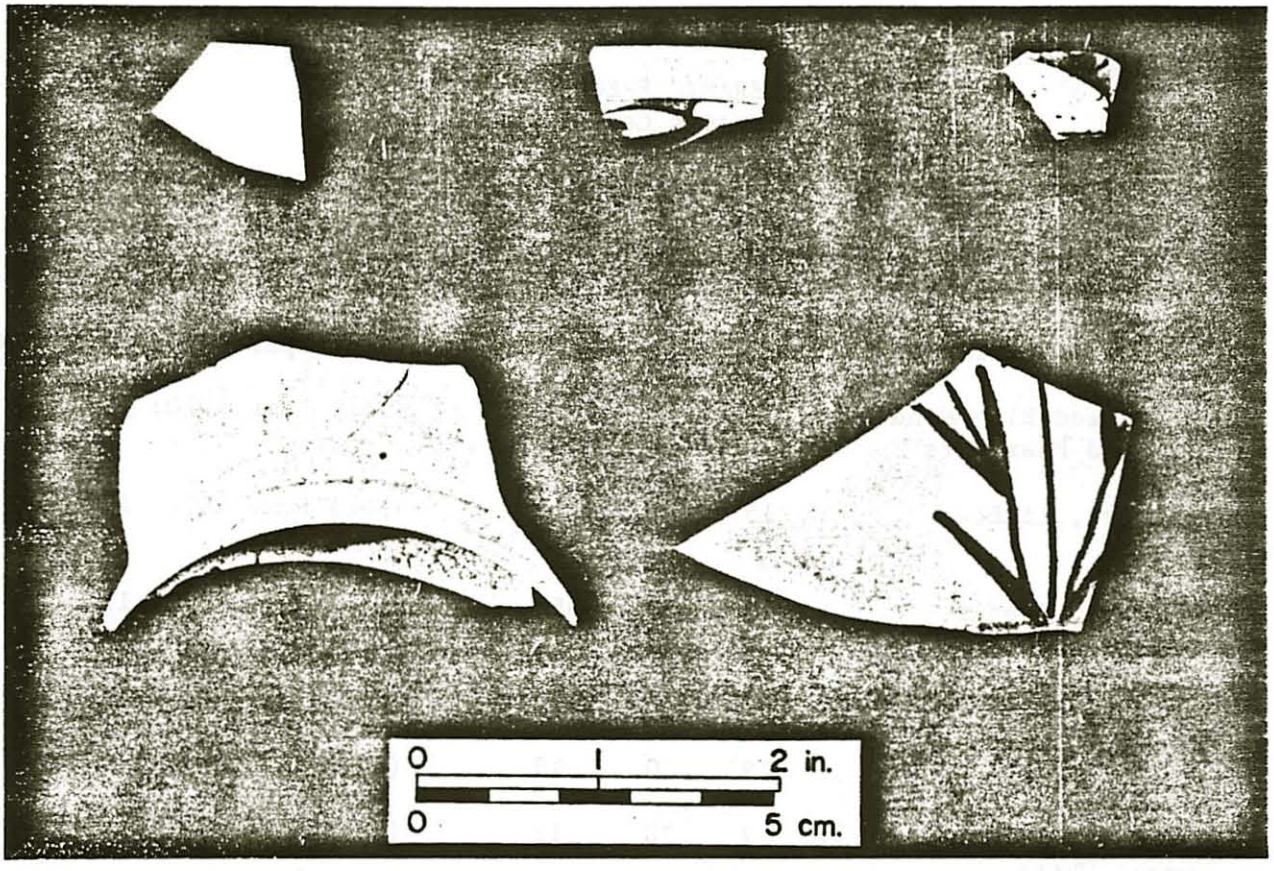
Top row: a. Lighter yellow creamware.
b. Marble slip pearlware.
c. Underglaze blue hand painted pearlware.

Second row: a. Base of annular pearlware saucer.
b. Underglaze blue hand painted pearlware.

Figure 3

PEARLWARE FROM FORT WATSON

Top row and second row: a-h Light blue annular pearlware from teaservice.
Botton row: a-c Speckled blue annular pearlware from teaservice.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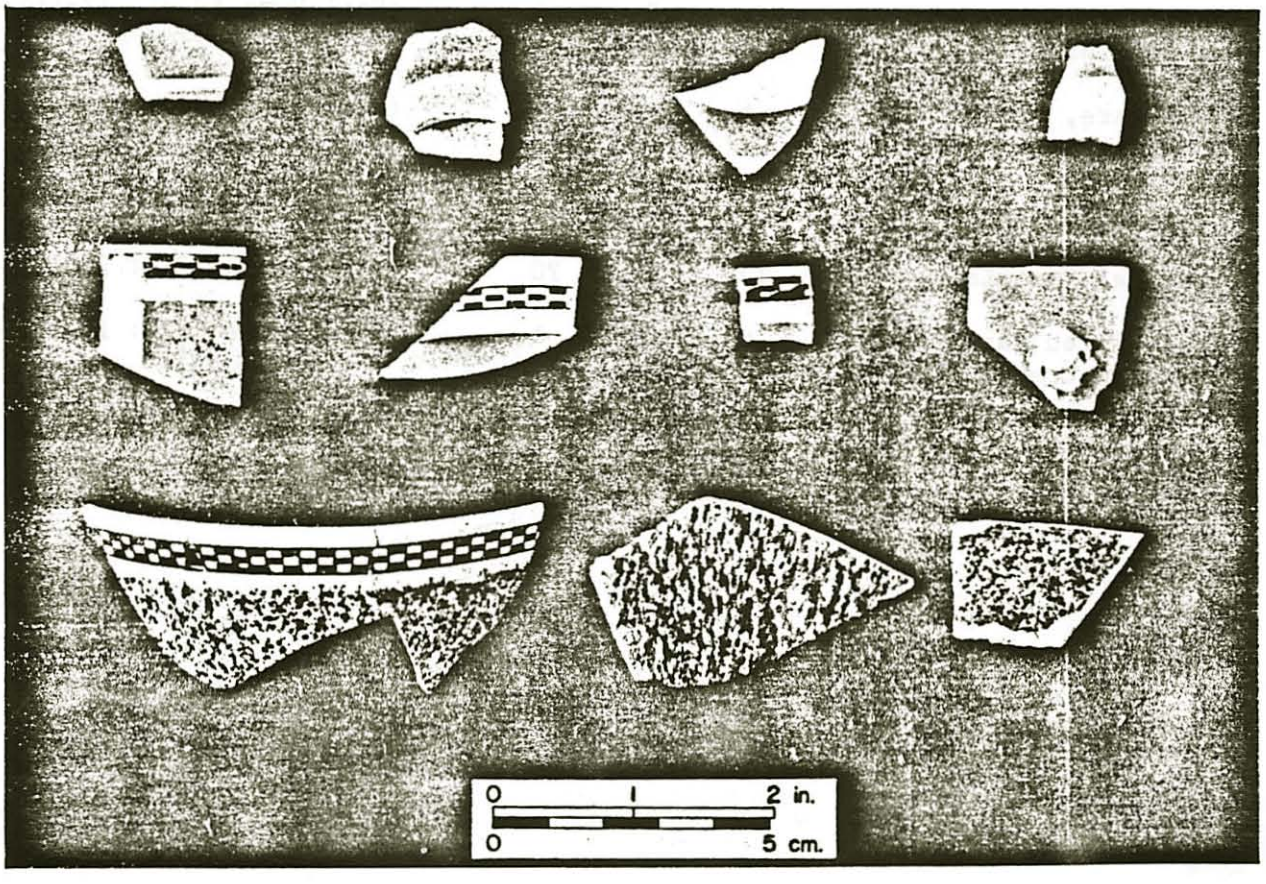
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Table 1

HISTORIC CERAMIC FREQUENCY DATA
(Total Ceramic Collection)

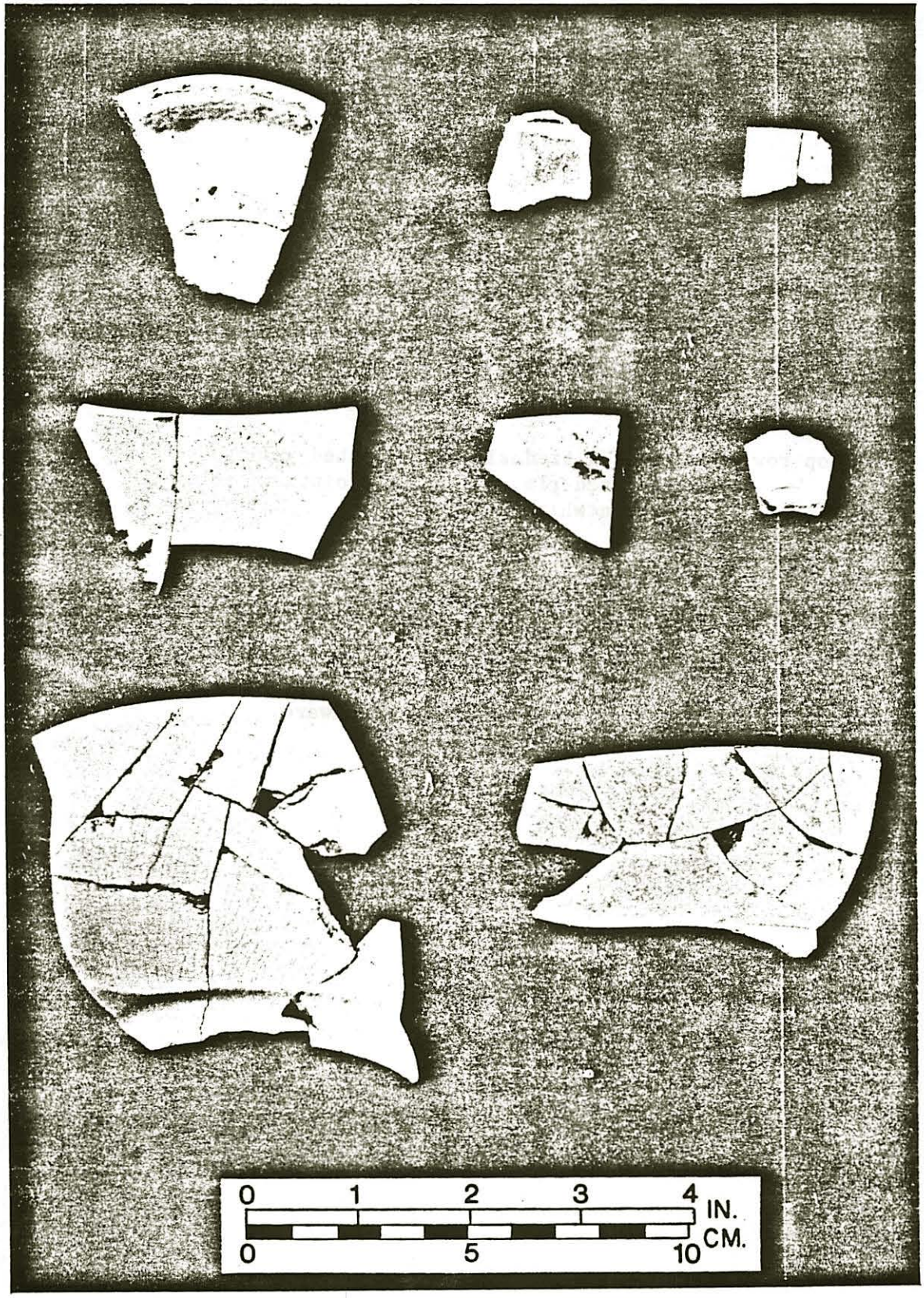
Type	Mound Summit	Non-Mound Summit	Total	Reference
Annular Pearlware	119	13	132	(Noël Hume 1970: 131)
Marble Slip Pearlware	1	0	1	(South personal communication)
Underglazed Blue Hand Painted Pearlware	1	0	1	(Noël Hume 1970: 128-129)
Creamware, Lighter Yellow	15	1	16	(Noël Hume 1970: 126-128)
Creamware, Deeper Yellow	278	80	358	(Noël Hume 1970: 126-128)
Creamware; S.C. made	48	1	49	(South 1971: 175-176)
Nottingham Ware	19	0	19	(Noël Hume 1970: 114)
Salt Glazed Stoneware, White	2	10	12	(Noël Hume 1970: 115-117)
Salt Glazed Stoneware, Brown	0	3	3	(Noël Hume 1970: 112-114)
Delftware, Plain White	6	1	7	(Noël Hume 1970: 109)
English Porcelain	2	2	4	(Noël Hume 1970: 137)
Oriental Porcelain	12	8	20	(Noël Hume 1970: 258, 261)
Lead Glazed Earthenware, Yellow Combed	0	1	1	(Noël Hume 1970: 107, 134-36)
Lead Glazed Earthenware	___	1	1	(Locally made?)
TOTALS	503	121	624	

Figure 4

COLONIAL AND BRITISH CREAMWARE

Top row: a-c Fragments of a creamware mug probably made in South Carolina by William Ellis or John Bartlam.

Second and Bottom rows: a-e Lighter yellow creamware from teaservice.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0 5 10 CM.

Figure 5

DELFT, LEAD GLAZED SLIPWARE, AND STONEWARE FROM FORT WATSON

Top row: a. Lead glazed slipware (combed yellow).
b. Everted rim, plain Delft ointment pot.
c. Plain white Delftware.

Second row: a. Plain white Delftware.
b. Lead glazed earthenware.

Third row: a. Nottingham stoneware.
b & c. White salt-glazed stoneware.

Bottom row: a & b. British brown stoneware.

Figure 6

PORCELAIN FROM FORT WATSON

Top row and second row: a-d Chinese porcelain.
Bottom row: a. English transfer printed porcelain.
b. Chinese porcelain.
c. English transfer printed porcelain.


0 1 2 3 4 IN.
0 5 10 CM.

pipe stems, buckles, musket balls, whirlygigs, Jew's harps, a coin and furniture hardware all support a Revolutionary War date.* Furthermore, the general distribution of these artifacts within the mound summit stockade coincides with the distribution of creamware and pearlware teaservice fragments (Figs. 7-11).

"Annular decoration" was a technique being used on creamware during the 1770's (Godden 1966: Plate 341). The coining of the name "pearlware" by Josiah Wedgewood has been historically documented by Noël Hume as 1779 (Noël Hume 1969). Noël Hume (1969: 395) states that, "At the outset, pearlware was decorated with the same, often elaborate and mechanical, devices used on creamware, such as engine-turned checker patterns cutting through underglaze blue, green, or red-brown." Although "At the outset" in this sentence may mean as many as twenty years in consideration of the total span of the production of pearlware, the tenor of this statement is that creamware decorative techniques prevalent at the time of the invention of pearlware were probably used on pearlware. The ceramics from Fort Watson support such a contention.

South's temporal chart of historic ceramic production was constructed in conference with Noël Hume on the basis of archeological and historical documentation. Conservatism in assigning an early date to annular pearlware for use with the "mean ceramic formula" was due to the expected lag of imports from England (Noël Hume 1969: 394) and the fact that this type had not been historically documented or found on archeological sites in an early (ca. 1780) context in North America (South, personal communication).

Fort Watson represents an early North American occurrence of annular pearlware and lighter colored creamware with the Royal and Feather-edged pattern. Essentially, this site seems to be a reflection of the special nature of British sites during the Revolution. The difference in this type of site and domestic American sites may be similar to an interpretation by Noël Hume (1970: 114) concerning stoneware mugs.

> It is safe to say that all English mottled brown stoneware mugs found on American domestic sites date between 1690 and 1775. Exceptions are likely to be found in New York, which continued to receive British military exports during the Revolutionary War years, and on British military sites to which the troops brought their own supplies undeterred by American boycotts.

While the case with these mugs represents the retention on the continent of an older type, the same characteristic of British occupation sites should relate to new types of ceramics produced in England during the war years. While the two types of pearlware and the latest patterns of

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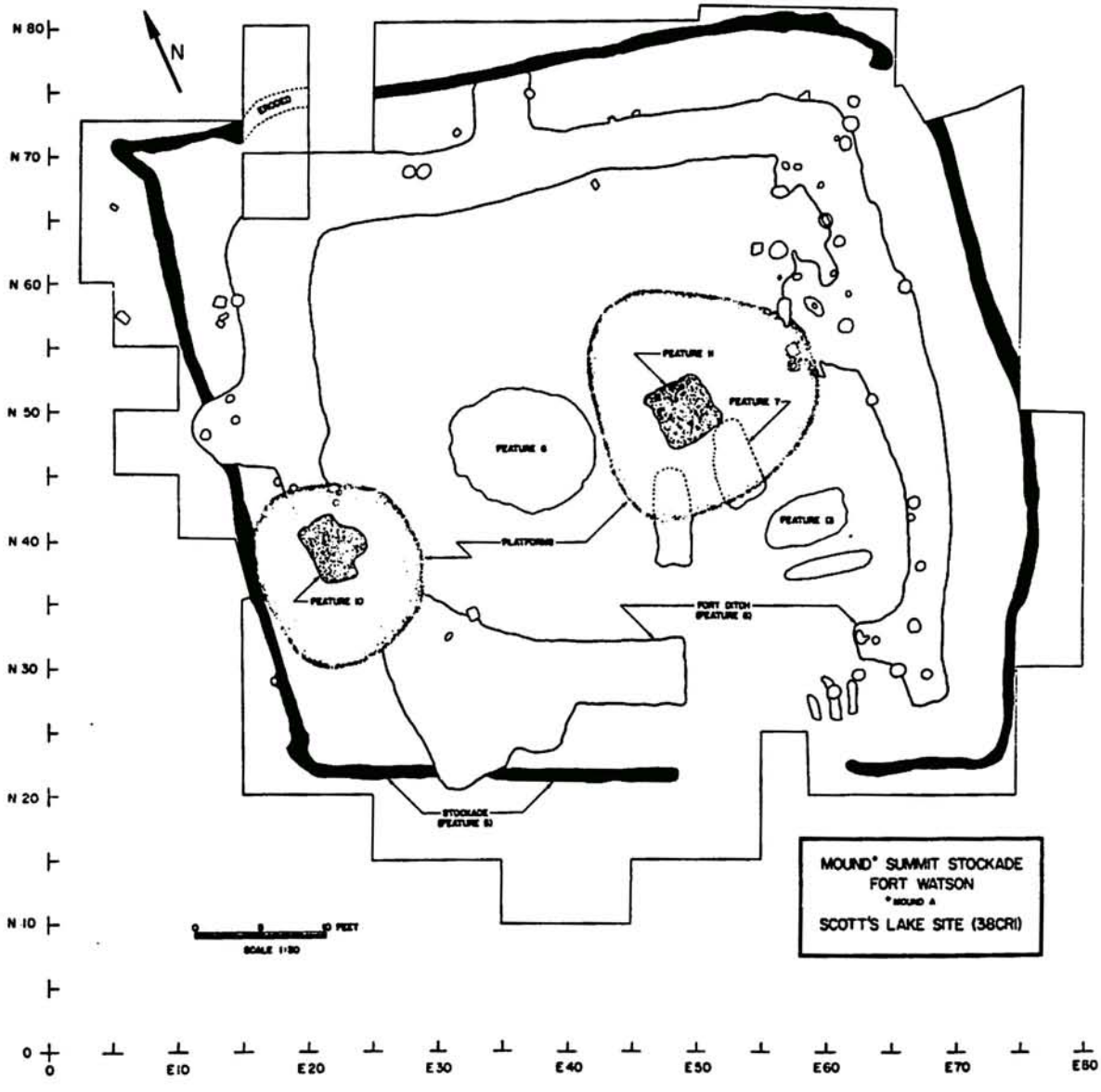
*Three cut nails and an ink bottle (?) perhaps dating from the nineteenth century were recovered.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(FEATURE 12)
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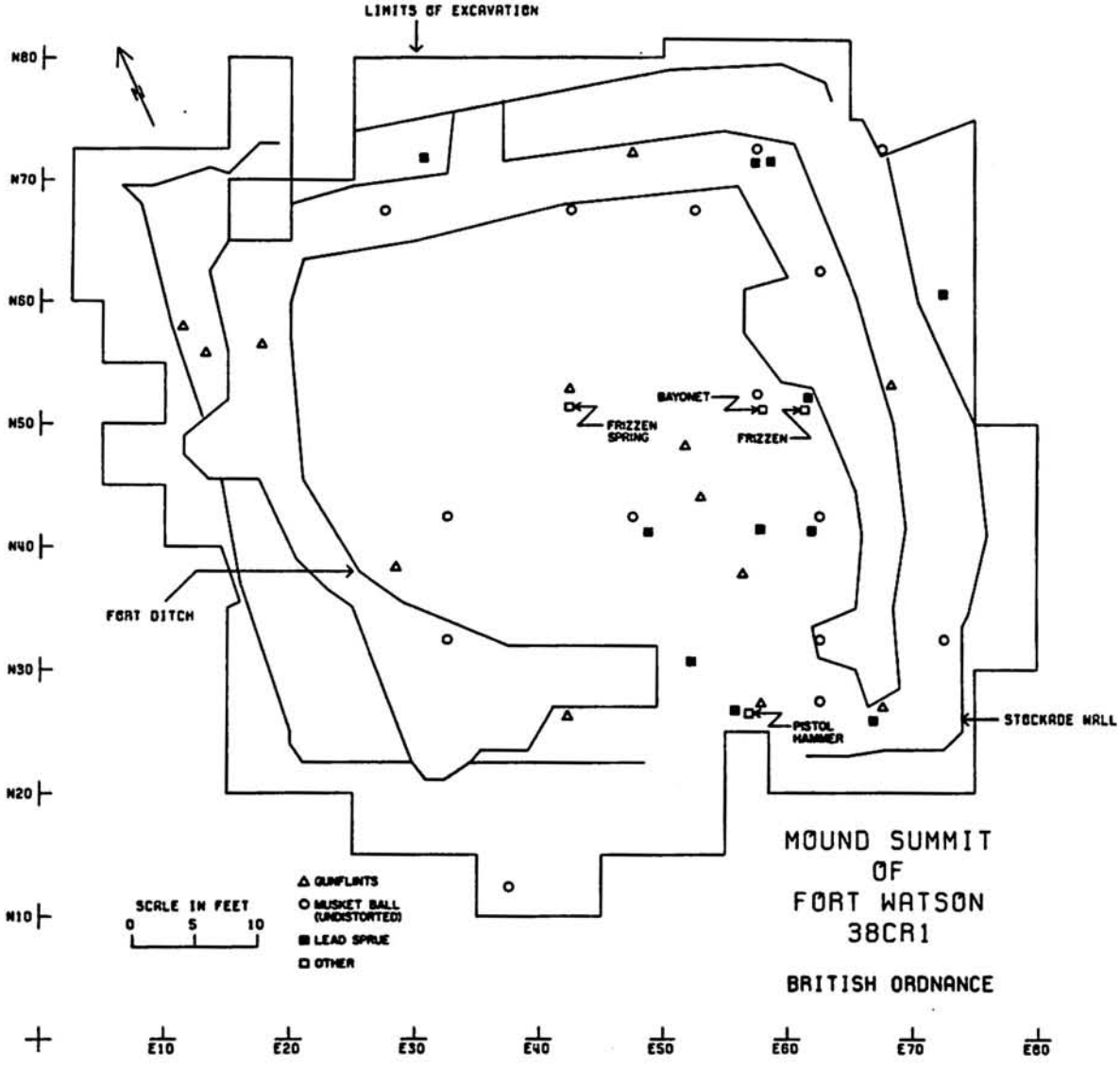
Figure 7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BAYONET
FRIZZEN SPRING
FRIZZEN
FORT DITCH
PISTOL HAMMER
STOCKADE WALL
SCALE IN FEET
0 5 10
GUNFLINTS
MUSKET BALL (UNDISTORTED)
LEAD SPRUE
OTHER
MOUND SUMMIT
OF
FORT WATSON
38CR1
BRITISH ORDNANCE

Figure 8

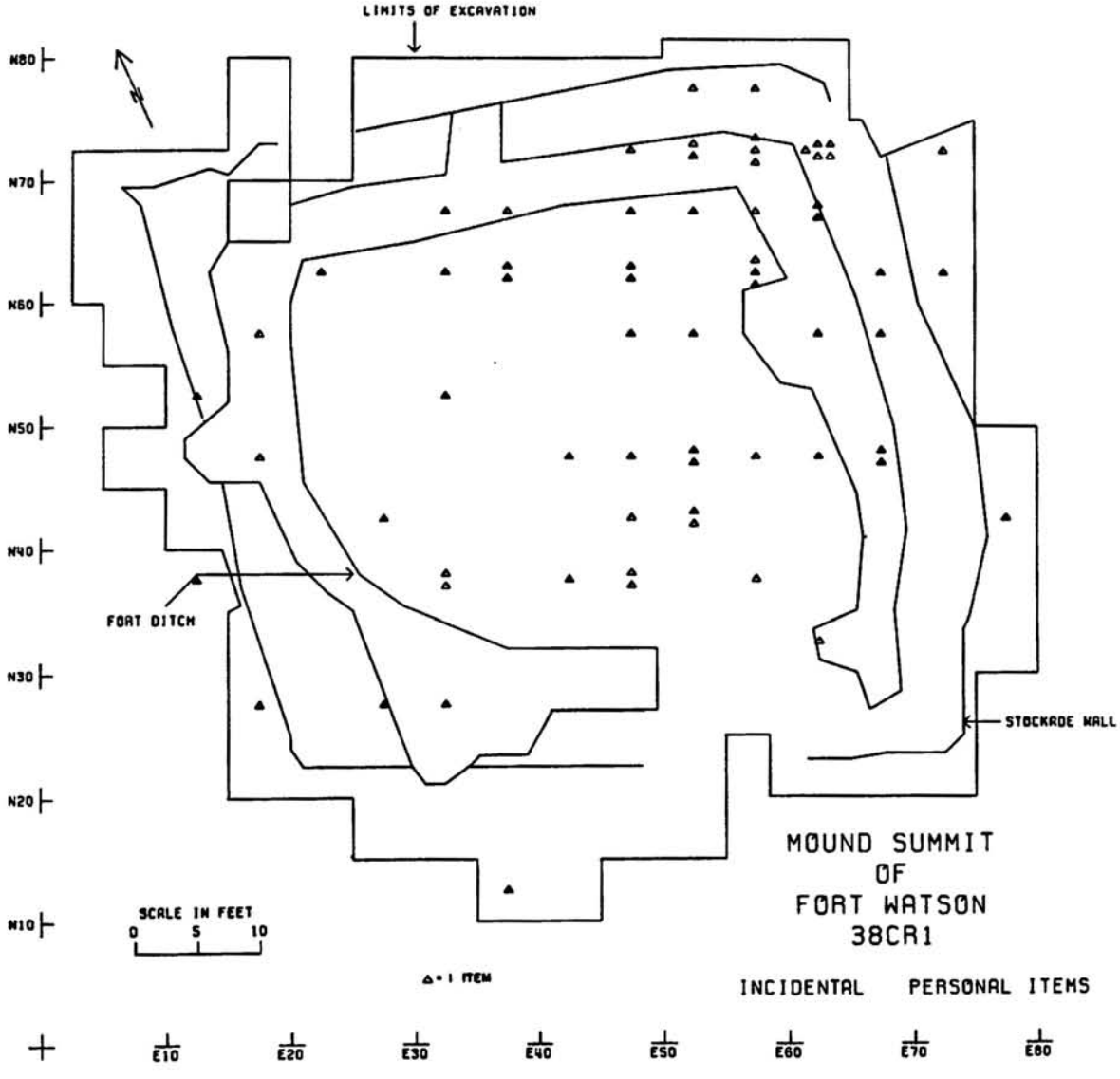


Figure 9

***Items include buttons, buckles, pipe stems, whirlygigs, Jew's harps, a coin, a pewter spoon, a strike-a-light, a chest escutcheon, cut musket balls, "lead pencils", two pieces of uniform jewelry and a fragment of a cooking pot.**

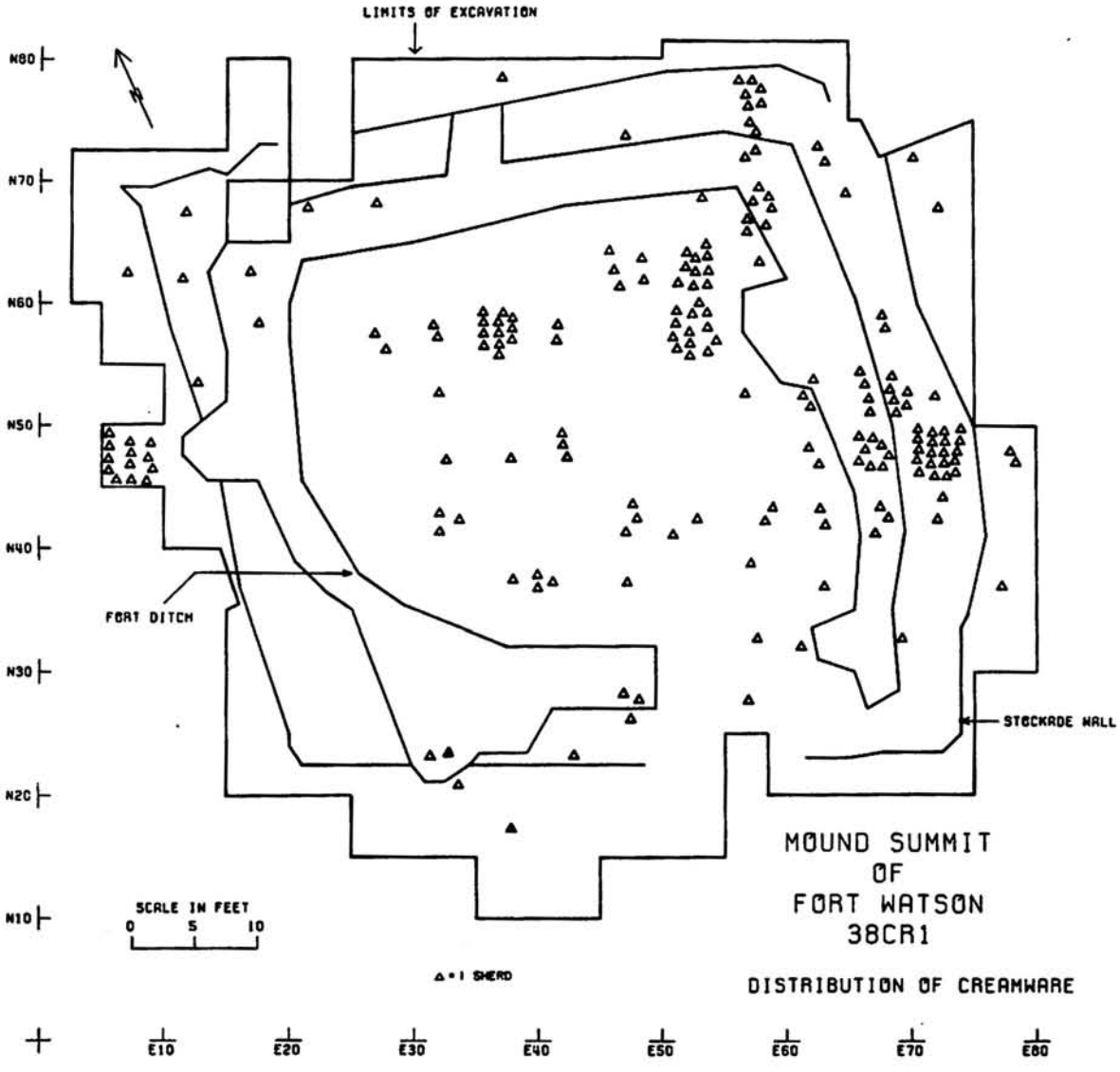


Figure 10

***teaservice**

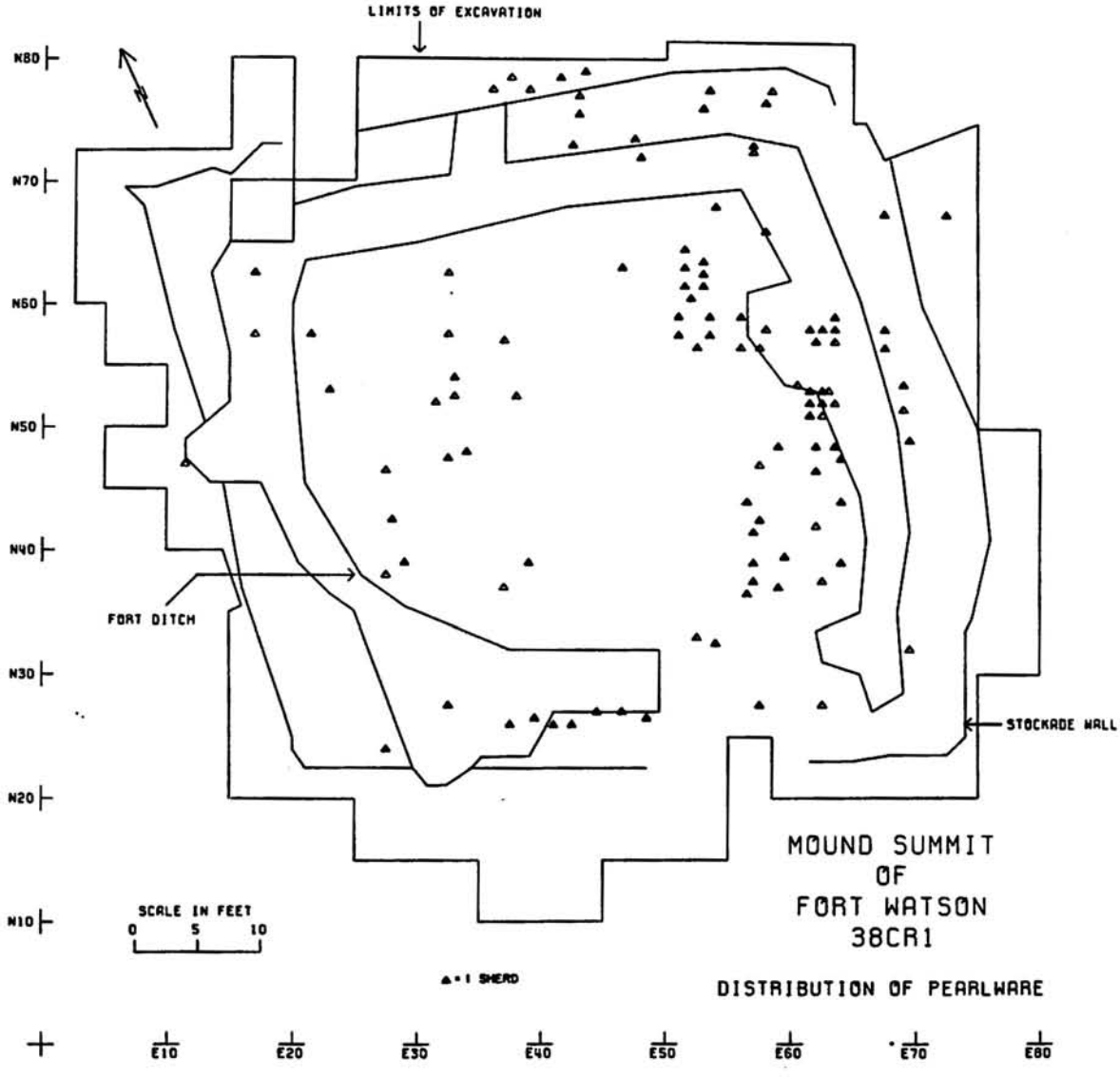


Figure 11

***teaservice**

creamware may not appear on American domestic sites during the Revolution, the living sites of British soldiers are quite a different situation.

Thus, on the basis of historical and archeological information from Fort Watson, I feel that annular pearlware was not only produced in England as early as 1780 but that as early as 1781 it was being used, along with the newest styles of creamware, by the British army in the colonies. Corroboration of this fact should be forthcoming from other Revolutionary War sites.

Of course, changing this ceramic information has changed the input for computation in South's formula. Altering the period of production of this type to "1780-1820", the median date to 1800 and placing the new information into the "mean ceramic date formula" provides a date of 1777, approximately three and one half years from the documented date of occupation.

FORM, SPACE, AND FUNCTION

One of the points that South stresses in the presentation of the "mean ceramic date formula" is that empirical testing has demonstrated that for the eighteenth and early nineteenth centuries the spread of ceramics was so well cast across geographical and cultural boundaries that the formula seems to work as well for Indian houses on the frontier as for metropolitan and rural sites on the eastern seaboard. The data from Fort Watson, a small British fort, support this contention. However, when the data were divided into two obvious units --the stockade on the summit of the mound and the area around the base of the mound near the abatis-- and the ceramic formula applied to these separate collections an important difference was noted. The material from the stockade produced a date of 1778.4 while that from outside the stockade at the base of the mound produced an earlier date of 1771.6. In conjunction with the dating it was noticed that salt-glazed stoneware, one of the earliest produced types on the site, came primarily from the non-stockade provenience while pearlware, one of the most recently produced types, came primarily from the stockade on the mound.

The differences in the ceramic formula dates and this difference in the distribution of early and late ceramics immediately led to the hypothesis that as far as the culinary activities were concerned, there may be a significant difference between the stockaded and non-stockaded areas of Fort Watson.

From this point in the analysis, vessel form was considered in order to refine the data on the differences between the two collections. All sherds that were fragments of cups, saucers, slop bowls or teapots, or that were delicate enough to have come from such forms were placed in a category termed "Teaware". All other sherds, including those of plates, bowls, platters, and jugs, as well as all sherds judged to have come from such forms, were classified as "Heavyware". Results showed that the highest percentage of "Teaware" ceramics were collected from the mound summit while the highest percentage of "Heavyware" ceramics came from

the area away from the mound (Table 2). Thus, the concentration of "Teaware" was primarily responsible for the date of 1778.4 while the concentration of "Heavyware" was primarily responsible for the earlier date of 1771.6.

Table 2

"TEAWARE" AND "HEAVYWARE" FROM THE STOCKADED AND NON-STOCKADED PROVENIENCES

	"TEAWARE"		"HEAVYWARE"		
	quantity	percentage	quantity	percentage	Total
Mound summit stockade	331	76.80%	100	23.20%	100%
Non-mound	52	48.15%	56	51.85%	100%

There seem to be four possibilities for the distribution:

1. The distribution is fortuitous and is not related to cultural phenomena.

2. The distribution is a function of variables operating within the British army as a result of combat.

3. The distribution is a function of the activities of the American militia and the Continental Army after the capture of Fort Watson.

4. The distribution is a function of variables operating within the British colonial army prior to combat.

That the distribution is fortuitous can be ruled out from the beginning. We have two variables, age and form of ceramics, that correlate in this distribution. Futhermore, Chi-square statistics indicate that the distributions are not by chance for the two areas excavated, (stockaded and non-stockaded) and I have confidence that this trend will continue.

That the gross distribution is not a function of the combat situation is probable since the siege was set up quickly and the records indicate that the British did not have time to secure provisions before being closed in the stockade. As we shall see later ceramics were a luxury in non-combat military field situations; and I do not believe it likely that there would have been specialized movement of ceramics during the heat of battle.

After the battle the Americans took control of the fort and "demolished" it. Certainly, items such as ceramics could have been moved around by these soldiers, and this is a possibility to seriously consider. On the other hand, in the process of destruction I would suspect that ceramics would either have been taken or smashed on the spot. Failure to find concentrations of fragments of the same vessel suggests that the materials found in

the excavations were broken during the occupation of the site and that there was time for the sherds of individual vessels to be scattered apart from one another.

One of the most striking facts revealed by the distributions in Figures 8-13 is that ceramics correlate well with incidental personal items and ordnance from the British occupation. This correlation together with the probability that "Teaware" was not brought into the fort during the siege leads to the hypothesis that seems most reasonable--that the general distribution of ceramics is related to factors at work in the British army prior to combat. If this hypothesis is accepted, the implications can be narrowed to three:

1. the distribution is related to some socio-economic factor,

2. the distribution is related to a functional factor or,

3. the distribution may be related to a combination of 1 and 2.

Since military groups are strictly stratified, a socio-economic explanation of the distribution is appealing. The greatest difference would have been between officers and enlisted men, and it is tempting to assume that the difference was that the officers were in the possession of "Teaware" while the non-commissioned soldiers were not. Although this is appealing, the historic data suggest that in field situations officers were probably the only people in possession of glass and ceramics. For the enlisted men of the Continental Army, Peterson (1968: 150) mentions wooden trenchers, pewter spoons, knives, forks and horn cups as having been the primary personal items of culinary ware. With respect to the horn cups Peterson points out that they were ". . . much less fragile than the costlier ceramic drinking vessels." He then points out that,

> Higher ranking officers fared much better, Washington for instance, carried an elaborate mess chest with him in the field. Compactly designed, it included four kettles with detachable wooden handles, a folding grill, eight bottles for spirits, six pewter plates and three platters, containers for seasonings, two knives and four forks, and two tinder boxes. (Peterson 1968: 150).

In addition to this general information we know that the officers at Fort Watson were able to acquire special items during their field duty. In a letter to a George Town merchant Colonel Watson (March 1781) (Gibbes 1853: 47) related that,

> The officers would be extremely obliged if you could send them an intelligent man who would inform them of the proper people to send to, to get those little supplies all troops must want who have been in the field for three months, such as wine, &c., &c.

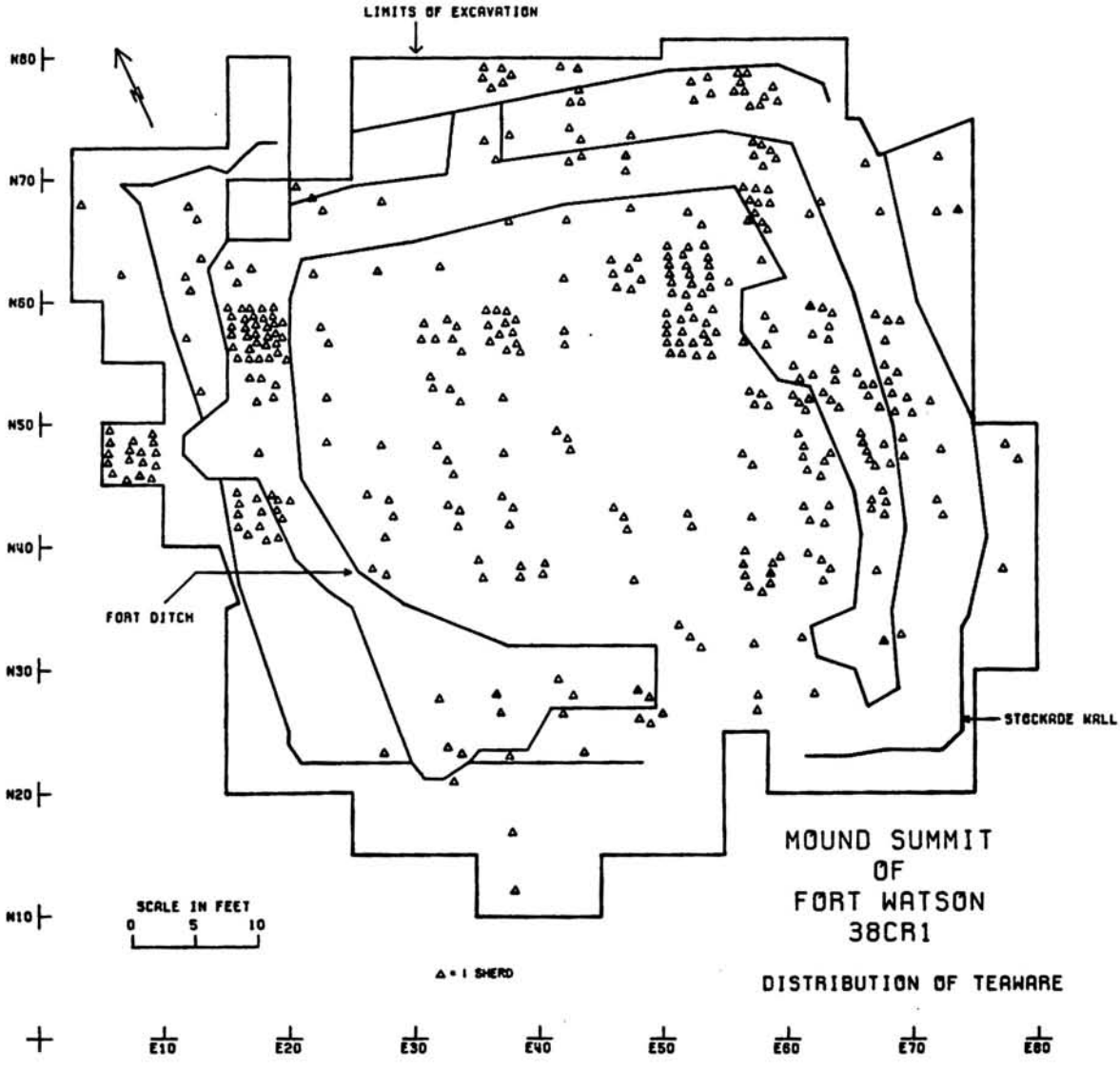
Thus, we are aware of Watson's officers purchasing gentlemanly furnishings. In addition to the wine mentioned in the letter these officers would probably have been ordering tea services, dishes, bottles of gin or scotch and other "necessities" of a gentleman.

If the officers were the only people on the site with ceramics, and this seems to be a good assumption, then the difference probably reflects either a socio-economic or a functional aspect of the officer's activities. The data suggest that eating took place in both areas but that in one area, the stockade on the mound, "taking tea" also took place. If the difference is socio-economic then I would assume that the "tea taking" area was more probably the activity area of the senior officers rather than the junior officers. However, this hypothesis does not seem to be testable with the available data.

Functional factors responsible for the distribution might include differences in food preparation, eating, tea drinking, or disposal patterns. These possibilities may be tested through a more complete study of the remaining artifacts as well as further excavation recovering hearths, pits, and other features.

A combination of functional factors with socio-economic factors may well be present. Success in dealing with such a combination will be related to the degree of success we have in using additional historical or archeological data to associate ceramics with military rank.

Beyond the distributional data collected for the stockaded and non-stockaded areas, specialized distributions were found within the stockade. Materials of all types seem to be concentrated in the eastern and northeastern portion of this area, and they seem to have a distribution that generally follows the interior fortification ditch. The area near the northeastern corner of the ditch has the heaviest concentration of artifacts of any location within the stockade. Here we found concentrations of ceramics as well as personal items, gun parts, nails and post holes. The nails and the post holes suggest a structure in this vicinity. The most obvious differential distribution on the summit of the mound is again between "Teaware and "Heavyware". "Heavyware" has a strong concentration in the northwestern corner and another lighter concentration in the northeastern corner of the stockade, (Fig. 12). "Teaware" on the other hand is most strongly concentrated in the eastern to northeastern section of the stockade. (Fig. 13). These ceramic data together with the data from other artifacts suggest that the eastern and northeastern portions of the stockade were a general living area, while the northwestern quadrant of the stockade seems to have been primarily associated with either eating or preparing food.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OF
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DISTRIBUTION OF TEAWARE
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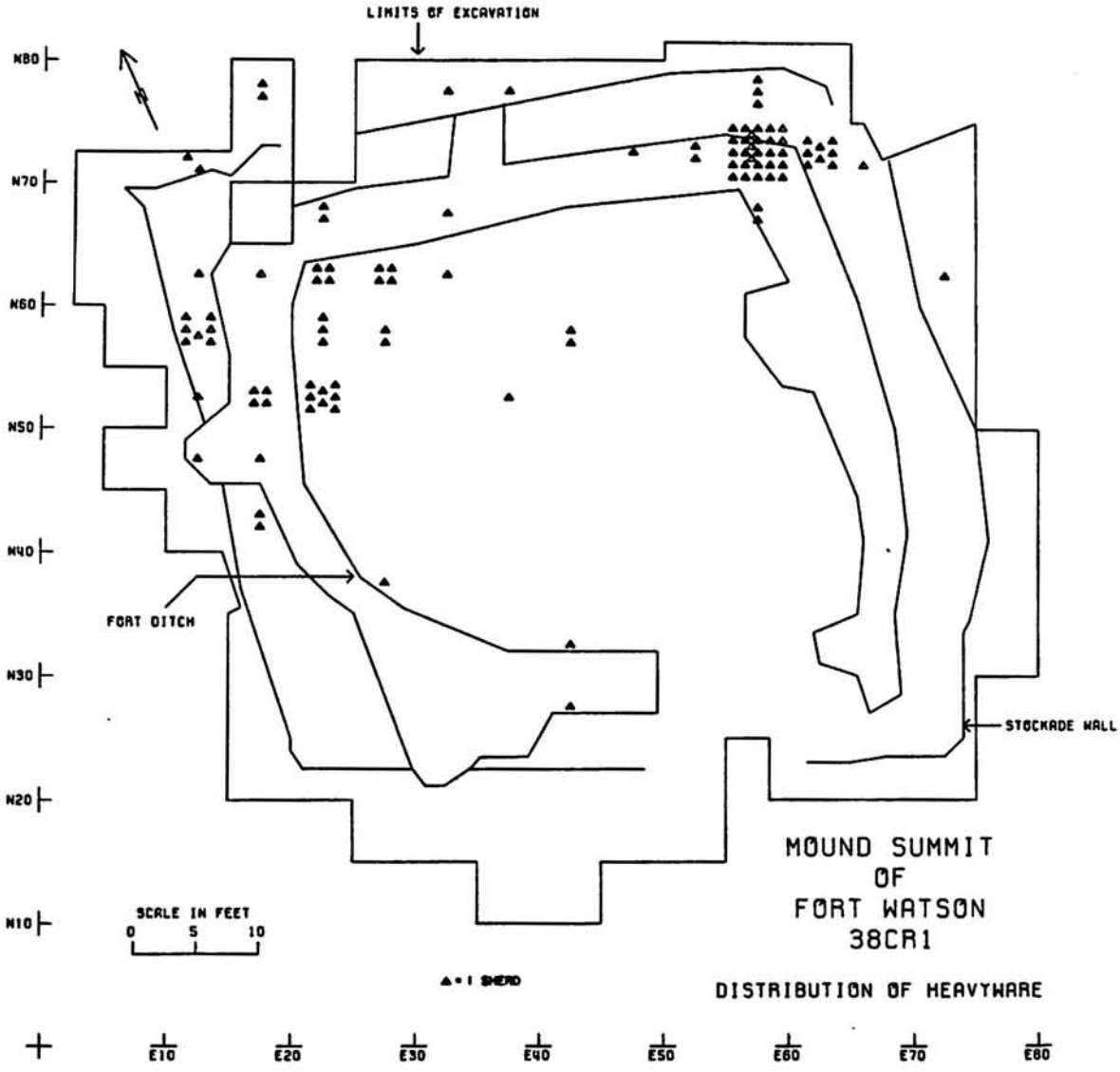
Figure 12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MOUND SUMMIT
OF
FORT WATSON
38CR1
DISTRIBUTION OF HEAVYWARE
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Figure 13

CONCLUSIONS

Exploratory excavation was begun at Fort Watson with two primary factors concerning the historical material in mind. A review of the historic documents indicated that the British occupation of Fort Watson was probably the only significant historic component and that the site had not been significantly disturbed since the embarassingly abrupt abandonment by the British. The first step in excavation and analysis was to test these initial suggestions through archeology.

Excavation immediately indicated that the suggestion of a lack of disturbance was correct. In most cases British features were found at the base of the topsoil, and the only place the site had been significantly disturbed was along the shore of Lake Marion. Testing the purity of the eighteenth century component was the next step. This was done through an analysis of the type and temporal placement of artifacts found on the site. Ceramics as well as many other artifacts were important in this testing.

Ceramic analysis suggested that either the site was not a single component or that the compiled data used to evaluate the temporal position were wrong. One kind of pearlware popular on the site, was given an initial occurrence date in South's "mean ceramic date formula" chart of 1790. A reexamination of the information from the site indicated that this material was spatially associated with Revolutionary War Period artifacts. This associational data together with the documentation was used to revaluate the temporal position of this pearlware. On the basis of information from Fort Watson the date for the initial appearance of this ceramic type (annular pearlware) in America can be pushed back from 1790 to 1780.

After the temporal and spatial characteristics of the artifacts were under control the next step was to develop hypotheses that could be tested in order to increase understanding of the activities that took place at Fort Watson. One of the most interesting factors from the point of view of methodology is that South's "mean ceramic date formula" generated an hypothesis that has socio-economic and/or functional implications. On the basis of the initial hypothesis, typological and formal distribution studies were performed. These examinations indicated significant differences in the distribution of the type and form of ceramics for the stockaded and non-stockaded proveniences as well as for proveniences within the stockade. These differences prompted a refinement of hypotheses concerning activities that will be tested through the use of recovered artifacts as well as further excavation.

In reviewing the analysis of ceramics from this site we can say that so far they have contributed three primary units of information:

1. Studies have refined our knowledge of the temporal placement of annular pearlware.

2. Differences in the distribution have outlined different areas of activity on the site.

3. The ceramics together with historical information on value and function have enabled us to make some hypotheses concerning the structure of activities within a field camp of the British army.

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"A PROTON PRECESSION MAGNETOMETER SURVEY OF FORT PICKENS, PENSACOLA, FLORIDA"

George R. Fischer

In conjunction with an underwater archeological survey of the Florida section of Gulf Islands National Seashore in July and August of 1973, a magnetometer survey was conducted of selected land areas in the Fort Pickens section of the Seashore. Fort Pickens is located south of Pensacola on Santa Rosa Island. The purpose of this survey, which took place August 8 and 9, was to test the feasibility of using a magnetometer in such an area to locate buried ordnance or other features.

Application of magnetometry in a terrestrial context contrasts in some ways to the use of such an instrument in water, having both advantages and some problems which are not encountered in the marine environment. Obviously, a major advantage is control of location which permits a more precise and definitive analysis of anomolies than possible in a moving boat. On the negative side, however, is the fact that the ground often contains many subtle natural magnetic deviations which confuse the readings, and particularly in an area such as a fort, enormous concentrations of bits of steel and iron, bricks, fired earth, and other unnatural anomolies which provide distortions. Compounding these factors in the areas in which the work was undertaken was the large number of motor vehicles, the electrical ignitions systems which cause considerable distortion of the magnetometer readings, even from a substantial distance.

It might be appropriate at this time to provide a brief explanation of how a proton magnetometer operates, oversimplified not so much because of the nature of this audience, but largely because the physics involved are complex enough so the author's own understanding is quite oversimplified.

A proton is the positively charged constituent of atomic nucleii, and characteristically spins continuously with a precise angular momentum. Because of its positive charge, a proton is then a minute spinning magnet. Normally protons will be randomly oriented because the earth's magnetic field is not strong enough to cause alignment. This random alignment will be modified by the presence of a magnetic field, such as created by a body of ferrous material. When subjected to an external magnetic field the proton axes will try to align themselves with the applied field. Instead of jumping into alignment, however, the proton axis will precess (rotate) about the external field vector. The frequency at which the protons precess is directly proportional to the strength of the external field. The proton precession magnetometer utilizes a hydrocarbon fluid in its sensor head as a source of protons. A strong magnetic field is applied to the head at an angle to the earth's magnetic field, which polarizes the protons in the direction the field is applied. When the field is suddenly removed, the protons try to realign themselves around the earth's magnetic field. The frequency at

which the protons precess is proportional to the strength of the natural magnetic field. If the strength of that field is increased by the presence of ferrous material, the frequency of precession is then what the magnetometer measures, and reflects the presence of magnetic materials.

The instrument used for this study was a Varian model V4937-A marine proton precession magnetometer and marine sensor head. This machine has a range of 20,000 to 100,000 gammas (the standard magnetic unit used) with an accuracy of 1 gamma and a cycle time of 1-1/2 seconds. Although it is designed for marine applications, the lengthy armored cable and sensor were particularly well suited to use of this delicate equipment in a rugged field situation. The magnetometer was owned and operated by Martin Meylach of Meylach Magnetic Search Systems in Miami.

The major area studied was Fort Pickens itself. This fort, named in honor of Revolutionary War hero, General Andrew Pickens of South Carolina, is located on the western tip of Santa Rosa Island directly south of Pensacola. When completed in 1834, the fort was pentagonal in shape with a bastion at each of the five corners. The walls were 12 feet thick and 40 feet high with casements for 250 cannons. It was occupied by a small garrison upon completion, but had been unoccupied for ten years prior to 1861, when the United States government authorized the reinforcement of the Pensacola forts to prevent Florida, then ready to secede from the Union, from seizing them. Fort Pickens saw considerable action during the Civil War, and was one of three Southern forts to remain in Union hands throughout the war. Following the war it served as a prison. Geronimo, leader of the Chiracahua Apache, and a large number of his followers were imprisoned there from October, 1886 to May, 1888. Between 1890 and 1900 the fort was modernized and strengthened. At the beginning of the Spanish-American War, it was again activated and Battery Pensacola constructed within the fort walls.

Little 19th century ordnance remains at the fort. One large cache of 8" and 10" cannon shells was located prior to our activities, suggesting that other caches might exist. During the modifications of the Spanish-American War period, casemates on the south front were filled to provide additional shielding for Battery Pensacola.

In the course of similar modifications at Fort Zachary Taylor in Key West, enormous quantities of ordnance including even 15" columbiads, were dumped in casemates and cisterns with the fill, and used in reinforcing concrete construction. On the chance that this could also have been done at Fort Pickens, the filled casemates were of prime interest. The parade and the area of the known cannon ball cache were also tested. Additionally, local legend holds that a 12" model 1890 seacoast mortar had been buried adjacent to Battery Worth, a Spanish-American War period structure located one mile east of Fort Pickens. This rare piece of ordnance, which with carriage would weigh 50,000 pounds, could be of prime exhibit value.

The technique used was to establish a grid system of five foot squares in the areas to be studied with the exception of the parade, where two perpendicular lines with north-south and east-west axes marked

at five foot intervals were established. Readings were then taken at each of these points. The strength of a magnetic field as recorded by the magnetometer varies inversely with the square of the distance between the object and the sensor head, a factor which it was necessary to control. The effect of this, simply explained, is that the same reading will be recorded for a small ferrous object close to the sensor head as for a larger one some distance away. To provide control of this phenomenon, two readings were taken at each point in the grid. A rack was constructed which would hold the sensor head at a height of one foot for the primary reading and at five feet for a secondary reading.

The operator set up the magnetometer itself at a station outside the grid area. Two men carried the sensor head through the grid, while a fourth man at the magnetometer recorded the grid coordinates and the two gamma readouts for each. It should be pointed out that such a system must be used to provide significant data from such a study. At first thought, many would envision the simplest approach to be to wander around the field carrying the magnetometer head. The many variables involved, too complex to further detail here, require very precise positioning of the head perpendicular to a north-south axis. With precise grid control, three dimensional data is obtainable on the location of anomolies, as well as information on the relative size of the object causing the anomoly. In the parade a least two parallel lines should have been run on the two axes in order to provide three dimensional data, the amount of time available did not permit that refinement. Following acquisition of the data, it is recorded on graphs, where the relative strength of any anomolous readings is reflected. The difference between the readings at two elevations reflects the relative distance of the anomoly from the ground surface. By charting the readings on both axes of the grid and comparing the two, a three dimensional profile can be constructed which will provide refinement of data on precise size and location of anomolies.

To establish an anomoly profile for ordnance materials, a test was first run in the vicinity of an 8" Rodman cannon, weighing some 18,000 pounds, which is displayed near the present entrance to the fort. A 25' by 50' grid of 5' squares was established adjacent to the cannon, and located so that one trunnion was directly at the midpoint long side. As vertical control was not required, only one reading was taken at each point. With a body of metal this large, readings increased dramatically as the head moved from the edges of the grid toward the gun. At a distance of 10 feet the magnetometer lost phase coherence. The reading it received was so strong it recorded wildly and erratically, leaving no doubt that if ordnance was buried, we could locate it from a considerable distance. A similar test over the cannon ball cache, where some shells were known to remain, was equally dramatic, and suggests possible more ordnance remains there than had been supposed.

On the area of the filled casemates on the south front, a grid 40 feet wide (the width of the terreplain) and 130 feet in length was established. Because of holes in the ground, and thick growth of

shrubbery, many of the points could not be reached. Two parallel lines in the center of the terreplain were run the length of the grid with readings at each point. This was the only test in which the data was intensively analyzed in the field, as the question of whether or not ordnance was present was of primary interest to the park staff. A chain link fence on one side of an open casemate, and some steel aircraft landing mats on the other were quite clearly recorded. No other anomolous readings indicated the presence of anything other than small pieces of scattered metal near the ground surface.

In the parade ground, a line was run south from the sally port a distance of 235 feet to the back side of Battery Pensacola, with a perpendicular running east and west from the 115 foot line. Readings were taken at five foot intervals. These data are presently being charted and analyzed by Mr. Meylach. Preliminary observations suggest a scattering of ferrous material in the parade with no major anomolies, except that the magnetometer began to lose phase coherence within 25 feet of Battery Pensacola. This is almost certain to be caused by buried reinforced concrete construction relating to the battery.

At Battery Worth a 10' grid 20' by 110' was established. Two very strong anomolies were encountered and the survey in those areas refined to readings on a 5' grid. One could be explained by reinforced concrete of modern construction, but the other was presumed to be the location of the mortar. Excavations in the second area by park staff with a backhoe uncovered the mortar's carriage, but the tube itself was not found in that location by the time weather forced them to stop operations.

In conclusion, indications are that the magnetometer is highly effective in locating fairly large masses of metal at a distance of 25 feet or more in this context. It also is effective in locating smaller masses closer to the sensor head and differentiating them from larger anomolies. However, its effectiveness for locating the smaller objects is to some extent negated by the fact that the more sophisticated conventional metal detectors available can produce similar results much less expensively.

COUNTY SEAT TOWNS AS ARCHEOLOGICAL SITES: SOME ARKANSAS EXAMPLES

Samuel D. Smith and William V. Davidson

INTRODUCTION

In recent months both of the authors have been engaged in independent but closely related research projects concerned with nineteenth-century county seat towns in Arkansas (Davidson 1973; Smith 1973 and the survey discussed in this paper). While the county seat town has been the subject of writers of diverse backgrounds, relatively little attention has been given to the possibility of using archeological techniques to correlate existing historical records with the actual sites. In Arkansas, there are a rather large number of extinct county seat towns whose archeological potential remains untapped. Furthermore, no other class of settlement types is known to have the same degree of research potential. Unlike early towns in general, for a county seat there will usually be a substantial written record which often includes one or more plats of the town layout. In at least one instance (Davidsonville) we have demonstrated the feasibility of reestablishing such a town plat on the basis of surface evidence alone. The excavation of such a site should provide us much otherwise unavailable information.

While our own work has been limited to Arkansas, it is assumed that in most of the southern and middle American states well documented county seat town sites are available for study. Comments concerning the history and development of this particular settlement type have been included here in order to bring into focus our own Arkansas examples. However, it is hoped that this may serve to stimulate an examination of the research possibilities in other states as well.

THE COUNTY SEAT TOWN IN HISTORICAL PERSPECTIVE

In seeking the origins of the standardized county seat-town square settlement form, we become immediately involved in the story of the diffusion of the rectangular grid system of town planning. The grid pattern is of course several thousands of years older in origin, and today is always coincident with town square forms; however, by no means should this connection be understood as "natural". For example, there were open-space central places in the non-grid "court-towns" of pre-Bismarck Germany (Smailes 1968: 68).

The history of the spread of the grid pattern was traced over 25 years ago by Stanislawski (1946). He began in the Middle East at Mohenjo-Daro, and later followed the form to Assyria, Greece, Rome, and during the post-Renaissance to France and England. Perhaps fearing the grid pattern to be thought of as natural of expansion, Stanislawski admonished his readers:

> The casual assumption that the grid almost automatically becomes the pattern of a new settlement cannot hold up in the light of the history of its distribution. Only those regions directly associated

> with, or accessible to, areas of earlier use have shown evidence of its existence. I know of no region in the world that will clearly contradict this thesis (1946: 318).

Likewise, the European colonizations in the New World brought the grid pattern as the favored form of town plan (Stanislawski 1947). Notably for English-speaking America, in 1682, William Penn used the grid as the dominant settlement form for establishing Philadelphia (Smailes 1968: 100). Later, criticisms were frequently leveled at such a rigid layout for the New American cities. The eighteenth-century English traveler Francis Bailey, for example, noted that:

> ...I think that often times it [the grid pattern] is a sacrifice of beauty to prejudice, particularly when they preserve in making all their streets cross each other at right angles, without any regard to the situation of the ground, or the face of the surrounding country...(Holmes 1969: 110).

Nevertheless, under the onslaught of what Lewis Mumford (1961: 421) calls "resurgent capitalism", which "treated the individual lots, blocks, and streets as abstract units for buying and selling", the grid form prevailed.

By the first half of the nineteenth century when lands west of the Mississippi, including Arkansas, were opening to European settlement, settlers were selecting grid layouts for almost all of their planned towns. Specifically, those planned settlements that were to have political roles, primarily as seats of county government, had as a central focus an open square (with government building) in the center of town. The use of open-spaces in association with centers of political settlements had of course been the case in New England "town commons", and there is as well ample evidence of the transferal of such a form from Europe to America at the hands of special interest organizations during the early nineteenth century. Prime examples of such planned communities would be those of the Harmony Society (Larner 1962: 132-133) and the Church of the Latter Days Saints (Sopher 1967: 32-33; Carter 1955).

Of more direct historical importance is the fact that seventeenth-century English towns of Northern Ireland were often planned with a central square in a form which appeared at the beginning of the next century in the vicinity of Philadelphia. Although the first counties in what is now the United States were formed in Virginia in 1634, certain early-eighteenth-century Pennsylvania county seat towns appear to be the American source of that trait known as the "central courthouse square" (Price 1968: 37 and 41). Interestingly enough, this same trait can scarcely be found in Pennsylvania today. It is found most frequently in the states of Georgia, Tennessee, Kentucky, Indiana, Illinois, Iowa, Missouri, Texas, and Arkansas (Price 1968: 32, Fig. 3).

The state of Arkansas lends itself well as a study area for archeological research directed toward county seats. Perhaps no other state in the country has had the propensity to change the locations of county seats so frequently--as many as 6 times in one county. Indeed, there have been over 180 county seats among the 75 modern counties. Among these numerous relict sites, we are provided ample laboratories to view from an archeological perspective this segment of our regional past.

Our previous large-scale research on the relocations of county seats (Davidson 1973) suggests that for Arkansas 4 primary factors most influenced relocations. These may be applicable elsewhere and serve as an aid in locating any "lost county seats". We found that relocations were apparently related to (in chronological order): 1) water routes, 2) the geographical centers of counties, 3) population growth centers, and 4) new railroad routes.

On a more localized scale we have completed a survey of one portion of the state concerned with more specific kinds of information about particular sites.

THE NORTHEAST ARKANSAS SURVEY

As is often the case, our experience with one site, Davidsonville (Smith 1973), led to a desire to learn what kinds of additional sites might exist in the larger general area. This was envisioned as a complete survey of Northeast Arkansas, in which emphasis would be placed on determining for each of 17 counties the kinds of county records available and especially if there were plats still extant which would show the basic plan of other early county seat towns. Where such plats were found, photographic or other copies were made. As time would permit, an attempt was made to relocate as many of the sites as possible. The results of the first of these objectives are summarized in Table 1. We also know, or have tried to find, the location of all the sites for which an early plat exists.

The 17 counties in Table 1 are those assigned to the Arkansas State University station of the Arkansas Archeological Survey for purposes of site recording, etc. Though at best an arbitrary division, this portion of Arkansas (see Fig. 1) provides us with considerable topographic diversity and may be somewhat representative of the state as a whole. Major landforms include, the Eastern or Mississippi River Lowland, Crowley's Ridge (a north-south erosional remnant), the Western Lowland, and the eastern edge of the Ozark Plateau (Morse 1969: 14-15).

Since completing this initial survey, we have already begun to extend our efforts to sites in some other parts of Arkansas. It is hoped that eventually this kind of reconnaissance can be completed for the entire state.

Table 1 Northeast Arkansas County Seats and County Records.

COUNTY	CREATED IN:	RECORDS FROM:	PRE-1870 COUNTY SEATS:	PRE-1870 COUNTY SEAT PLATS:	POST-1870 COUNTY SEATS:
Clay	1873	1881			Corning,Boydsville,Corning-Boydsville,Corning-Piggott
Craighead	1859	1878	Jonesboro		Jonesboro,Jonesboro-Lake City
Crittenden	1825	1826*	Home of J.Fooy*, Greenock,Marion	Greenock 1827	Marion
Cross	1862	1862	Wittsburg*,Cleburne,Wittsburg		Wittsburg,Vanndale,Wynne
Fulton	1842	1870	Home of P.Ground*,Salem		Salem
Greene	1833	1876	Home of B.Crowley*, Paris,Gainesville		Gainesville,Paragould
Independence	1820	1820	Batesville(Polk Bayou)	Batesville 1821,Batesville addition 1835	Batesville
Izard	1825	1869	Liberty(Jacob Wolf's),Athens, Mount Olive(Pine Bayou,New Athens,Mount Vernon)		Mount Olive,Melbourne
Jackson	1829	1831	Home of T.Wideman*,Litchfield, Elizabeth,Augusta*,Jacksonport	Elizabeth 1847,Jacksonport ca.1848,Jacksonport ca.1872	Jacksonport,Newport
Lawrence	1815	1815	Home of S.Hewitt*,Home of R. Murphy*,Davidsonville(Lawrence) Jackson,Smithville,Clover Bend, Powhatan	Davidsonville 1818, Smithville 1848, Powhatan 1849	Powhatan,Powhatan-Walnut Ridge,Walnut Ridge
Mississippi	1833	1865*	Cornwall,Osceola		Osceola,Osceola-Blytheville
Poinsett	1838	1873	Bolivar,Harrisburg		Harrisburg
Randolph	1835	1836	Home of J.Russell*,Pocahontas	Pocahontas 1836 and ca. 1849	Pocahontas
Sharp	1868	1880	Evening Shade		Evening Shade,Evening Shade-Hardy,Ash Flat
St. Francis	1827	1865*	Home of W.Strong*,Franklin (St.Francisville),Madison, Mt.Vernon(?),Madison		Madison,Forrest City
White	1835	1836	Home of D.Crise*,Searcy	Searcy ca.1843,Searcy 1851	Searcy
Woodruff	1861	1861*	Augusta	Augusta 1869*	Augusta,Augusta-Cotton Plant-McCrory,Augusta

*=copies of some older records *=temporary location ()=other name for same location *=city records "hyphen"=twin or triple county seats

In carrying out our survey of Northeast Arkansas, we wished to concentrate on the period of early settlement, i.e., before railroads. Thus, it was decided to use a cut-off date of 1870, the approximate beginning of the Railroad Era in this part of the state (Hempstead 1911: 401). Sites dating after this period are more often still inhabited and their archeological potential restricted.

In attempting a state-wide survey, 1860 would be an even better terminal date, assuming one wished to avoid railroad towns. At least one railroad-inspired county seat relocation probably occurred as early as 1855 (Walker 1971: 8), though the first railroad line in Arkansas was not complete until 1858 (Ferguson and Atkinson 1966: 91).

The beginning point for any such survey would be 1813. At this time present day Arkansas fell within either Arkansas or New Madrid counties, which had been formed as part of the Missouri Territory established in 1812. In 1815, Lawrence county was carved out of New Madrid County and included most of what we now refer to as Northeast Arkansas. By 1819, when Arkansas became a separate Territory, there were 3 additional counties. In 1836, the year of statehood, Arkansas was composed of 34 counties, ten of which are included in our Northeast Arkansas survey (Ferguson and Atkinson 1966: 26-30; McLeod 1944).

As indicated in Table 1, a total of 14 pre-1870 county seat plats were found in the counties surveyed (32 of the 41 different pre-1870 locations were towns). Presumably this number would be greater were it not for the numerous "Civil War" related courthouse fires which have occurred in Arkansas. We may also have missed a few plats which are still extant. In one case (Woodruff County) no plat could be found in the county records, though it was almost certain that there was one. We finally located it on a back room wall of a local bank and learned that it had originally been part of the city records.

After observing only a few plats it became obvious that some sort of terminology was needed to distinguish between them. Towards this objective, the very excellent article by Edward T. Price (1968) entitled "The Central Courthouse Square in the American County Seat" helped to clarify a number of points. Drawing on data from more than a thousand county seats, he defines 4 basic types of central courthouse squares that occur throughout the central-eastern and southern states (Fig. 2).

Once the importance of this basic feature was recognized, it became apparent that all but 3 of our plats could be placed into a single category. In spite of considerable overall configurational differences, all of these can be seen as variations of the "Shelbyville (Block) Square" type plan. The exceptions are a rectangular-block gridiron plan made before the town became a county seat, a "Harrisonburg Square" type plan, and one plat with a central square which is half "Shelbyville", half "Four-Block".

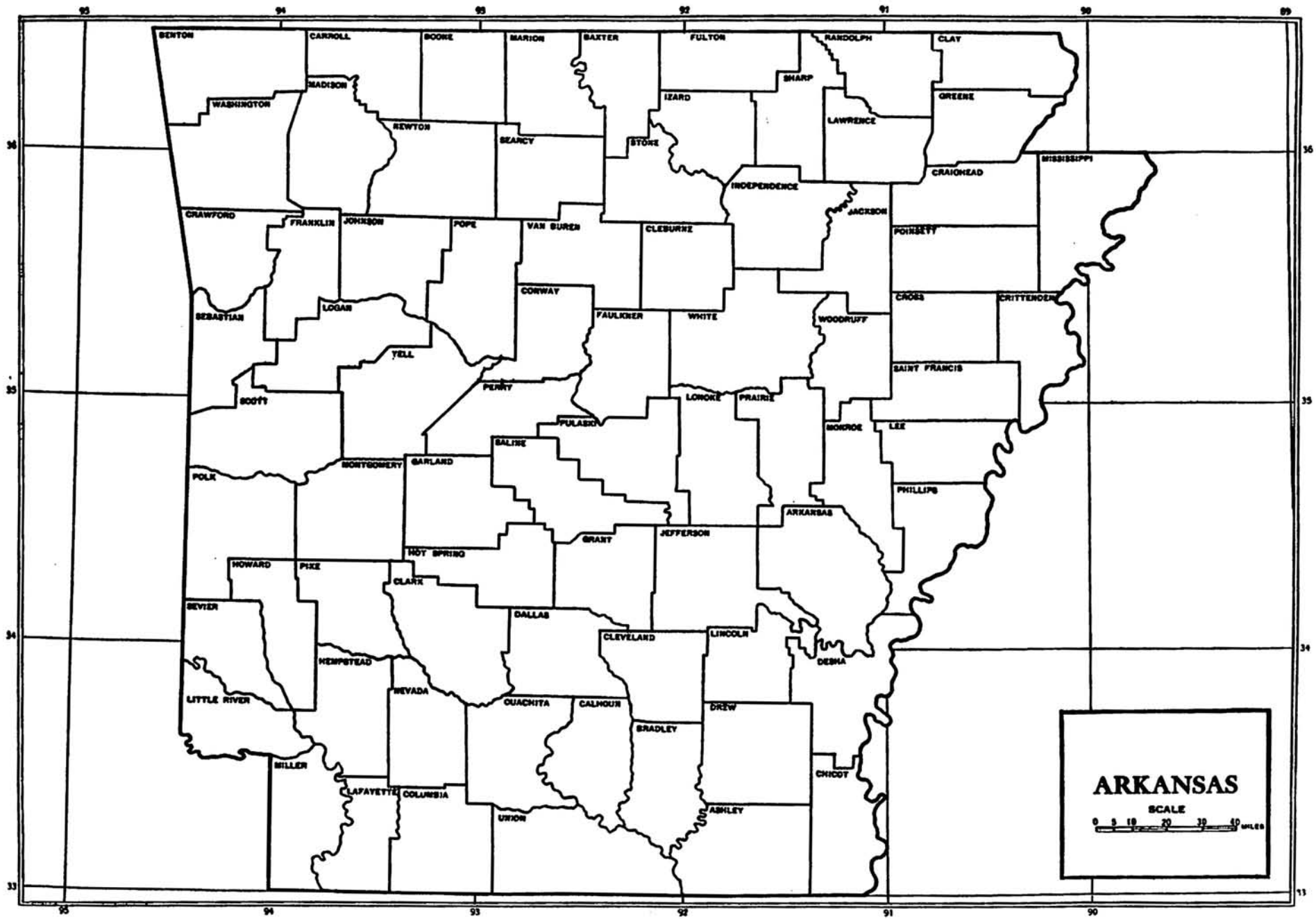

Figure 1 Map of Arkansas counties.

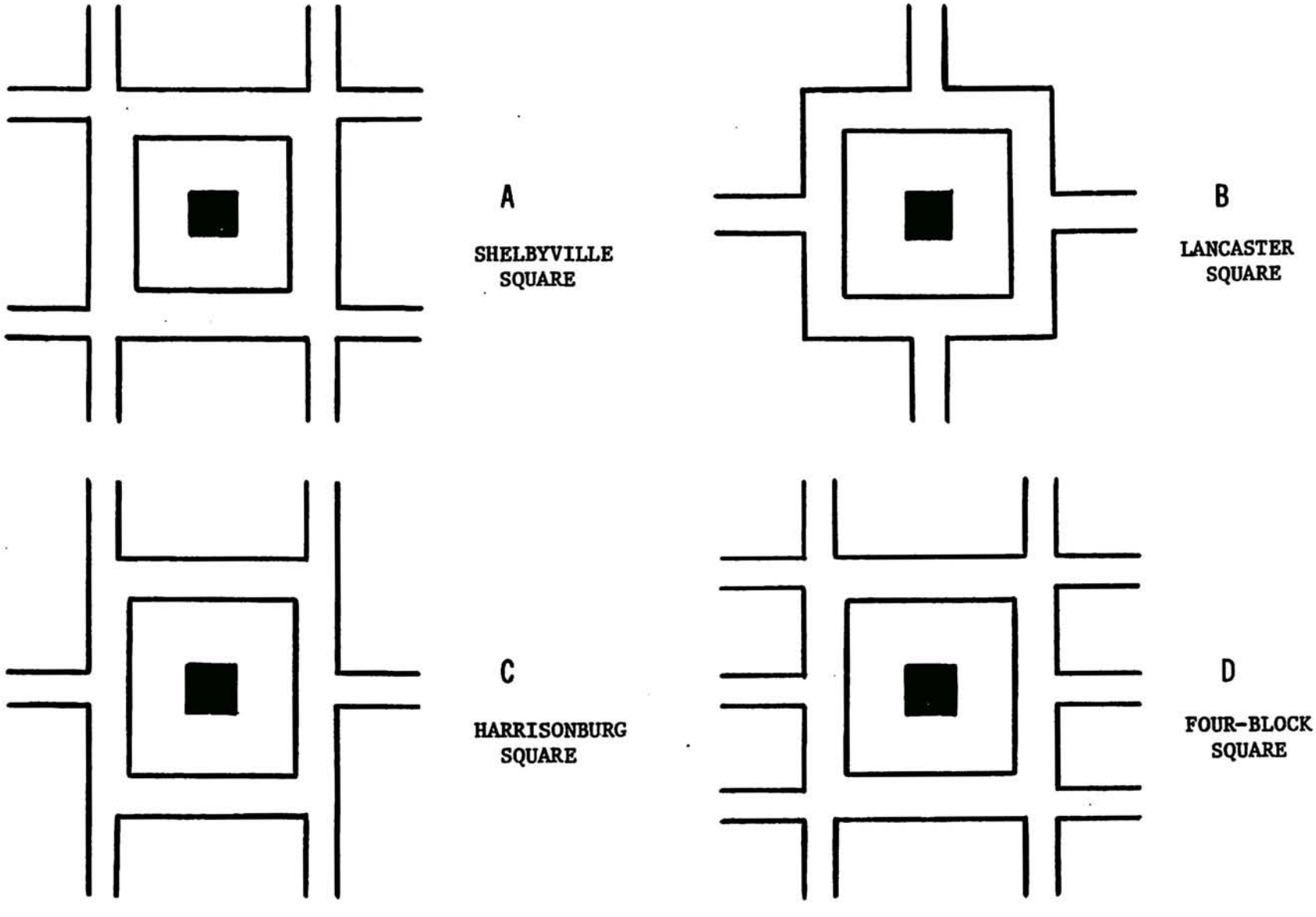

Figure 2 Common types of central courthouse squares. "A" also called "Block Square" without reference to courthouse. "B" also called "Philadelphia Square" without reference to courthouse. From Price (1968: 30).

That these plats should be of major concern from an archeological viewpoint is readily apparent. As others have demonstrated (e.g., Fairbanks 1956; South 1964; Smith and Bullen 1971), the existence of a plat can sometimes provide an otherwise unavailable link between the historical documents pertaining to a site and the site itself. In the case of courthouse towns, where the most prominent building was usually centrally located, the chances of realignment should be exceptionally good.

The following is a brief discussion of each of the plats which were located by our survey and how these are known to relate to the town site. This will give some idea of the kinds of data available as well as illustrate the problems inherent in this type of research.

White County

The presently occupied county seat town of Searcy is a model of the uniformity associated with the Shelbyville Square plan. As shown in the original plat of 1843 (Fig. 3) the public square and major blocks are all 224 by 224 feet. The major blocks all have 8 lots, each 112 feet long by 56 feet wide. All streets are 40 feet wide. The 1851 plat shows continued expansion of the town around the same basic plan. Urban congestion prevents the site from having any major archeological significance.

Woodruff County

The town of Augusta predated the formation of Woodruff County and apparently a public square was not included in the planning. There have been several courthouses located in various blocks (Goodspeed 1890: 276). In the 1869 plat (Fig. 4) the courthouse square is at the north edge of town. The block plan exhibits the same sort of uniformity as Searcy. Most of the 62 blocks are 270 feet square with 12 lots measuring 135 by 45 feet. In one row, each block has 2 extra lots of this same size. The streets are 40, 50, and 60 feet wide. Archeologically, this site would have the same restrictions as Searcy.

Randolph County

The present day town of Pocahontas has a classic Shelbyville Square, originally 180 feet by 180 feet. The centrally located courthouse completed in 1872 has only recently been abandoned in favor of a modern structure in an adjoining block. According to the plats of 1836 and 1849 (Table 1) all of the blocks (54 to 56 of them) were 180 feet square. Each is divided into 6 lots 60 feet wide by 90 feet long. Most of the main streets are 45 feet wide with cross streets 30 feet wide. Broadway is 60 feet wide, and one cross street is only is only 24 feet wide. The archeological possibilities here are again limited.

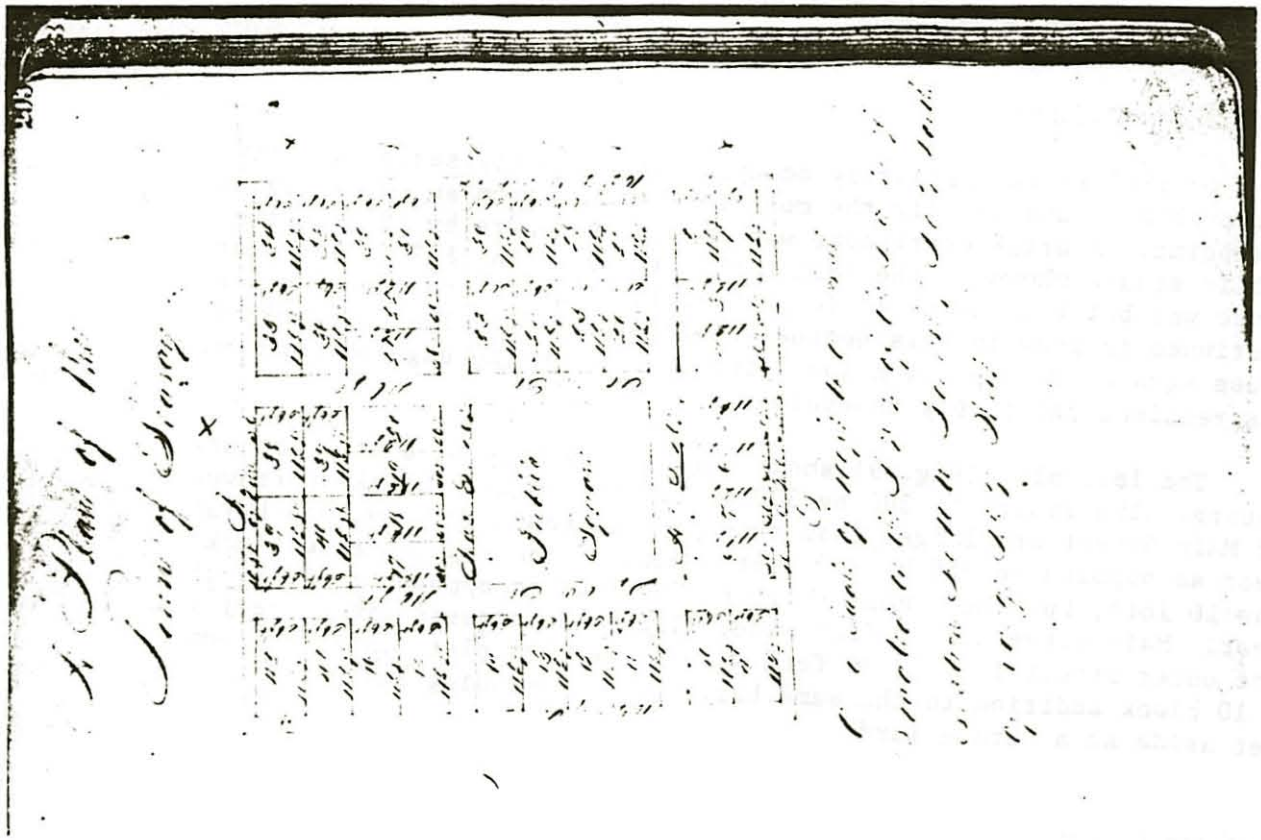

Figure 3. A plan of the town of Searcy, ca. 1843, Deed Book A, White Co. Records.

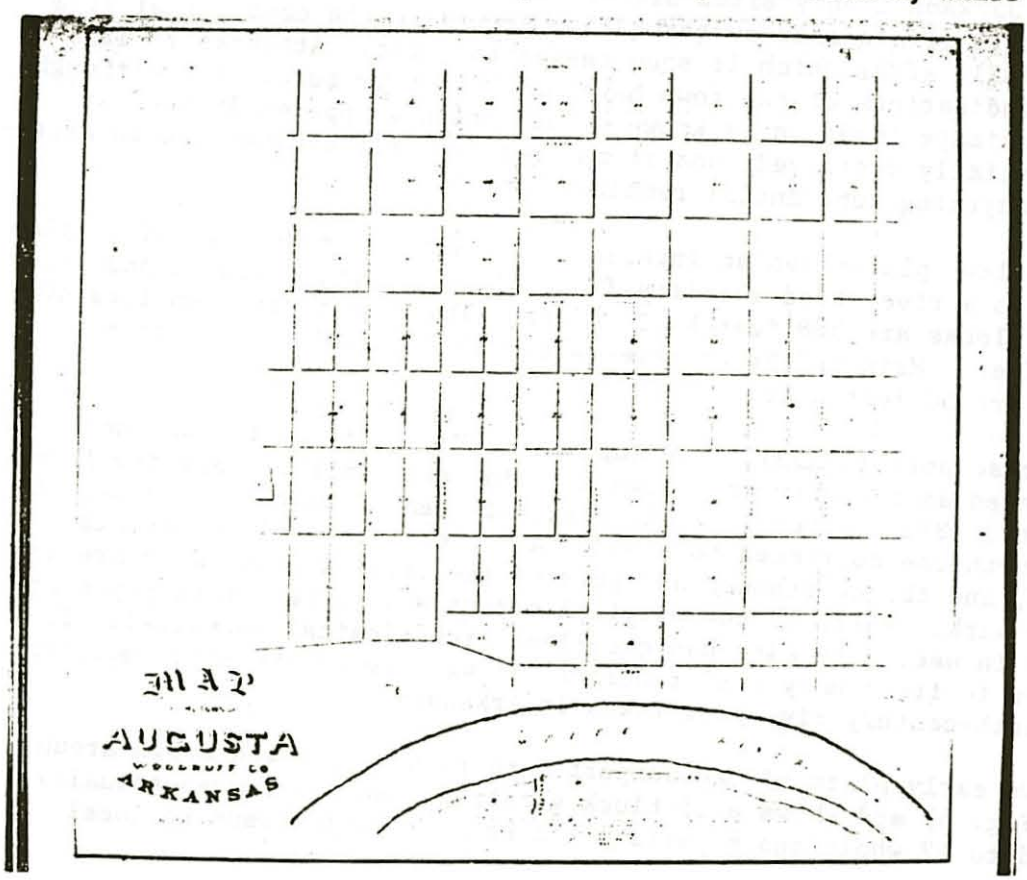

Figure 4. The 1869 map of the town of Augusta, Woodruff County. Presently located at the Bank of Augusta.

Independence County

Of the several presently occupied early county seats, the town of Batesville is undoubtedly the most interesting from an archeological viewpoint. A brick courthouse was constructed here by 1821 on the public square shown on the 1821 plat (Fig. 9). In 1857, a new courthouse was built on Block 15 (Goodspeed 1889: 261), and the town has continued to grow in this northeasterly direction. The origianl courthouse square area is now a low lying section on the edge of town which has remained relatively undeveloped.

The 1821 plat (Fig. 9) shows our only example of a Harrisonburg Square. The square is 300 by 300 feet. The regular blocks northwest of Main Street are larger than those in the southeast row, 350 by 360 feet as opposed to 350 by 300 feet. Each of the regular size blocks has 10 lots, but these measure 70 by 180 feet as opposed to 70 by 150 feet. Main street is 60 feet wide. The cross streets are 40 feet wide. One outer street is only 30 feet wide. The 1835 plat (Table 1) shows a 10 block addition to the same basic plan, including half of Block 19 set aside as a "Grave Yard".

Jackson County

Two Jackson County sites are of considerable interest. The town of Elizabeth (state site number 3JA54) served as the county seat from 1839 to 1851, after which it soon ceased to exist. Attempts to find surface indications of the town have not been very successful although the approximate location is known. The site has apparently been at least partially destroyed, and it may require test excavations to determine if anything substantial remains.

The 1847 plat shows an interesting attempt to make a gridiron plan conform to a river bend locality (Fig. 5). The public square and other regular blocks are 300 feet by 300 feet. The blocks have ten lots 60 by 150 feet. Main and Front Streets are 60 feet wide. The other streets are 50 feet wide.

Jacksonport (3JA53), like Augusta in Woodruff County, was not established as a county seat town but did serve in that capacity from 1853 until 1892. After 1892, it virtually ceased to exist, though the 1869 courthouse continued to stand. A restoration project was started in 1962, and the courthouse and part of the original town site are now a state park. Parts of the original street system were resurveyed and are now in use. The site has excellent archeological potential. In addition to its county seat function, it was one of the more important nineteenth-century riverport towns in Arkansas.

Two early plats of Jacksonport were found. One was drawn around 1848 (Fig. 6) and shows a 55 block gridiron plan. This was actually reduced to 42 whole and 8 partial blocks as an adjustment to local

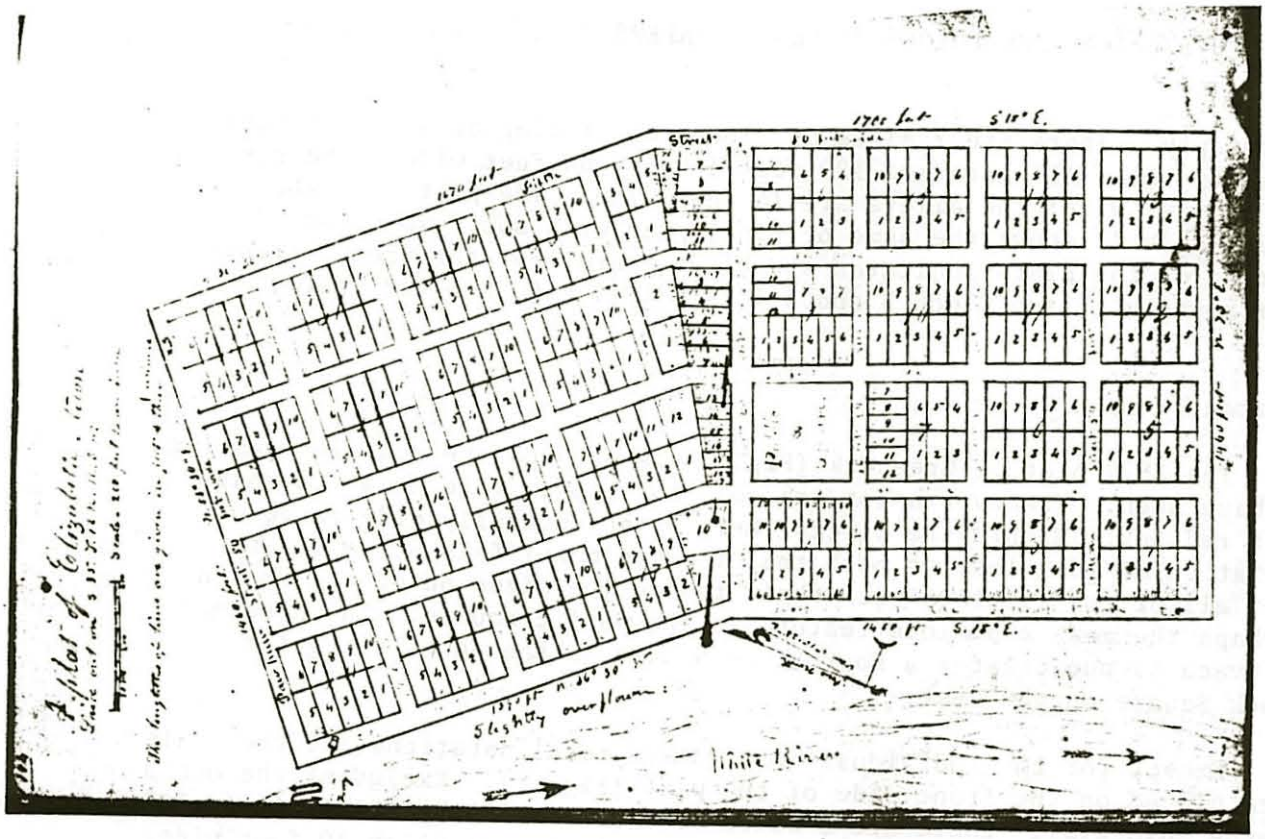

Figure 5. A Plat of Elizabeth Town, 1847, Deed Book D, Jackson Co. Records

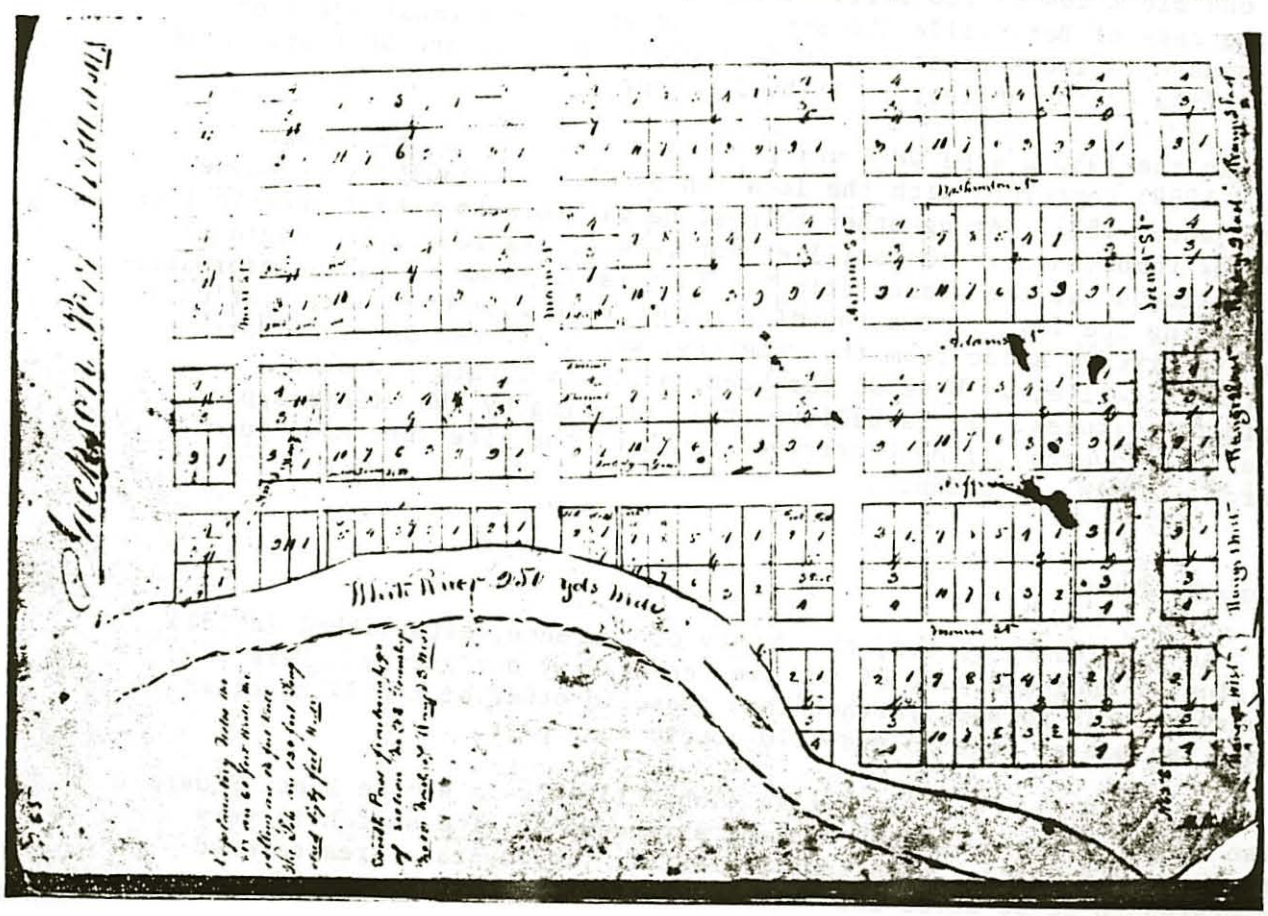

Figure 6. The ca. 1848 plat of Jacksonport, Deed Book D, Jackson County records.

topography. There are 2 sizes of blocks consisting of 4 and 10 lots respectively. All lots are 120 feet long by 60 feet wide. The streets are 60 feet wide; the alleys are 16 feet wide. The plat made about 1872 (Table 1) shows the same original plan with some expansion. Neither of the plats indicates a public square, but the present restored courthouse utilized Block 5 and 4 lots in Block 6, Range 3 East.

Crittenden County

The 1827 plat of Greenock (Fig. 7) is perhaps the most interesting we have seen. Whenever a lot was sold the appropriate area was shaded with red ink. Within the blocks there is an unusually wide range of variation of lot size; so much that the map maker felt compelled to list all of the 193 lots with their respective sizes below the sketch. Perhaps the most anomalous feature is the public square. The presence of Ovaca Avenue creates a Four-Block Square on the east, a regular Block Square on the west.

Except for the individual lots, dimensional notations and the scale were placed on the front side of the plat (Fig. 8). Excluding the Ovaca Avenue "block(s)," there are 3 sizes of blocks: 264 by 225 feet, including an alley 12 feet wide; 200 by 224 feet, including an alley 10 feet wide; and one block 264 by 200 feet. The public square is 300 by 300 feet (as in the case of Batesville the streets end at the outermost edges of the square). Two streets are 60 feet wide; the rest are 50 feet. Lots range from 47½ by 56 feet to 75 by 126 feet.

In the 1950's some work was carried out by a local historian (Hale 1959) concerned with the location of Greenock (3CT63), abandoned since about 1851. Among other things, he was able to make transcriptions from 32 tombstones in the still extant cemetery (a feat which could not be duplicated at the present time). In this way some valuable information (including the fact that a founding father came from Greenock, Scotland) was preserved. Aside from the cemetery, which is some distance north of the town site, we have so far been unable to locate any other definite features. It is believed that flooding by the Mississippi River has covered, if not destroyed, much of the site, but additional search efforts are planned.

Lawrence County

As previously stated, the county of Lawrence, established in 1815, originally included most of the area covered by our survey. Here the county records go back farther than those in other of the 17 counties. These include at least 3 pre-1870 county seat plats.

The 1848 plat for Smithville (Table 1) shows a simple Block Square plan of 42 blocks in a 6 by 7 block arrangement. The sketch is very crude and dimensional notations imprecise. The overall area covered is stated to be 50 acres and the blocks are somewhere around 160 feet

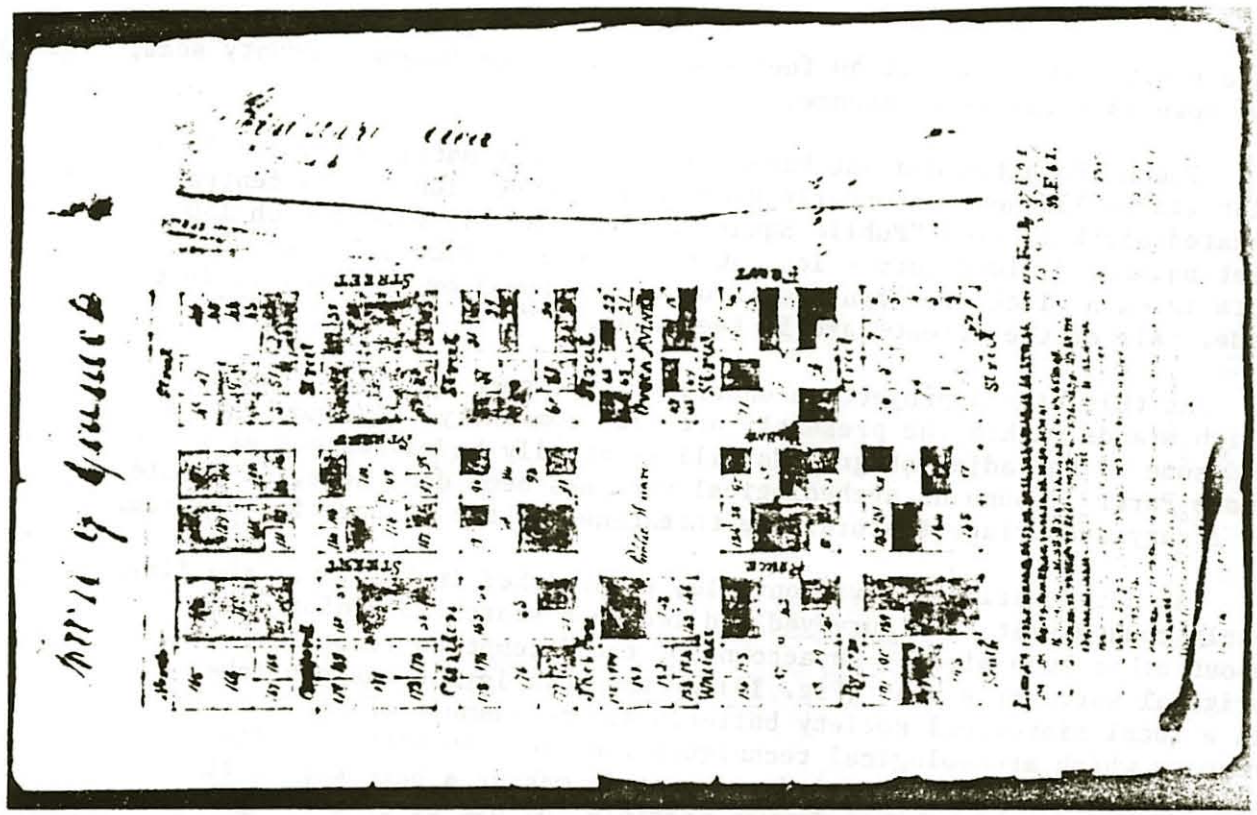

Figure 7. Plat of the Town of Greenock, 1827, Record Book A, Crittenden Co.

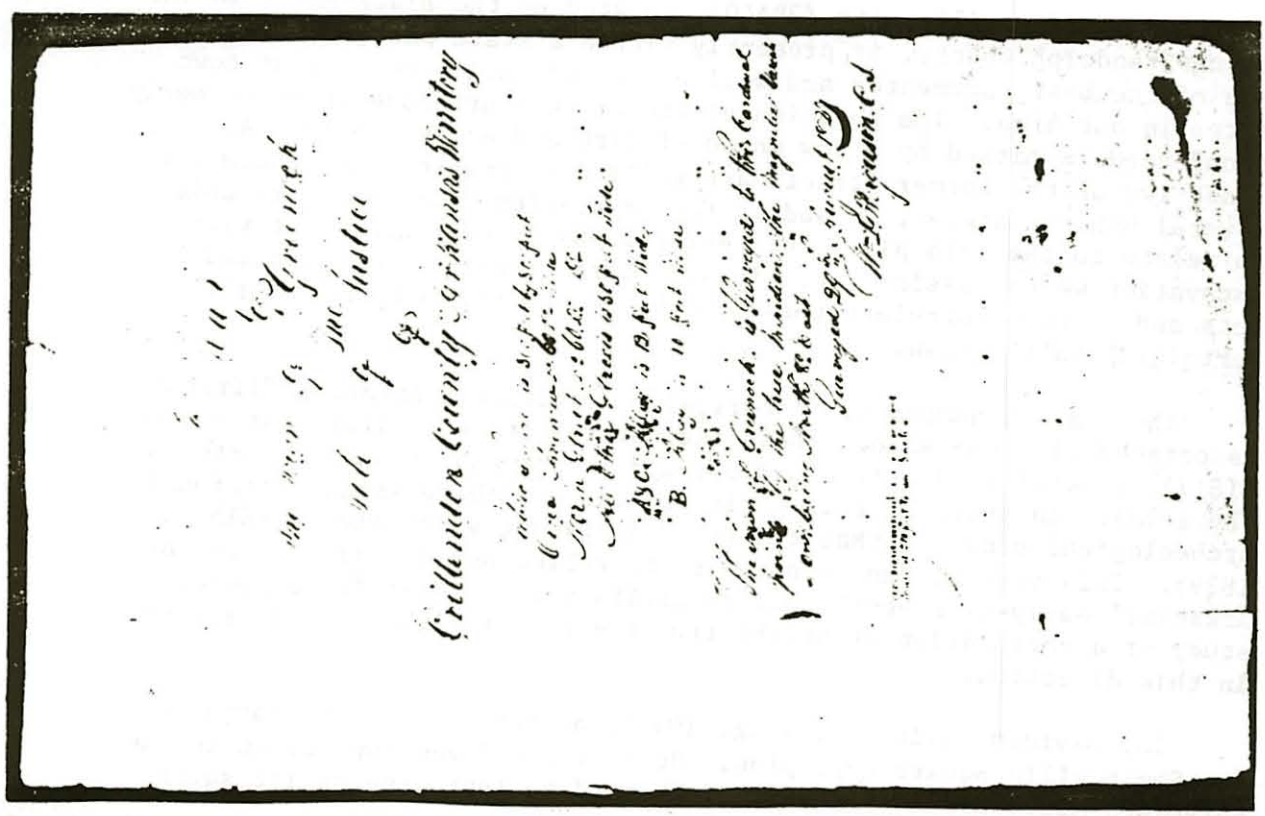

Figure 8. Front Side of the Greenock Plat Shown in Figure 7.

square with streets about 50 feet wide. Though no longer a county seat, the town is still in existence.

Though Powhatan did not become a county seat until 1869, the 1849 plat (Table 1) shows an orderly Block Square type plan with a centrally located block labeled "Public Square". There are 15 blocks each 150 feet square, divided into 6 lots 50 by 70 feet in size. The top 3 lots in each block are separated from the bottom 3 by an alley 10 feet wide. All of the streets are 50 feet wide.

At this time a project is underway to restore the 1888 courthouse which stands within the presently occupied community. The courthouse and some of the adjacent grounds will eventually be maintained as a State Park. Though no archeological work has been done here, it should be if any subsurface features are threatened by the restoration program.

As noted earlier, Davidsonville, established in 1815, was the first early county seat town surveyed and led to a search for information about other such sites. An account of the attempt to reestablish the original surveyor's plat (Fig. 10) of the town layout was published in a local historical society bulletin as one example of the kind of results which archeological techniques can yield on historic site (Smith 1973). After several days spent in making a base map of the existing surface features, it was possible, by use of an overlay of the plat, to achieve a realignment which seemed surprisingly accurate.

The Davidsonville site (3RA40), located on the Black River in what is now Randolph County, is presently within a state park. It remains one of the best documented and well preserved early county seat town sites in our area. The location of the brick courthouse which formerly stood here is marked by a low mound of dirt and brick rubble. At least two of the former streets are still discernable. And there are several other features, including two cemeteries, which we were able to relate to the 1818 plat. We feel reasonably confident that with excavation we can assign specific structural remains to individual lots and in turn correlate these to the county and federal records pertaining to the town.

There are a number of historically significant Arkansas "firsts" associated with the site. These include the state's first post office (1817), federal land office (1820), and intentionally built courthouse (by 1818). In spite of this early prominence, there is an additional archeological bonus in that the town was rather short lived (1815 to 1829). This presents an opportunity to refine our dating for some of Arkansas' early-nineteenth-century artifacts. A recently completed study of a correlation of bricks from the site (Smith n.d.) is a step in this direction.

The Davidsonville plat (Fig. 10) is another excellent example of the Shelbyville Square type plan. Most of the dimensions given in the surveyors notes are in perches. Converted to feet, the public square

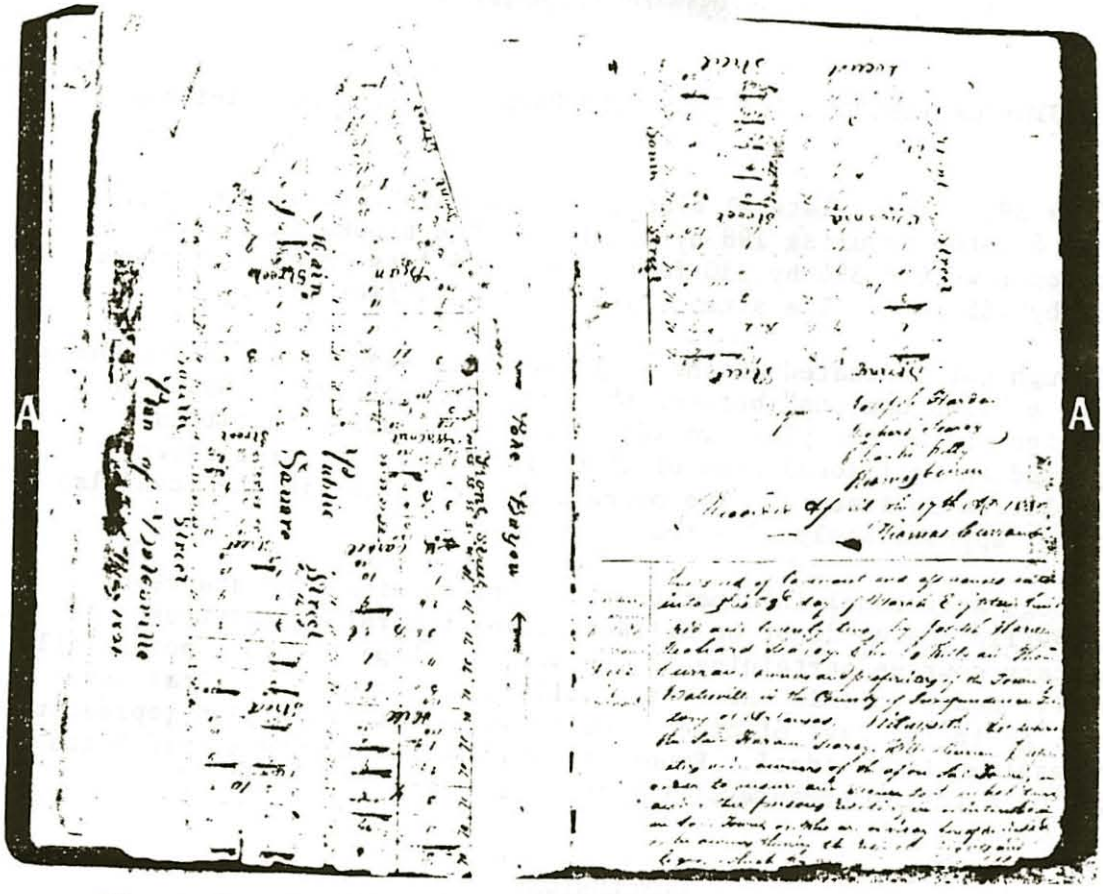

Figure 9, The 1821 plan of Batesville, Deed Book A, Independence County records.

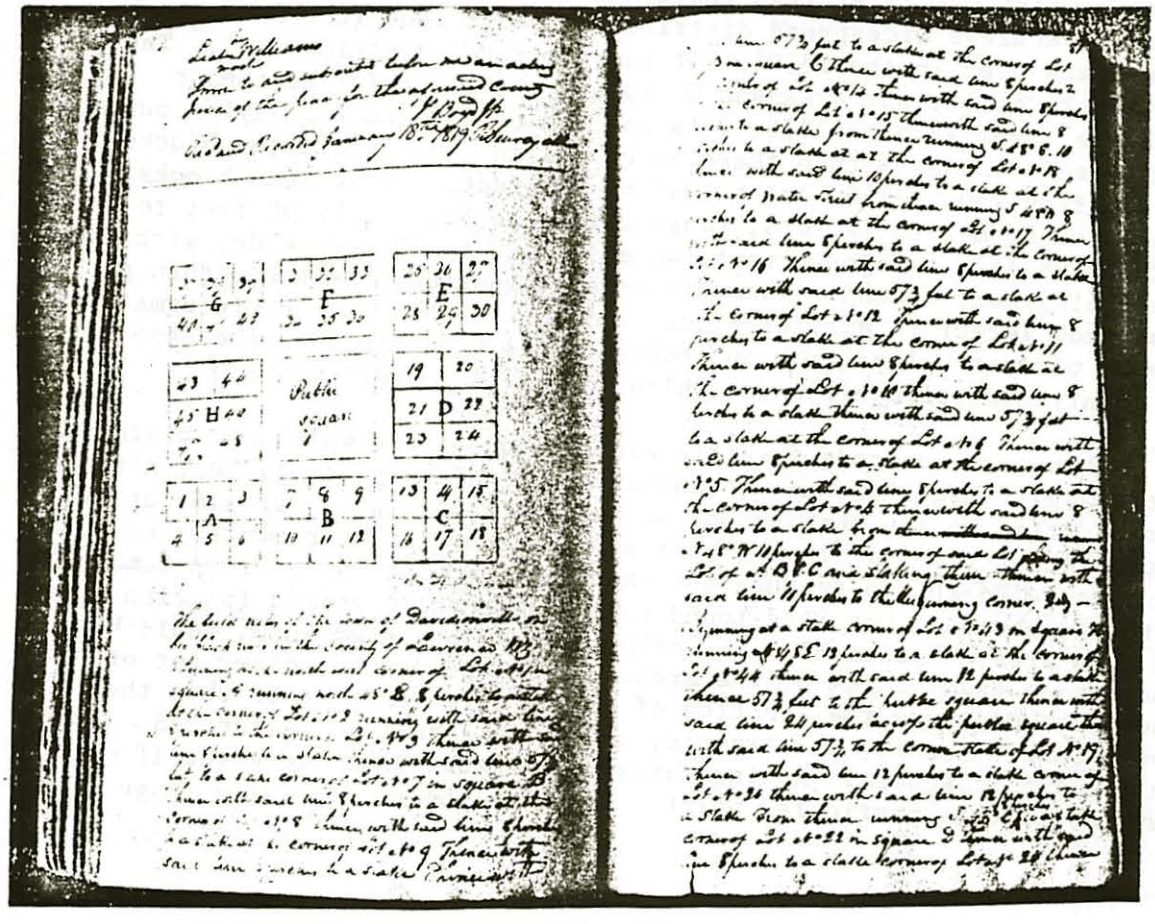

Figure 10. The 1818 plat of Davidsonville, Deed Book B, Lawrence County records.

is 396 by 396. The 2 lateral blocks are also 396 feet square, and each has 6 lots measuring 198 by 132 feet. The blocks in the top and bottom rows are 396 by 330 feet, and the 6 lots in each of these are 132 by 165 feet. The streets are all 57 3/4 feet wide.

Though not indicated on the plat there are several documents which refer to a "Town Commons" between the town and the river. Based on our realignment of the plat, we were able to calculate that this encompassed an additional area of about 12 acres. The area covered by the plat is 35.1 acres. The overall area involved in the town plan was, thus, approximately 47 acres.

Though additional information about the physical appearance of Davidsonville can no doubt be extracted from the rather numerous documentary sources pertaining to the site, perhaps the most potentially productive means to this end is the utilization of archeological techniques. As in the case of other similar sites, the town plan represents an expression of the ideal. Proper excavation techniques should begin to give us a better picture of the real.

CONCLUSIONS

Price (1968: 49-51) has suggested that the Shelbyville (Block) Square, which was later than the Lancaster of Harrisonburg types, began to achieve widespread distribution about 1806 (the Four-Block Square was used in the 1830's but had a limited distribution). This seems born out by our Arkansas examples. At least for northeast Arkansas, from 1815 to 1870, this was the usual form for laying out a county seat town. Within these Block Square towns the major blocks ranged from 150 by 150 feet to 396 by 396 feet. These same blocks contained from 6 to 12 lots, ranging in size from 60 by 90 feet to 132 by 198 feet. Major streets were from 30 to 60 feet wide, with 50 feet being most common. There is some suggestion of a trend through time from larger to smaller blocks and lots. This sort of information may be of most value, from an archeological viewpoint, in the case of county seat town sites for which a plat no longer exists.

There are numerous specific kinds of questions which the historical archeologist might attempt to answer on these early county seat sites (in addition to the obvious one of who built what on a certain lot at a particular time? . In the case of Davidsonville, documentary sources have revealed that a feature not shown on the plat was a "Town Commons". Nothing, however, has been found to indicate the *specific* function of this area. Presumably, the only way we might ever know, would be through an examination of the archeological record. Another set of questions concerns the location of public structures other than the courthouse. Was it, for example, usual for a jail to be located on the public square? Again, early documents seem to be vague if not mute about this particular point. Finally, there are a wide range of

questions we would like to ask about that structure which symbolized so much for the early settler and has carried through as the physical embodiment for many of our own present-day social institutions. At least for Arkansas, little written information remains about the appearance of early-nineteenth-century courthouses. The amount of archeological information available, however, should be considerable.

There are several reasons why extinct county seats should be particularly revealing archeological sites. First, because of their centrality and prominence during a particular era, they should be unusually good repositories for contemporary artifacts. Secondly, county seats bear a similarity in design that will perhaps allow for reasonable reconstructions and an understanding of settlement development. Thirdly, being in some instances the only planned towns for miles around, county seats are the locations at which the most intense expression of the social institutions important to the people of rural pioneer America should be reflected in the relict cultural landscape.

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CERAMICS IN ST. MARY'S COUNTY, MARYLAND DURING THE 1840'S: A SOCIOECONOMIC STUDY*

Lynne L. Herman, John O. Sands and Daniel Schecter

Introduction

For some six decades following its founding by Leonard Calvert in 1634, St. Mary's City flourished as the capital of the Province of Maryland. The end of proprietary government in 1689 caused, by 1695, the removal of the capital to Annapolis, and in 1708 the St. Mary's County Seat was moved to nearby Leonardtown. Its political, social, and economic functions gone, St. Mary's City became a primarily agricultural community, as it remains today. During the summers of 1971 and 1972, as part of its ongoing research program, the St. Mary's City Commission conducted excavations at a house site located on a parcel of land known in the 17th century as Pope's Freehold. Excavations revealed not the remains of a 17th-century structure, but those of a much later dwelling. Designated the Moses Tabbs house, for the Anglican rector who was one of its earliest occupants, it had been built some time after 1746 and was occupied until about 1850. After Tabbs's death in 1779 the house was leased to a succession of tenant farmers.

Ceramics recovered from the Tabbs house excavation are almost exclusively of the 19th century, and therefore correspond to its period of tenant occupation. It has been suggested that the small number of matching vessels indicates that the tenants of the Tabbs house purchased their tablewares one or two pieces at a time, as the need arose (Miller 1974:1). In order to determine how characteristic such a practice was, this study of ceramic consumption patterns using selected St. Mary's County probate records has been undertaken. In addition to providing data on the historical context of the archaeological evidence, particular attention is paid to the methodology of inventory research.

Most St. Mary's County public records for the 19th century, including inventories, accounts of estate sales, census records and tax documents, are surprisingly complete (Radoff 1963:Vol II, 157). Ideally, the study would include all available archival material from the period 1800-1850, as these are the approximate dates of the

*The authors gratefully acknowledge the assistance and guidance of Garry Wheeler Stone and George L. Miller of the St. Mary's City Commission, and the critical comments of Wilcomb E. Washburn of the Smithsonian Institution, Arnold R. Pilling of Wayne State University, and John J. McCusker of the University of Maryland.

excavated ceramics. Since, however, this inquiry was to be of an exploratory rather than a definitive nature, and because the records are most complete for 1840-1850, a decision was made to focus on that period. No attempt is made at a diachronic analysis. Instead, it is our purpose to describe patterns of ceramic consumption among various socioeconomic groups in St. Mary's County, Maryland during the 1840's.

Sources

United States Census of 1840

The United States Census of 1840 was employed to define a study group of known local inhabitants (U.S. National Archives 1840). Divided into states, counties, and election districts, the census provides several different kinds of demographic information, all of which were utilized in selecting the group. Heads of household are listed by name within each election district, followed by a listing of the number of white, free black and slave inhabitants of that household, broken down by age group. Also given are the number of persons within the household involved in each of several occupations, principally agriculture, industry and commerce, and navigation, both coastal and oceanic. Finally, there are notations for the presence of idiots, illiterates, and school groups under the control of the head of the household. In the first election district, comprising St. Mary's City and its environs, 134 households are listed, with a total population of 1,691 persons. The second election district, the Valley Lee area, lists 343 households and 2,921 persons.

1838 Tax List

When the annual property tax was levied in 1838, a list, which survives, was made of personal property owned by residents of the county. Again, it is divided by election district, and provides the name of the taxable party, the properties which he owned, the acreage and value of the land, the value of any improvements on the land, the number and value of slaves owned, the value of any plate owned, a miscellaneous category, and the total value of the estate. Based on a comparison of inventory and assessed value of slaves, the tax assessments appear to be low, perhaps by a multiple of 1/5 or 1/6. Since the valuations are consistently low, the figures remain useful for relative comparisons within the group, if not for absolute determinations in real terms.

Records of the Orphan's Court

In conjunction with the settlement of the estates of decedents in St. Mary's County, a number of different types of records were generated.

Two of these are of particular use to those interested in the study of the material culture of the area. Both the inventories and the accounts of estate sales include relatively detailed listings of the personal property of the decedent, and survive from 1799 in the case of inventories and 1827 in the case of the accounts of estate sales.

In 1798, the General Assembly of Maryland passed an extremely detailed and lengthy act, entitled "An Act for amending, and reducing into system, the laws and regulations concerning last wills and testaments, the duties of executors, administrators and guardians, and the rights of orphans and other representatives of deceased persons" (Dorsey 1840: Vol. 1, 370-416). Although this paper is not concerned with the mechanics of probate settlements, there are several sections of the act which are pertinent to the present study, as follows:

> Chapter VI, Section 1 - In every case wherein letters testamentary, or of administration, or of collection, are granted, in order that all persons interested in the personal estate may have an opportunity of knowing, as nearly as may be, the amount of the same, an inventory, in case the estate lies in one county, or can conveniently be collected together, or inventories, in case the property lies in more than one county, or cannot conveniently be collected together, shall be returned to the office granting the administration.
>
> Chapter VII - Leases for years, estate for the life of another person or persons, except those granted to the deceased and his heirs only, and all goods, wares, merchandise, utensils, furniture, negroes, cattle, stock, provisions, tobacco, and every kind of produce, the crop on the land of the deceased by him or her begun, unless where the lands are divided, things annexed to the free-hold or building, which may be removed without prejudice to the building, clothing, ornaments, and every other species of personal property, (except those things which are denominated heir-looms, and the clothes of a widow, and ornaments and jewels proper for her station, and the clothing of the family) shall be included in an inventory to be taken and returned as aforesaid, and shall be considered as assets in the hands of an executor or administrator.
>
> Chapter VII, Section 3 - In case any executor or administrator shall not have money sufficient to discharge the just debts of, and claims against, the deceased, the orphans court granting the letters shall, on his application, made after the return of an inventory, direct a sale of the whole property therein contained, or of such part, or to such amount, as the court may think proper...
>
> Chapter VII, Section 4 - The said court shall have power to direct a sale as aforesaid, in case it shall deem a sale ad-

vantageous for the persons interested in the administration, either ex officio, or on application of any of the said persons.

Obviously, there are several inherent biases which must be considered when using inventories and estate sales as evidence of material culture. As indicated in Chapter VI, Section 1, only those estates in which letters of administration or of collection, or letters testamentary were granted had to be inventoried. In other words, only those which underwent the formal procedure of probate were recorded; because of the expense involved in undergoing probate proceedings, there was a built-in bias against the poorer segment of the population appearing in these records. *Further, those estates which were recorded may not be represented by a complete series of records. Although the law specifies that an inventory was to be taken before an estate could be sold, and though the inventory values of the property sold appear in the Account of Sales book, most of these inventories do not survive. Despite the fact that they would provide duplicate information in this instance, one is forced to speculate on the possibility that other inventories may have been excluded or discarded at some point in time, thus providing a less complete record. Even within those households which were inventoried, there is no guarantee of complete recording, particularly in cases of joint ownership, as with a spouse. An additional oft-cited weakness of inventories concerns old age; older persons are more likely to die, often have curtailed purchasing power, and their possessions are not liable to be reflective of recent stylistic changes. A final drawback of probate records is that they were made for a specific purpose, and that purpose was not the preservation of data for future generations. Thus, although surprisingly complete, the information given is never definitive and is often distressingly vague, as in those instances where all of the ceramics and glass are lumped together and given one valuation. Happily, this is a relatively rare occurence in these records. While inventories and estate sales may be used as evidence of the minimal material culture of an area, they should not be considered as all-inclusive. It may be said with some certainty, however, that at least these goods were present.

The Study Group

Since the natural focus of interest for the project was the First

*As an example, the cost of issuing a letter of testament during this period was $3.50 (Dorsey 1838:155). In addition, a recent study of tomb-stone records has shown that of 83 males of majority who died during the 1840's in St. Mary's County, only 30 were inventoried. Those excluded from the inventory process were generally from the poorer segment of the population (Alan D. Hugley, a study in progress, St. Mary's City Commission 1974).

Election District, due to the location of the Tabbs House archaeological site in that area, all 134 households of that district, as listed in the 1840 U. S. Census, were examined. It became apparent, however, that this group was strongly biased towards large slaveholders, who were presumed to have been relatively wealthy. A lack of persons from the lower economic classes would have amplified a major problem already inherent in the use of inventories, a bias against poor people. The inclusion of poor persons was especially important because the Moses Tabbs House was occupied by a tenant farmer during the period when the bulk of the recovered artifacts was deposited. In an effort to eliminate this bias, the Second Election District, Valley Lee, was added because of its proximity, its predominantly agricultural nature, and the likelihood of its having similar trade patterns. Rather than include the entire population, and thus run the risk of once again introducing a bias, it was decided to utilize only non-slaveholders and free blacks on the assumption that they were less well-to-do. This had the dual effect of compensating for the lack of poor people in District 1 and, to some extent, overcoming the prejudices of the inventory system. In addition to having a larger and poorer overall population, District 2 was found to have a very much larger population of non-slaveholders and free blacks, totalling 176 households. Although economic data was available for the entire household in most of these 310 cases, only the name of the head of the household was known. Thus, only those persons who were heads of household in 1840 could be included in the inventory study. In a sense, this was an advantage, as the possessions of these persons were most likely to represent those of the entire household. When these 310 persons were checked against the inventory records and accounts of estate sales for the period 1841-1851, 44 were found to have died and been recorded with sufficient completeness to be of use in the study. These 44 inventories formed the basic analytical group, hereafter referred to as Group A. Relatively complete information was available for the households in Group A, not only concerning material goods, but also quantity and value of land, number and value of slaves, size and occupation of the household, and total value of the estate.

A second group of 56 inventories, Group B, was chosen from the entire county to provide a broader basis for comparison. They were taken from the volume of St. Mary's County Inventories, 1841-1845, and include inventories which date between December 16, 1840 and April 11, 1845. Chosen as they were, they represent a cross section of the population, as screened by the probate procedure, and therefore presumably suffer from all the biases for which correction was made in Group A. Since these inventories were to serve solely as a control group, no attempt was made to correct for this bias; the demographic information gathered for Group A was not gathered in this case.

Although Group A had been adjusted by the addition of a large block of people from a lower economic level, a great many of whom were free blacks, there was a distinct lack of free black inventories. The only

free black encountered was James Lawder, a resident of District 2, inventoried on June 1, 1844, who owned only "one horse cart - $10.00" (Maryland Hall of Records 1841:104). The reason for the exclusion of free blacks from the inventory records is not known, though there are some possibilities. The presence of Lawder's inventory indicates that free blacks were not separately recorded, and that the poverty of an individual was not the basis for exclusion. Probate, however, was an expensive process, and may have been avoided when possible by persons of limited means. Whereas a search of the laws has revealed no specific injunction against the probating of free blacks, there were indications of a racially discriminatory system. Among the laws passed in 1817 was "An Act for the better protection of Slaveholders in the several Counties therein mentioned," which included St. Mary's County. One of the provisions of the act, concerning trade with free blacks, specified "That any person who shall after the first of May next, in the counties aforesaid, receive from any negro or mulatto any goods, chattels or personal property, shall be considered as dealing with such negro or mulatto, and subject to the like pains and penalties" (Dorsey 1840: Vol. II, 1369). Should any free black desire to carry on trade with a white, it was necessary that he be granted an annual permit to do so. This act was intended to prevent the theft of goods by making their resale difficult or impossible. The exclusion of free blacks from trade serves as evidence of a dual economic system, divided along the lines of color, operating in St. Mary's County in the 1840's. In light of this dichotomy, the omission of blacks from the probate process may represent an unconscious selection of State and County officials rather than a legal or practical one.

Economic Profile

It was decided that a check should be made to determine the extent to which Groups A and B were reflective of the economic structure of Districts 1 and 2. Therefore, a profile of these two districts was generated using the data available in the 1838 Tax List. Breaking down the population by economic status, as indicated by the total value of each estate, the percentage of the area's households which fell into arbitrary $200.00 increments was determined. The total estate values of the 504 households in Districts 1 and 2 are compared to the 44 of Group A and the 56 of Group B in Table 1.* Reference to this table shows that the bias of the inventory system against the poorer levels of society has been corrected for as successfully as may be expected with samples of this size. The surplus of persons in the $2401-3000 range apparently results from our assumption that slaveholders were more wealthy than non-slaveholders, and our consequent emphasis

*Tax data was not available for 9 members of Group A and 21 of Group B, but a rough estimate of their total estate values was computed from their inventory values, by correcting for the generally lower value of the tax assessment.

TABLE 1

TOTAL ESTATE VALUE, DISTRICTS 1 and 2 vs.
TOTAL ESTATE VALUE, GROUP A and GROUP B

Total Estate Value in Dollars	Districts 1 & 2 504 households	Group A 44 households	Group B 56 households
$0 - $200	37.1%	31.8%	39.3%
201-400	19.0	22.7	17.8
401-600	10.5	6.8	8.9
601-800	6.2		5.4
801-100	3.8	4.6	3.6
1001-1200	5.2	4.6	5.4
1201-1400	2.4	2.3	1.8
1401-1600	2.4	4.6	
1601-1800	1.4	2.3	3.6
1801-2000	1.8	2.3	3.6
2001-2200	.8		1.8
2201-2400	1.2		3.6
2401-2600	1.4	2.3	
2601-2800	.8	6.8	
2801-3000	1.0	4.6	
2001-3200	.4		
3201-3400	.6		
3401-3600	.2		
3601-3800	.2		
3801-4000	.4		
4001-4200	.8	2.3	
4201-4400	.2		
4401-4600	.4	2.3	
4601-4800	.2		1.8
4801-5200	0		
5201-5400	.2		
5401-5600	0		
5601-5800	.2		
5801-6000	0		
6001-6200	.2		
6201-6400	.2		
6401-6600	.2		1.8
6601-6800	0		
6801-7000	.2		
7001-7200	0		
7201-7400	.2		
7401-8800	0		
8801-9000	.2		
9001-9200	0		
9201-9400	.2		1.8
+ 20,000	.2		

on the latter. Although this is in some senses true, it is less the case than had been anticipated, as reference to Appendix C will indicate.

An analysis of each estate's total value of movable goods was made by plotting it against the total estate values for Group A (Figure 1). The value of movable goods was determined by deducting the value of slaves from the total of the inventory. Though this included both household goods and income-producing goods, the figure was judged to be reflective of the material status of the household. When this was plotted against the total estate values as indicated in the 1838 Tax List, it became apparent that beyond approximately $1,500.00 worth of movable goods, the wealth of the owner did not appreciably affect the quantity of goods. Though there are exceptions, it would seem to be the case than an increase in wealth is not always directly indicative of an increase in movable goods. Apparently, a person can use only a finite quantity of consumer goods efficiently, a fact which casts considerable doubt on those studies which depend solely upon inventory value to reflect overall wealth.

Ceramic Analysis

Each of the 100 inventories included in the study was read for its ceramic content and individual ceramic listings were extracted. These were then divided into five categories: common earthenwares, stonewares, whitewares (including pearlware and ironstone), porcelain, and miscellaneous. In a number of cases it was not possible to make a precise determination of the type of ware from the inventory listing. Unless there was reason to believe that they should be placed in some other category, these items were included with the miscellaneous material. Common usage in the probate records of such vague terms as "set" and "lot" precluded any meaningful analysis of the number of pieces (see Appendix D). For this reason, comparisons of ceramic types were made in terms of dollar value rather than quantity.

The first step taken in the ceramic analysis was to plot the total value of the ceramics aagainst the total value of moveable goods listed in each inventory. In both Groups A and B, the ceramic value was found to be reflective of, if not directly proportional to, the total value of movable goods (Figures 2 and 3). This does not necessarily indicate a simple increase in quantity, but also an increase in quality, since, as might be expected, there seems to have been a greater incidence of the

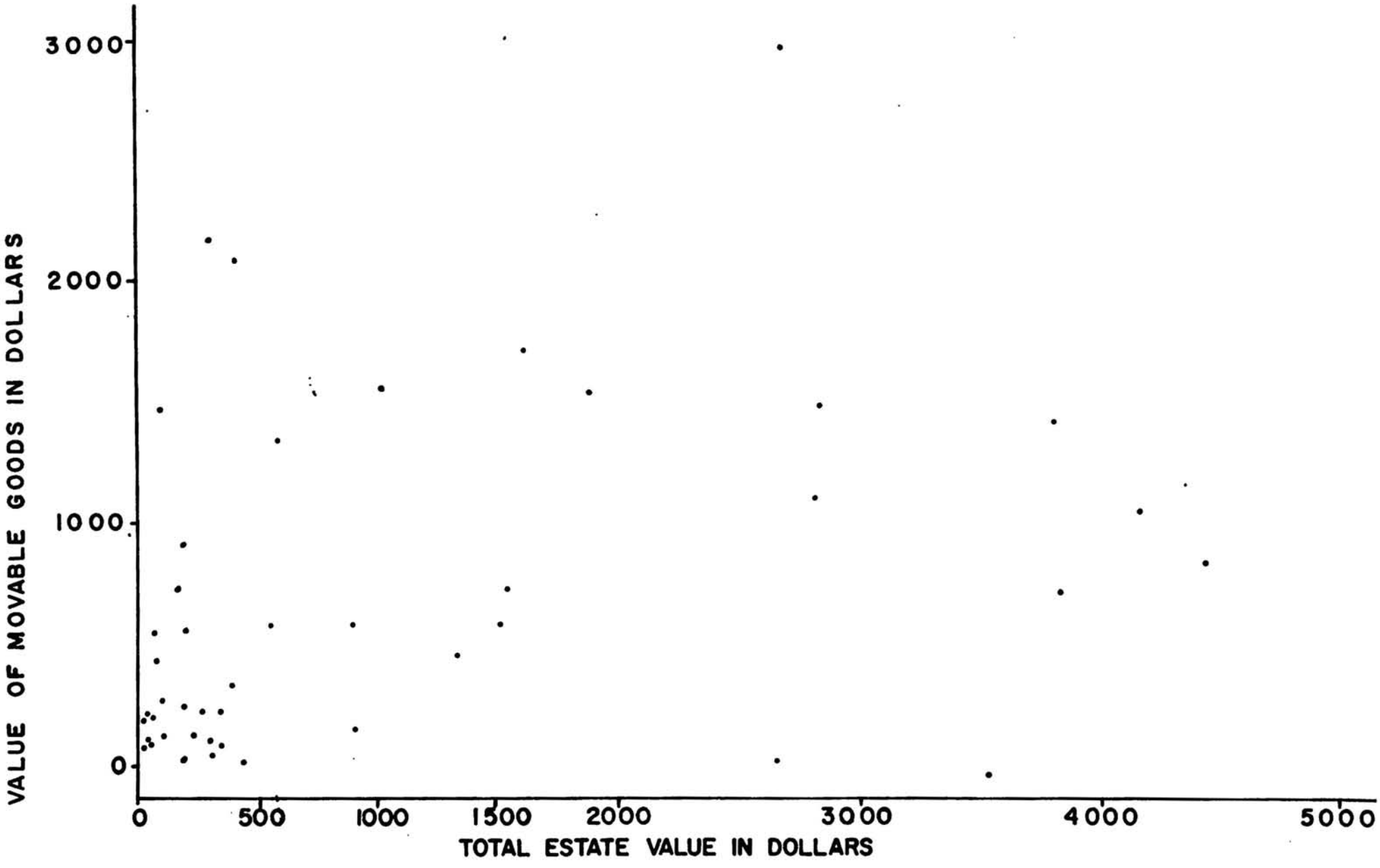

FIGURE 1: VALUE OF MOVABLE GOODS AGAINST TOTAL ESTATE VALUE: GROUP A

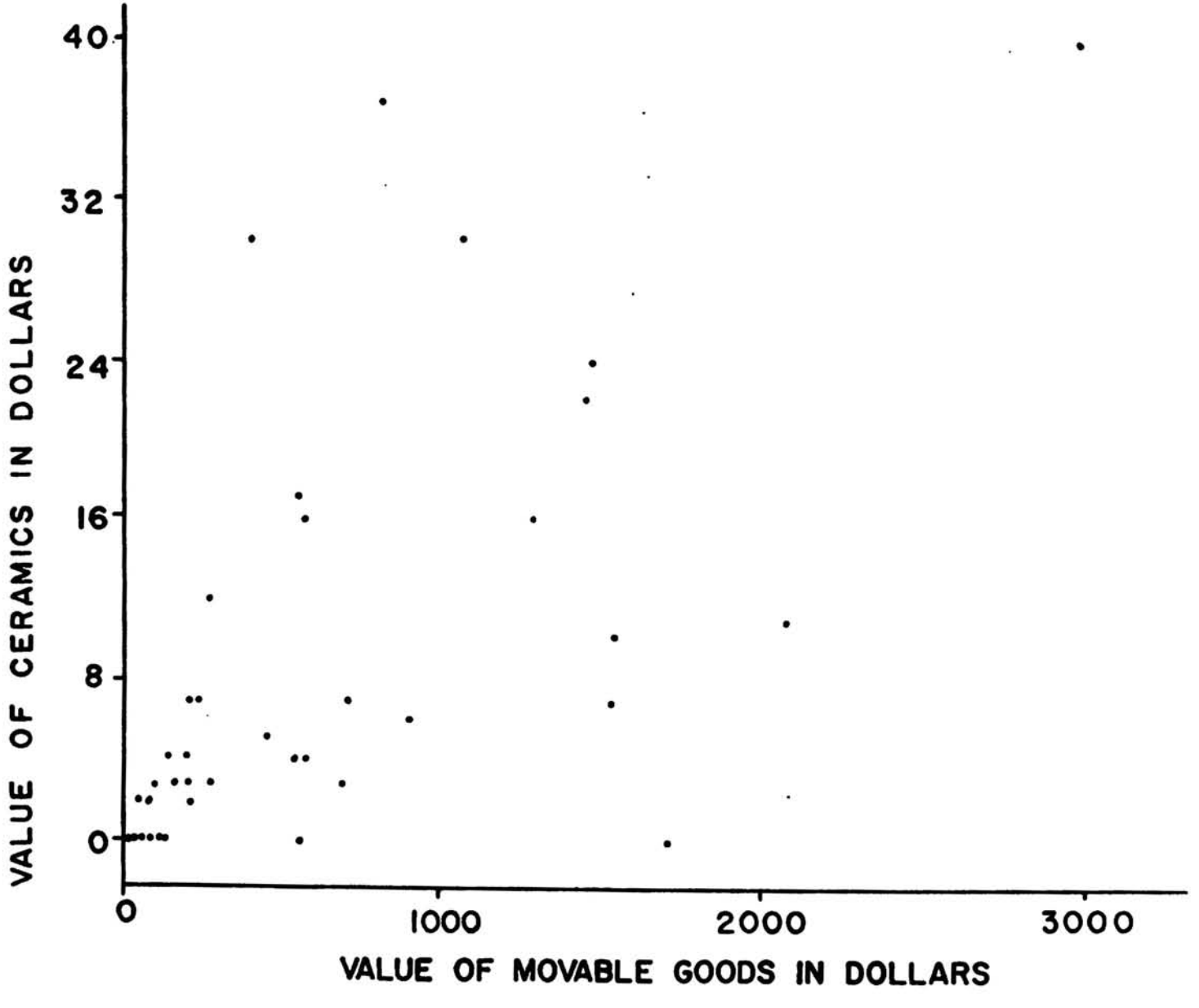

FIGURE 2: TOTAL VALUE OF CERAMICS AGAINST VALUE OF MOVABLE GOODS: GROUP A

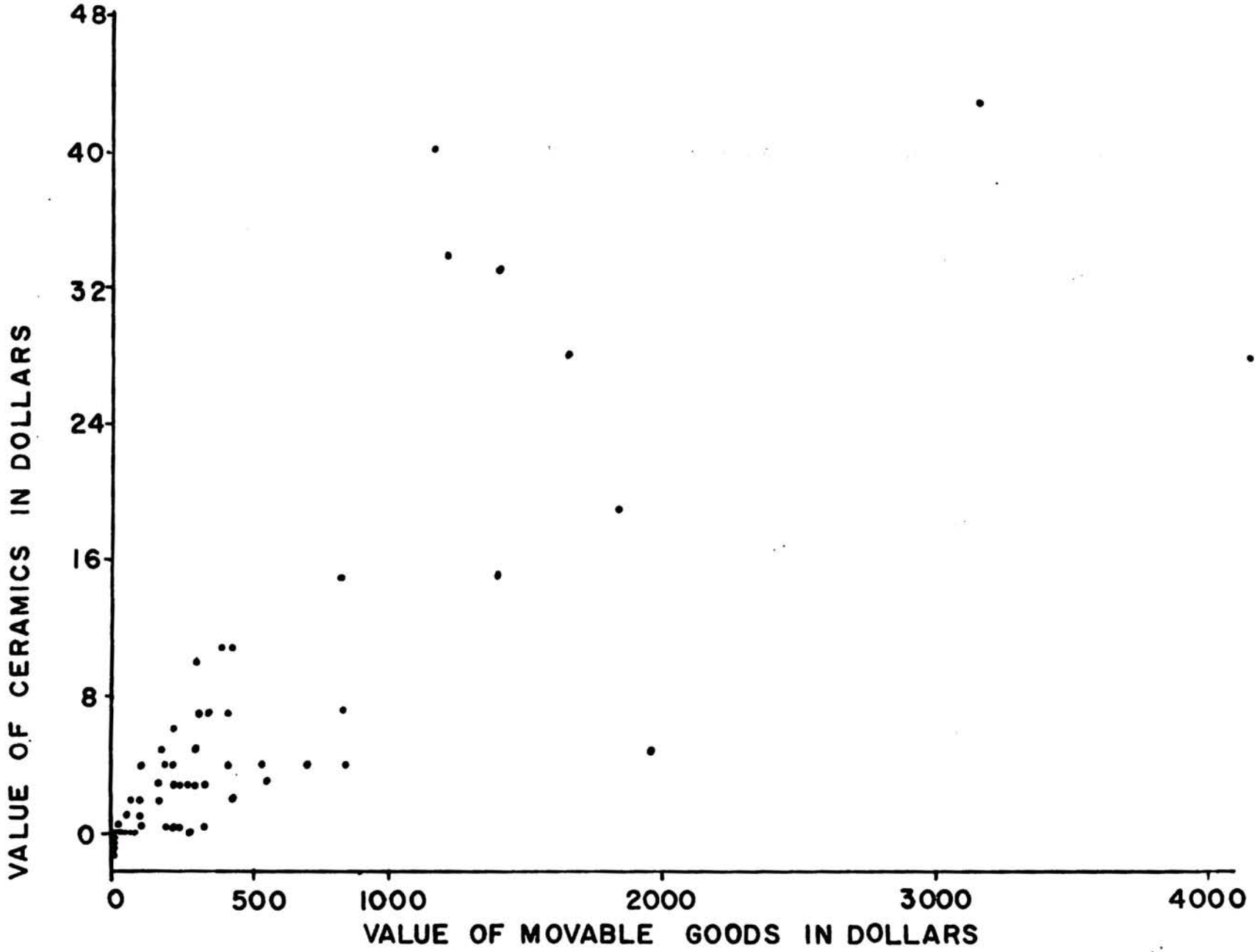

FIGURE 3 : TOTAL VALUE OF CERAMICS AGAINST VALUE OF MOVABLE GOODS : GROUP B

more expensive wares among the wealthy. This tends to confirm an assumption made by many archaeologists that ceramic quality and quantity are indicative of the status of the household. The lack of movable goods valued over $1,500.00 is a function of the saturation point for consumer goods noted earlier.

Each of the ceramic types was plotted against the total ceramic value of the inventory for both Groups A and B. Since the total value of ceramics is generally reflective of total value of movable goods, this makes possible not only value comparisons between the various types of wares, but also determinations of ware preferences at various economic levels. In those cases in which both the inventory and the sale values were available, the inventory value was employed to insure consistency. Those items in which the value was judged to be principally in the contents rather than the container were excluded unless a reasonable figure for the value of the container could be arrived at (see Appendix B). There is, of course, no guarantee that the ceramics listed in an inventory represent all the ceramics owned by a household in fact, it is very probable that the reverse is true in those cases where no ceramics at all are inventoried. One must, however, take the probate records at face value, mindful of the possibility that they may give an incomplete picture of the possessions of an individual at the time of death.

Common Earthenwares

Included in this category were those items described as earthen, red, and coarse dishes, crockery, milk pans and flower pots. The low incidence of common earthenwares which appear in Figure 4 is a reflection not only of their scarcity, but also of their low value. Although it would at first appear that these wares were most commonly used by the lower economic classes, this is not necessarily the case. Persons owning proportionally more of the common earthenwares are located among those who had a generally higher ceramic value. Although one might expect the reverse to be true, since the common earthenwares are often regarded as the "poor man's pots," it would seem, rather, that they were a common denominator, and those who owned large quantities of ceramics also owned larger quantities of the common earthenwares.

Stonewares

Under the stoneware category were included crocks, jugs, jars, and all those wares described as "stone _____," except ironstone, which was included with whitewares. Compared to the common earthenwares, stoneware represents a considerably greater proportion of the total ceramic value (Figure 5). This is due not only to the higher price per piece for stonewares, but also to the larger number of pieces owned. That this should be the case is reasonable since stoneware is more durable

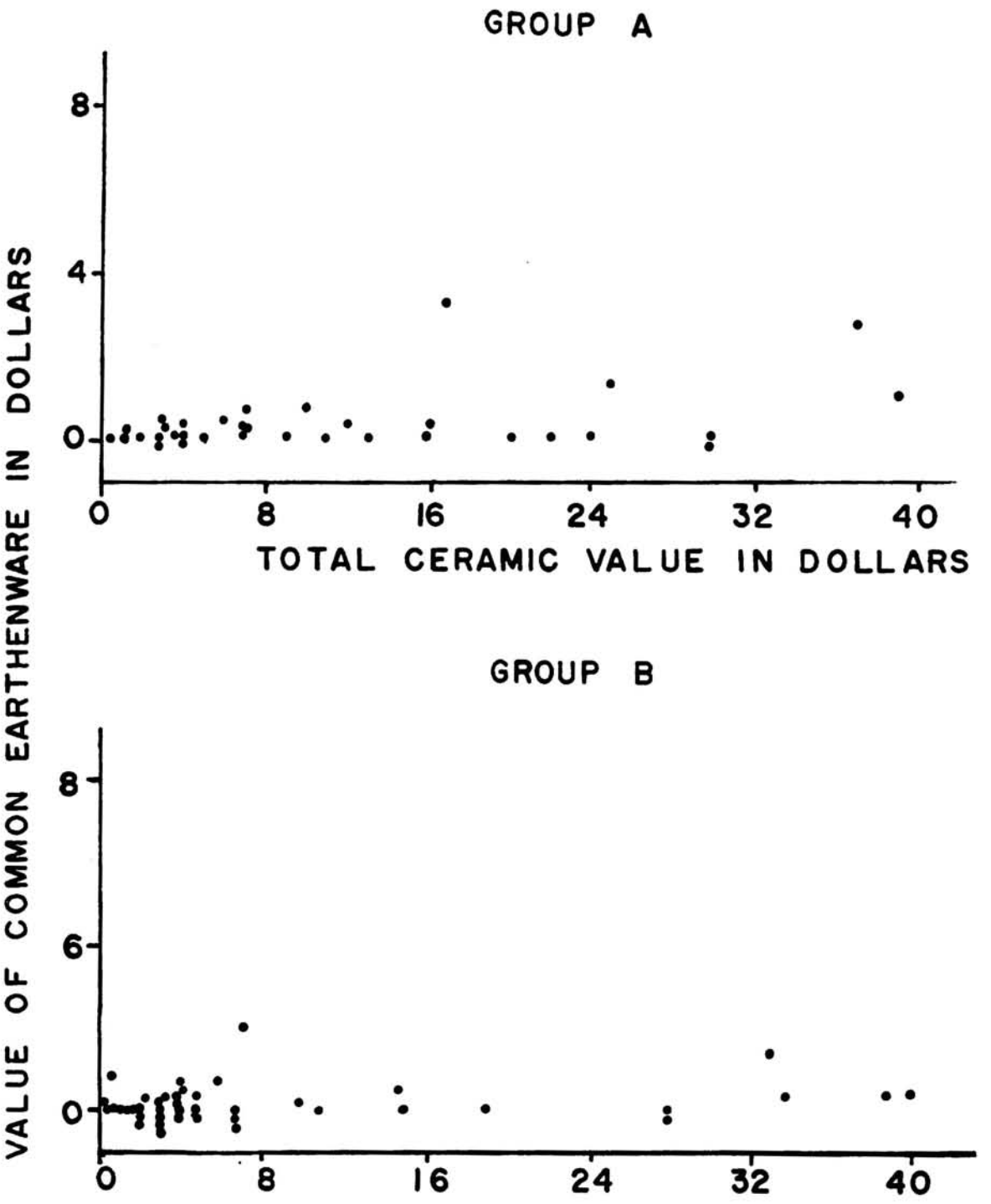

FIGURE 4: CERAMIC ANALYSIS: COMMON EARTHENWARE AGAINST TOTAL CERAMIC VALUE

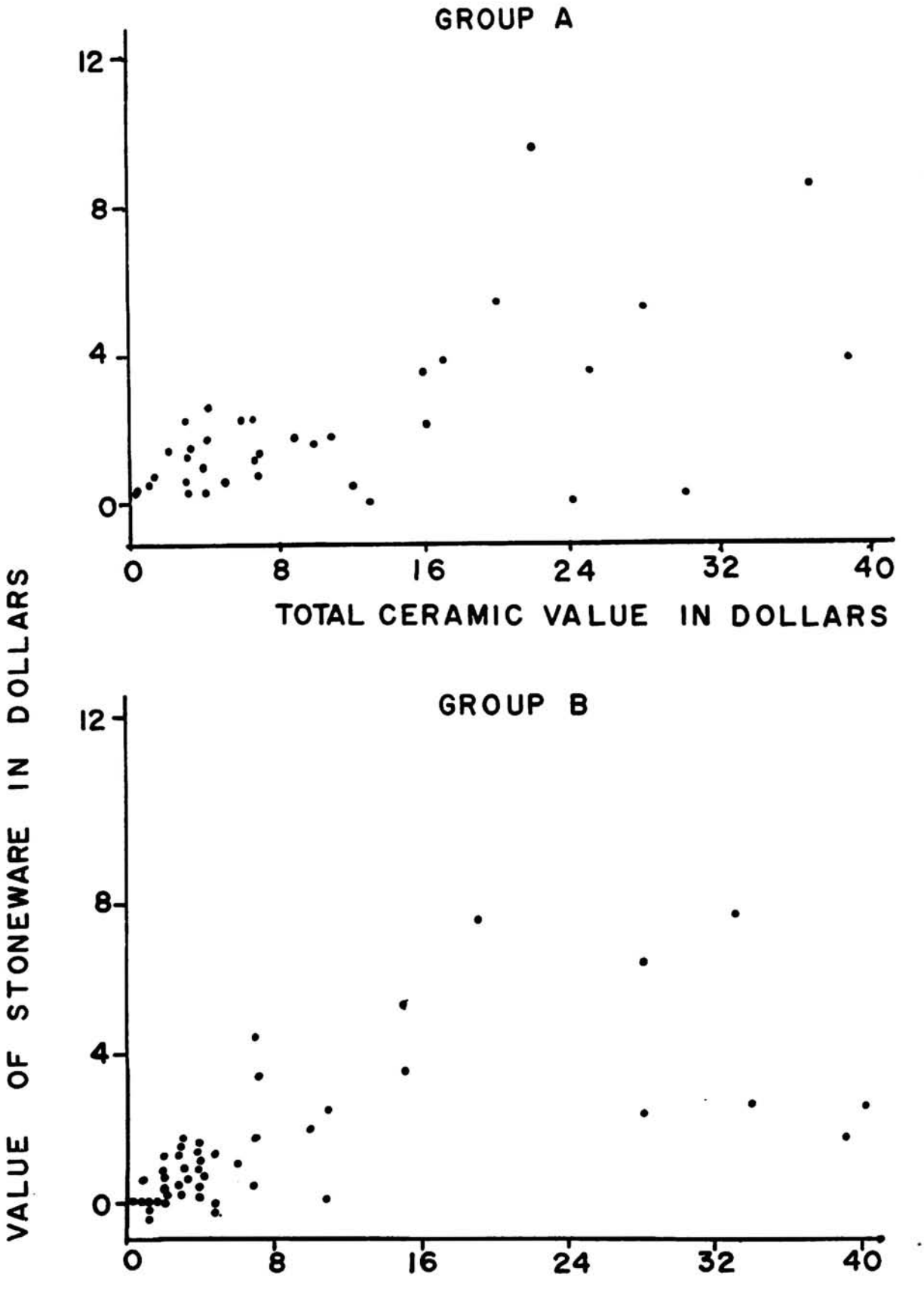

FIGURE 5: CERAMIC ANALYSIS: STONEWARE AGAINST TOTAL CERAMIC VALUE

and less likely to cause lead poisoning than the earthenwares.* Though the value of stoneware holdings is uniformly higher, the proportionally larger individual holdings still occur among those groups with higher total ceramic values. Once again, stoneware seems to have been a common denominator; virtually everyone owned at least some of it, and for most it comprised a large part of their ceramic inventories.

Whitewares

Among the whitewares were included those items specifically described as an identifiable type (such as "blew-edge ware"), tea wares, dinner wares, breakfast wares, sugar and cream bowls, flowered pitchers, and common and stone china. The graph of whiteware value against total ceramic value (Figure 6) reveals a direct correlation between increase in total ceramic value and increase in whiteware value, up to the point where the former reaches $16.00. Beyond that point, however, a dichotomy begins to develop; only a very few persons owned more than $8.00 worth of whiteware. Apparently, this was caused by a shift in taste in the more affluent sector, a shift towards porcelain and away from whiteware. It should be noted that there were few very large sets of whiteware inventoried, though most seems to have been in sets of some sort, generally containing one dozen or fewer pieces. This is discussed more fully in Appendix D.

Porcelain

Included in the porcelain category were all those wares which were described as china, or its orthographic variations. The graph of porcelain value against total ceramic value (Figure 7) prompts two observations. First, most persons owned no porcelains whatsoever, particularly among those estates with lower ceramic values. Second, there is a direct correlation between increase in total ceramic value and increase in porcelain value. Porcelain does not occur with any regularity until the total ceramic value exceeds about $16.00, the point at which the popularity of whitewares begins to wane. This seems to confirm a preference for porcelains among those who have a higher total ceramic value. This may very well be a self-reinforcing situation, since porcelains were considerably more expensive than the whitewares, and therefore tended to create higher total ceramic values. Nevertheless, the preference for porcelains among those of higher economic standing appears to be a valid conclusion to be drawn from these data.

*That there was contemporary awareness of the danger of lead poisoning is indicated by the article in the February 4, 1785, Pennsylvania Mercury as quoted in Alfred Coxe Prime, The Arts & Crafts in Philadelphia, Maryland and South Carolina, 1929.

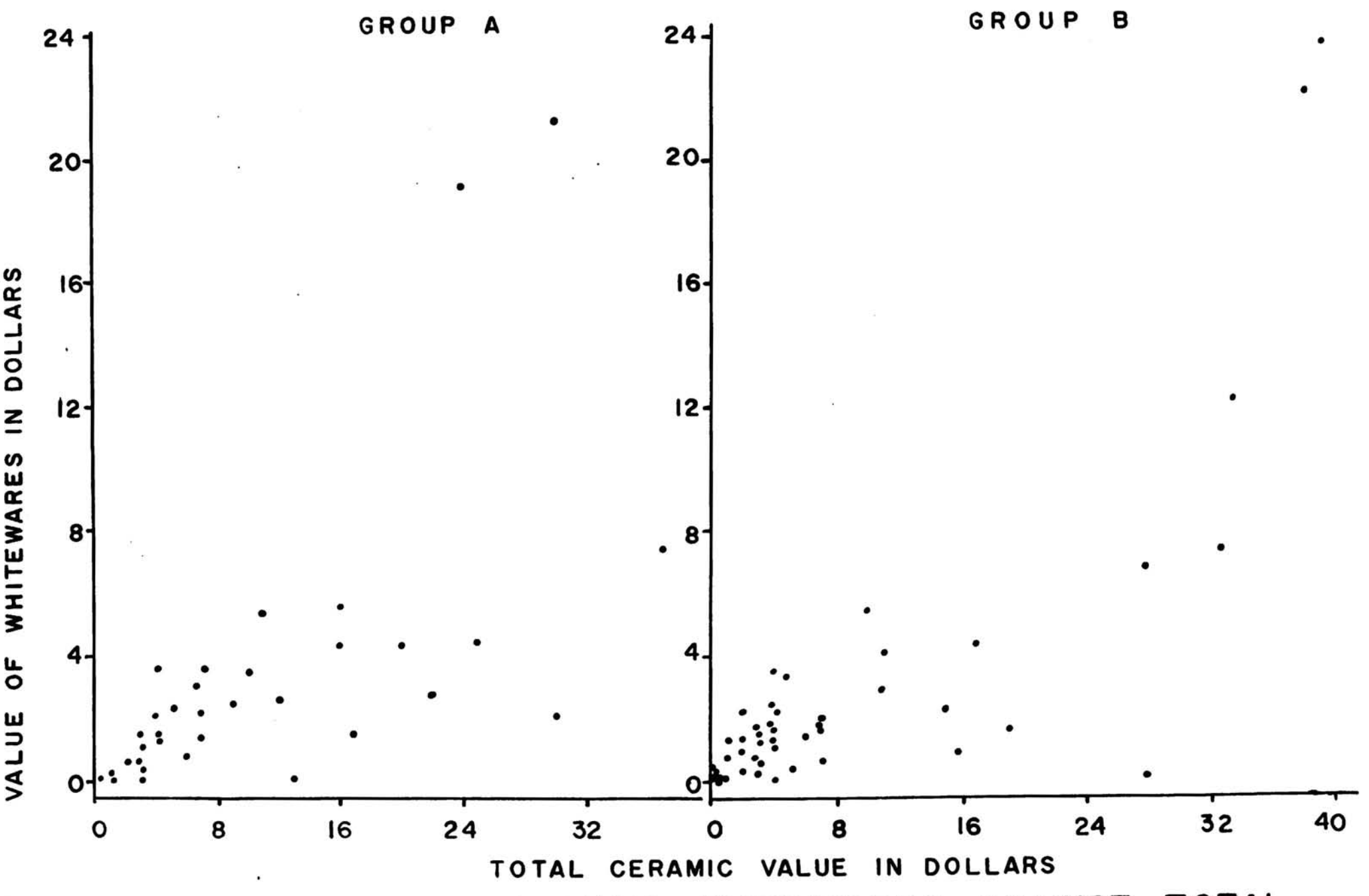

FIGURE 6: CERAMIC ANALYSIS: WHITEWARES AGAINST TOTAL CERAMIC VALUE

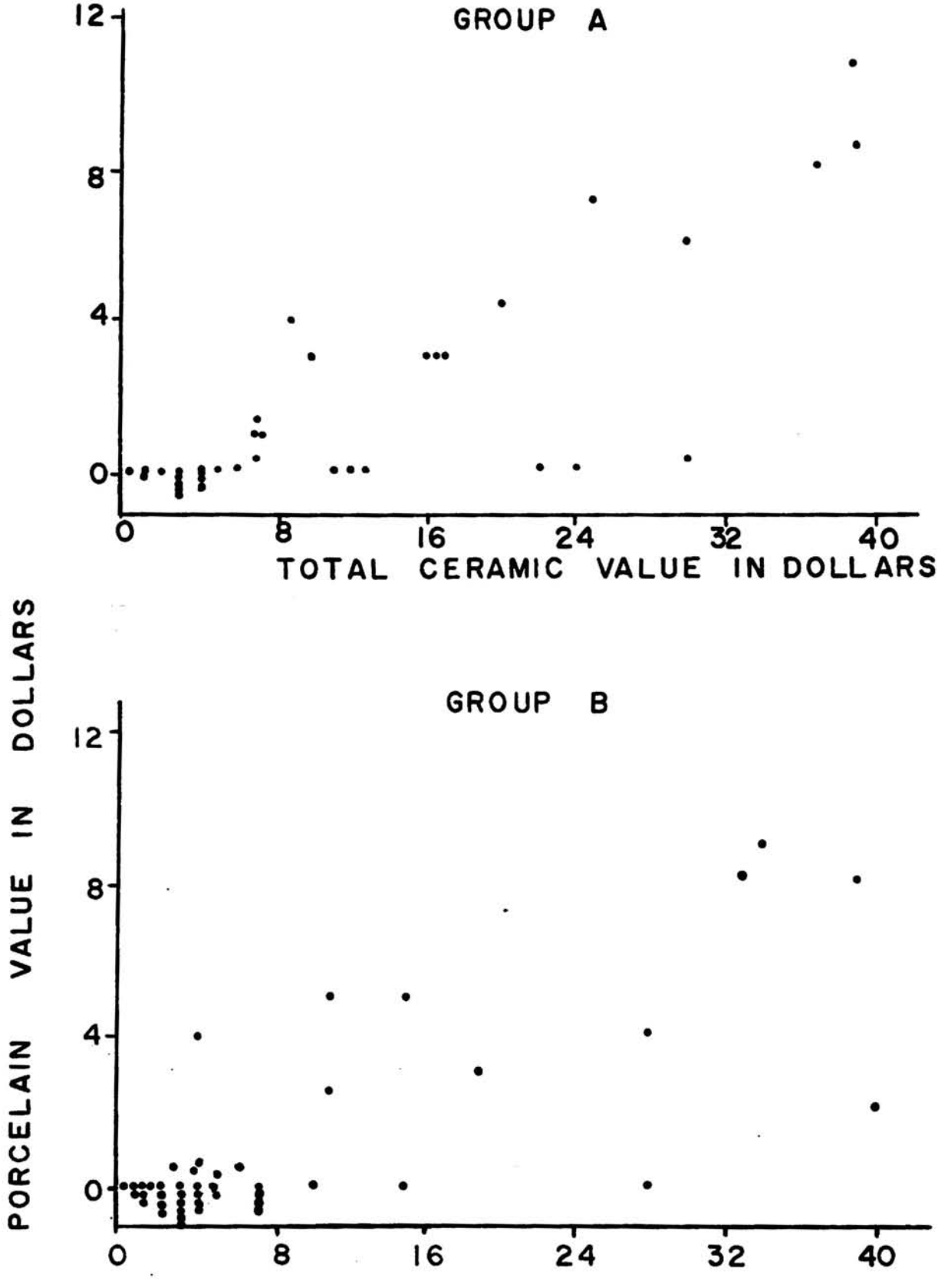

FIGURE 7 : CERAMIC ANALYSIS: PORCELAIN AGAINST TOTAL CERAMIC VALUE

Extant records of the China trade indicate that by 1840 importations of Chinese export porcelain had slowed to a trickle, having been largely supplanted by European, and to a very small degree, American porcelains. Whether the wares represented in this study are of Chinese, European or even American origin is impossible to determine, though the tendency is to identify "china" as of Chinese origin. While this is certainly not invariably true, it seems reasonable to assume that at least some of the Chinese export porcelains had survived to this date. If this was the case, the generally high porcelain value suggests the possibility that the Chinese wares had not lost social standing to the degree which has formerly been indicated (Mudge 1962:123-127).

Miscellaneous

Included in the miscellaneous category were bowls, chamberpots, pitchers, washbowls, dishes, salt cellars, casters, and all the other material which could not be placed in any other grouping. As might be expected from such a sampling of the ceramic spectrum, the value of the miscellaneous ceramics varies directly as the value of the total ceramics. Since this is not particularly enlightening, the graph is omitted from this report.

Conclusion

In this report we have attempted to demonstrate the feasibility of undertaking a study of an area's material culture that includes more than a mere listing of goods gleaned from a series of inventories. The value of constructing an overall economic profile of the area for comparative purposes should now be evident. The use of a combined inventory and economic analysis has led to several observations. First, the absence of slaves does not necessarily indicate the absence of material wealth, at least in St. Mary's County. While it is a fact that non-slaveowners as a group were less wealthy than slaveowners, this was not necessarily true for any given individual. Second, wealth, as determined by the total estate value, was not necessarily directly proportional to the value of a household's movable goods. In fact, in only rare instances did the value of the movable goods exceed $1,500.00, regardless of the value of the total estate.

Ceramic analysis indicates that common earthenwares and stonewares appear at all economic levels. Almost everyone owned at least some, and in many cases they were the predominant wares represented. Among these two types, the stonewares were generally the more popular. A trend was also recognized in the ownership of whitewares and porcelain. With an increase in total ceramic worth of an individual, the incidence of whitewares waned as that of porcelain grew, probably as a result of the latter's greater status and value.

Were this project to be expanded, the sample should probably be chosen using a combination of the two methods of selection used to create Groups A and B. A large group of inventories would be gathered with whatever correlative data was available. The group should then be modified to fit the overall economic profile of the area, which should be constructed to reflect the wealth of a household as adjusted for the number of resident individuals. This would not only have the merits of simplicity, but also would make possible the gathering of more extensive inventory data in less time. Because of the exploratory nature of this study, such a method was not used here. Hopefully, this demonstration of the feasibility of this type of investigation will lead to more fruitful approaches toward future inventory studies, particularly in the data-laden 19th century.

Appendices

Appendix A, Diagnostic Ceramic Types, enumerates some of the ceramic types included under each of the five ceramic categories used: common earthenware, stoneware, whiteware, porcelain and miscellaneous. Under each category, the entry is made by date of inventory. Material following the ceramic example and its value includes the name of the person inventoried and the total value of that inventory.

Appendix B, Ceramic Utilization, lists several examples of the utilization of ceramic items and their values. These are listed by name and date of inventory.

Appendix C, Economic Profile: Districts 1 and 2, St. Mary's County, Maryland (based on the 1838 Tax List), provides a more detailed economic profile of the two districts used in this study. All taxable individuals within each district were divided according to land and slave ownership. They were further subdivided into arbitrary wealth groups, which are presented both as raw numbers and as a percentage of the initial division.

Appendix D, Patterns of Ceramic Consumption, is self-explanatory.

APPENDIX A - DIAGNOSTIC CERAMIC TYPES

Common Earthenware

1841 1 Coarse bole and cup plates - $0 - (Jeremiah Taylor)($1,644.13)
8 Earthen bowls - $ .68 3/4 - (James Rust)($144.42)
1 Lot earthenware - $ .75 - (Bennet S. Tenneson)($238.07 1/2)

1842 3 Old earthen pitchers - $ .18 - (John Milburn)($7,292.00)
3 Small snuff bottles and 1 small earthen bottle - $ .03 - (Peregrine Cissell)($1,367.85 1/4)
1 Lot of old crockery ware - $ .25 - (Mrs. Ann Coad)($12,224.55)

1847 Lot coarse teas and 2 cream cups - $ .25 - (William Bean)($732.79)

1848 2 Milk pans - $ .37 - (John W. Bennett)($1,490.04)

Common Stoneware

1841 1 Stone churn - $ .50 - (William B. Bennett)($11,504.54)

1844 1 Large stone chest - $2.00 - (Ignatius Aud)($765.39 1/4)

Whiteware

Liverpool

1840 5 Liverpool plates - $ .62 1/2 - (Gustavus Brown)($312.36 1/2)
4 Dishes, Liverpool ware - $4.00 - (Jeremiah Alvey)($8,607.93)

1841 4 Liverpool dishes - $4.00 - (Thomas M. Swann)($9,386.20)
6 Liverpool coffee cups and saucers - $ .62 - (Abraham Barnes McClain)($328.87)

1842 1/2 Doz. liver pool plates - $ .37 1/2 - (William Wherritt) ($113.63 1/4)
9 Soup plates (Liverpool Ware) - $ .75 - (Joseph S. Thomas) ($5,268.32 3/4)
2 Pitchers (Liverpool Ware) - $ .75 - ditto

1843 1 Pair large Liverpool dishes - $1.50-(George S. Leigh)($276.35 1/4)
1 Large do. do. - $ .75- ditto
2 Small do. do. - $ .62 1/2 - ditto
1 Lot of Liverpool ware - $ .50 - (Joseph Laurence)($2,738.46)
1 Lot of old do. and tea pot - $ .25 - ditto
1 Liverpool china teapot - $ .50 - (Andrew Greenwell)($101.86)

1845 10 Plates (Liverpool Ware) - $ .37 1/2 - (Benedict Shermantine) ($369.37 1/2)

1847 14 Liverpool plates - $ .50 - (William Bean)($689.35)

1848 1/2 Doz. Liverpool B plates - $ .31 1/4 - (Henry Cheverl) ($197.98 1/2)

Edge Wares

Blue Edge

1841 1 Small blue edged dish - $ .04 - (Elizabeth Hammett)($782.72 3/4)

1842 5 Pickle dishes and 6 cup plates (blue edge) - $ .25 - (Joseph S. Thomas)($5,268.32 3/4)

1843 1 Pair blue edged dishes - $ .25 - (Elizabeth Gough)($2,438.32 1/2)

1845 11 blue edge plates - $ .25 - (Benedict Shermantine)($369.37 1/2)

1848 1 1/4 Doz. blewidge plates - $ .62 1/2 - (Henry Cheverl) ($197.98 1/2)

Green Edge

1841 1 Large green edged dish - $ .20 - (Elizabeth Hammett)($782.72 3/4)

1843 1/2 Doz. green edge plates - $ .20 - (Joseph Laurence)($2,738.46)
1 Lot old do. - $ .25 - ditto
1/2 Doz. green edge dinning plates - $ .18 3/4 - (Elizabeth Gough) ($2,438.32 1/2)
1 Lot of 13 Dinning do. - $ .50 - ditto

1844 3 Green edged soup plates - $ .12 - (John Jarboe)($269.33)

Blue and Red Edge

1846 Common plates blue and red edge - $ .38 - (Charles Nuthall) ($8,259.71)

Unspecified Edge

1844 1 Doz. edge dinner plates - $ .50 - (Peter Gough)($13,348.80)
1 Doz. edge breakfast plates - $ .50 - ditto

1846 1 Small edge dish - $ .20 - (Jonathan Thomas)($302.06 3/4)

1847 12 Edge plates - $ .25 - (William Bean)($689.35)

Other Decorated Wares

1841 1 Doz. Blue print dining plates - $1.00 (William D. Biscoe) ($4,480.35)

1842 1 Doz. blue plates - $ .50 -(Eleanor G. Massey)($4,635.11 1/4)
1/2 Doz. green plates - $ .25 - ditto
7 Large pale blue dishes - $2.50 - ditto

1843 18 Blue print plates - $ .75 - (Robert Bean)($1,183.20)
1 Blue dinner set - $20.00 - (Elizabeth Gough)($2,438.32 1/2)

1844 1/2 Doz. purple plates - $ .25 - (John Jarboe)($269.33)
1 Dinner set blue ware - $4.00 - (Peter Gough)($13,348.80)

1845 11 red plates - $ .50 - (Ignatius Langley)($577.95)
1/2 Doz. red dining plates - $ .50 - (Zachariah Spalding) ($972.07)

Tea Sets, Pitchers, Bowls and Tureens

1839 Set painted teas - $ .31 - (James Rust)($278.23 3/4)
1 Square bowl - $ .12 1/2 - ditto

1840 Set coffee cups and teas - $ .50 - (John Ralph)($220.42)

1841 1 Sett common tea ware and server - $ .75 - (William D. Biscoe) ($4,480.35)
5 White earthen boles - $1.26 - (Elizabeth Bond)($195.07)
1 Black and white earthen bole - $ .25 - ditto

1842 1 Set common tea ware - $ .75 - (Mrs Ann Coad)($12,224.55)
1 Black jug and pitcher - $ .06 1/4 - (Joseph S. Thomas) ($5,268.32 3/4)
2 Painted pitchers - $ .75 - (Eleanor G. Massey)($4,635.11 1/4)
1 Set cups and saucers - $ .75 - (Joshua Graves)($468.90 1/2)
3 White milk bowls - $1.12 1/2 - (Joseph Howard)($69.68 3/4)
2 Butter turins - $1.00 - (James Kirk)($12,041.97)
1 Flowered pitcher - $ .37 1/2 - (John Milburn)($7,292.00)
6 Lip bowls - $1.87 1/2 - (Mathias Beal)($2,080.58)

1843 Keg of Molasses, tea ware - $1.00 - (Edward Fenwick)($207.98 1/2)
1 Old tea set - $1.50 - (Richard R. H. Clarke)($279.81)
Tea and dinner ware - $ .25 - (George Dent)($1,791.84 1/4)
1 Soup tureen (green) - $ .25 - (Elizabeth Gough)($2,438.32 1/2)
2 Old blue pitchers - $ .12 1/2 - ditto

1844 1 Pair lusters - $ .10 - (Peter Gough)($13,348.80)
1 Pair butter boats - $ .50 - ditto
Pair blue and white pitchers - $2.50 - (William H. Ford) ($399.09)
Set (58 pieces) tea ware - $8.00 - ditto
1 Burreen and cover - $6.00 - (John Jarboe)($269.33)
2 Fancy pitchers - $ .50 - ditto

1845 1 Set teaware N. 1 - $8.00 - (Walter Langley)($5,970.40)
1 Ditto Ditto N. 2 - $2.00 - ditto
1 Set cups and saucers - $ .25 - (Benedict Shermantine) ($369.37 1/2)
1 Pair of pitchers Queens Ware - $ .40 - (John F. Simms) ($1,555.99(

1846 2 Blue pitchers - $ .50 - (Jonathan Thomas)($361.62)

1847 1 turene - $0 - (William Bean)($732.79)
1 Large flowered bowl - $ .50 - (Joseph Richardson)($1,055.35)

1848 1 Sett cup and saucers and bowl - $ .38 - (Henry Cheverl) ($197.98 1/2)

1849 Pair slate colour pitchers - $ .50 (George Crane)($1,609.88)
1 Broken set teaware - $ .50 - ditto
1 Pair flower vases - $ .25 - (Mevirel Loker)($9,872.37)
1 Pair preserve dishes and glass stands - $ .25 - ditto

Miscellaneous

1839 6 Flowered plates - $ .37 1/2 - (James Rust)($144.42)

1840 5 dishes, commonware - $2.00 - (Jeremiah Alvey)($8,607.93)

1841 Set plaits 1 Choice - $ .75 - (James Rust)($278.23 3/4)
6 Brown flowered plates - $ .25 - (William B. Bennett)($11,504.54)
1 Set common ware - $ .12 - ditto

1842 1 White chamber pitcher - $ .25 - (Mathias Beal)($2,080.58)
2 Oyster dishes - $ .50 - (Eleanor G. Massey)($4,635.11 1/4)
1 Dinner set - $12.00 - (Mrs. Ann Coad)($12,244.55)

1843 1 Pair white pitchers - $ .75 - (George S. Leigh)($276.35 1/4)
1 Lot of best dinning plates - $ .30 - (Joseph Laurence) ($2,748.36)
13 Dinning plates (injurd) - $ .37 1/2 - (Hesekiah T. Burroughs) ($1,033.52 3/4)
Set common china - $ .62 - (Robert Bean)($1,183.20)

1844 1 White pitcher - $ .25 - (William H. Ford)($399.09)

1845 1 Dining set N. 1 - $5.00 - (Walter Langley)($5,970.40)
1 Ditto Ditto N. 2 - $3.00 ditto

1849 7 Stone china plates - $ .50 - (George Crane)($1,609.88)

1850 1/2 Doz. breakfast plates (spotted) - $ .37 1/2 - (Mary M. Moore) ($3,442.56)

1851 5 Blue stone plates - $ .25 - (James C. Wise)($2,022.72)

Porcelain

1840 1 Set china - $5.00 - (Jeremiah Alvey)($8,607.93)

1841 Broken set tea china - $4.00 - (Thomas M. Swann)($9,386.20)
1 Set chany - $5.00 - (James Bean)($5,116.07)
6 China cups and saucers and flowered cream cup - $ .50 - (Elizabeth Hammett)($782.72 3/4)
1 Sett chiney, including black tin coffee pot and teaboard - $4.00 - (William D. Biscoe)($4,480.35)
1 Set teaware (china) - $4.00 - (William B. Bennett)($11,504.54)

1842 1 Set of tea china - $5.00 - (John Milburn)($7,292.00)
1 Broken Set Do. - $2.00 ditto
1 Lot of China - $8.00 - (James Kirk)($12,041.97)
1 Burnt china teapot - $ .18 3/4 - (Joseph Saxton)($4,280.91 3/4)
1 Set China - $8.00 - (Eleanor G. Massey)($4,635.11 1/4)
10 Blue china tea plates - $ .50 - ditto
6 Do. Do. - $ .50 - ditto
1 Tea set, china - $3.00 - (Samuel Maddox)($5,202.93 3/4)
5 Mantle china ornaments - $1.00 - (Joseph S. Thomas)($5,268.32 3/4)
3 Flour china pots - $3.00 - ditto
1 Set tea china - $2.00 - (Mrs. Ann Coad)($12,224.55)

1843 1 Lot of china ware - $ .50 - (Joseph Lawurence)($2,748.36)
1 Set china tea (gilt) - $8.00 - (Elizabeth Gough)($2,448.32 1/2)
1 Sett of china - $4.00 - (William Carpenter)($1,972.25)
1 Set china and waiter - $3.00 - (Langley Biscoe)($5,818.15)
Set china - $3.00 - (Robert Bean)($1,183.20)

1844 1 Set gilt edged china - $5.00 - (Peter Gough)($13,348.80)
1 Set China - $2.00 - ditto
1 Set do. - $1.00 - ditto

1845 1 Set red china - $ .50 - (Zachariah Spalding)($972.07)

1847 1 Set chaney - $1.00 - (Miss Ann Davis)($198.47)

1848 1 China teapot, sugar bowl and 2 cup plates - $ .31 1/4 - (Henry Cheverl)($197.98 1/2)

1850 1 Full sett china blue and white - $3.00 - (Henry D. Burch) ($2,552.45)

Miscellaneous

1841 1 Washstand bowl, pitcher - $2.50 - (Thomas M. Swann)($9,386.20)

APPENDIX B - CERAMIC UTILIZATION

Aud, Ignatius - Inventory Date 1844

Jar and butter - $ .37 1/2

Beal, Mathias - Inventory Date 1842

1 Stone jar and butter - $2.50
1 Stone jar and coffee - $1.00
1 Small jar with rice - $ .25

Bean, William - Inventory Date 1847

1 Jar of pickles - $1.00
2 Jars of butter and 1 cream jar - $2.00

Biscoe, Langley - Inventory Date 1843

5 Jars lard - $4.50

Biscoe, William D. - Inventory Date 1841

1 Jug and oil - $ .50

Burroughs, Hesekiah T. - Inventory Date 1843

1 Stone pot and butter - $ .50
1 Stone pot and lard - $ .50

Cissell, Peregrine - Inventory Date 1842

1 Earthen crock and lard - $1.00
1 Small Do. - $ .60
2 Stone pots and some lard - $ .75
1 Dye and 1 chamber pot - $ .25

Coad, Mrs. Ann - Inventory Date 1842

2 Jugs and bounce - $2.00
1 Jug and brandy - $ .75
1 Demijohn and wine - $2.50
1 Do. and codoil - $1.25
1 Do. and molasses - $1.50
2 Jars full butter and jars in pantry - $6.00
2 Jars summer butter and jars - $2.50
4 Jars and pickles - $4.00
1 Lot jars and preserves - $3.00
1 Keg and 3 jars leaf fat - $7.50
4 Jars and old lard - $5.50
2 Small jugs and bounce - $1.00

Fenwick, Edward - Inventory Date 1843

Jug linseed oil - $ .25
1 Bottle sweet oil, jug turpentine - $ .50

Gough, Elizabeth - Inventory Date 1843

3 Small jars with pickles - $ .37 1/2
3 Jars with preserves - $ .75
3 Do. Do. Do. - $ .75
1 Jar to hold cream - $ .25
1 Jar lard, full - $1.00
1 Do. Do. , full - $1.00
1 Do. Do. , full - $1.00
1 Do. with some lard - $ .50
1 Large jug with wine - $ .75

Gough, Peter - Inventory Date 1844

3 Jugs vinegar - $1.25
3 Dimejohns vinegar - $1.50
1 Stone pitcher of salt - $ .50
1 Jug wine - $1.00
1 Jug spirrit - $1.00
1 Jug brandy - $ .50
1 Jug Bonnet - $ .25
1 Jug honey - $1.00
1 Keg and 2 jars lard - $7.00
1 Lot butter in jars - $5.00

Jarboe, John - Inventory Date 1844

3 Stone jars and contents - $ .25
1 Demmijohn and gin - $3.00
1 Do. with wine - $2.00

Loker, Meverel - Inventory Date 1849

Lot jugs and molasses - $1.00
1 Pitcher and 3 jugs with lard - $4.50
Jar with butter - $ .50

Massey, Eleanor G. - Inventory Date 1842

3 Jars and bottle with preserves - $ .50
1 Jug with castor oil - $ .75
4 Oil jugs - $1.00

Saxton, Joseph - Inventory Date 1842

1 Jug of castor oil - $ .75
1 Do. of vinegar - $ .75
1 Jar and preserves - $ .50

Shermantine, Benedict - Inventory Date 1845

2 Jars of lard - $1.50
2 ditto - $2.00

Thomas, Joseph S. - Inventory Date 1842

1 Stone jar full of butter - $1.25
1 Large stone crock of lard - $1.25

APPENDIX C - ECONOMIC PROFILE: DISTRICTS 1 and 2, ST. MARY'S COUNTY, MARYLAND (Based on the 1838 Tax List)

DISTRICT 1

1. Total Estate Value of all Taxed Persons: 170

$0-200	56 or 32.9% of category
201-400	30 or 17.7%
401-600	19 or 11.2%
601-800	11 or 6.4%
801-1000	8 or 4.6%
1001-1200	7 or 4.1%
1201-1400	2 or 1.2%
1401-1600	7 or 4.1%
1601-1800	2 or 1.2%
1801-2000	4 or 2.3%
2001-2200	2 or 1.2%
2201-2400	2 or 1.2%
2401-2600	3 or 1.8%
2601-2800	3 or 1.8%
2801-3000	3 or 1.8%
3001-3200	1 or .6%
3201-3400	2 or 1.2%
3401-3600	1 or .6%
3601-3800	0
3801-4000	1 or .6%
4001-4200	2 or 1.2%
4201-4400	0
4401-4600	2 or 1.2%
4601-4800	1 or .6%
4801-20,000	0
+ 20,000	1 or .6%

2. Total Estate Value of Persons owning both Land and Slaves: 59

$0-200	2 or 3.4% of category
201-400	5 or 8.5%
401-600	8 or 13.6%
601-800	2 or 3.4%
801-1000	5 or 8.5%
1001-1200	4 or 6.8%
1201-1400	2 or 3.4%
1401-1600	3 or 5.1%
1601-1800	2 or 3.4%
1801-2000	4 or 6.8%
2001-2200	1 or 1.7%
2201-2400	1 or 1.7%
2401-2600	3 or 5.1%
2601-2800	3 or 5.1%
2801-3000	3 or 5.1%
3001-3200	1 or 1.7%

2. Total Estate Value of Persons owning both Land and Slaves (cont'd)

3201-3400	2 or 3.4%
3401-3600	1 or 1.7
3601-3800	0
3801-4000	1 or 1.7
4001-4200	2 or 3.4
4201-4400	0
4401-4600	2 or 3.4
4601-4800	1 or 1.7
4801-20,000	0
+ 20,000	1 or 1.7

3. Total Estate Value of Persons owning Land Only: 44

$0-200	14 or 31.8% of category
201-400	9 or 20.4
401-600	4 or 9.1
601-800	7 or 15.9
801-1000	2 or 4.5
1001-1200	3 or 6.8
1201-1400	0
1401-1600	3 or 6.8
1601-2000	0
2001-2200	1 or 2.3
2201-2400	1 or 2.3

4. Total Estate Value of Persons owning Slaves Only: 53

$0-200	27 or 51.0% of category
201-400	16 or 30.2
401-600	6 or 11.3
601-800	2 or 3.8
801-1000	1 or 1.9
1001-1400	0
1401-1600	1 or 1.9

5. Total Estate Value of Persons owning neither Land nor Slaves: 14

$0-200	13 or 92.8% of category
201-400	0
401-600	1 or 7.1

6. Acreage owned by Land and Slave Owners and Land Owners Only: 103

1-50 acres	19 or 18.4% of category
51-100	11 or 10.7
101-150	9 or 8.7
151-200	17 or 16.5
201-250	12 or 11.6
251-300	8 or 7.8
301-350	5 or 4.8
351-400	3 or 2.9
401-450	3 or 2.9
451-500	3 or 2.9
501-550	3 or 2.9
551-600	4 or 3.9
601-650	2 or 1.9
651-750	0
751-800	1 or 1.0
801-850	1 or 1.0
851-1400	0
1401-1450	1 or 1.0
+ 2000	1 or 1.0

7. Acreage owned by Land and Slave Owners: 59

1-50 acres	11 or 18.6% of category
51-100	4 or 6.8
101-150	3 or 5.1
151-200	8 or 13.6
201-250	9 or 15.2
251-300	5 or 8.5
301-350	2 or 3.4
351-400	1 or 1.7
401-450	3 or 5.1
451-500	2 or 3.4
501-550	3 or 5.1
551-600	4 or 6.8
601-650	1 or 1.7
651-750	0
751-800	1 or 1.7
801-1400	0
1401-1450	1 or 1.7
+ 2000	1 or 1.7

8. Acreage owned by Land Owners Only: 44

1-50 acres	8 or 18.2% of category
51-100	7 or 15.9
101-150	6 or 13.6
151-200	9 or 20.4
201-250	3 or 6.8
251-300	3 or 6.8
301-350	3 or 6.8
351-400	2 or 4.5

8. Acreage owned by Land Owners Only (cont'd)

401-450 acres	0
451-500	1 or 2.3%
501-600	0
601-650	1 or 2.3
651-800	0
801-850	1 or 2.3

9. Number of Slaves owned by Land and Slave Owners and Slave Owners Only: 112

1 slaves	19 or 17.0% of category
2	14 or 12.5
3	14 or 12.5
4	3 or 2.7
5	10 or 8.9
6	9 or 8.0
7	4 or 3.6
8	10 or 8.9
9	7 or 6.2
10	2 or 1.8
11	1 or .9
12	3 or 2.7
13	2 or 1.8
14	3 or 2.7
15	3 or 2.7
16	2 or 1.8
17	1 or .9
18-19	0
20	1 or .9
21-25	0
26	1 or .9
27-29	0
30	1 or .9
31-34	0
35	1 or .9
36-68	0
69	1 or .9

10. Number of Slaves owned by Land and Slave Owners: 59

1 Slaves	5 or 8.5% of category
2	6 or 10.2
3	3 or 5.1
4	0
5	5 or 8.5
6	5 or 8.5
7	4 or 6.8
8	6 or 10.2
9	5 or 8.5
10	2 or 3.4
11	1 or 1.7
12	3 or 5.1
13	2 or 3.4

10. Number of Slaves owned by Land and Slave Owners (cont'd)

14 Slaves	3 or 5.1%
15	2 or 3.4
16	1 or 1.7
17	1 or 1.7
18-19	0
20	1 or 1.7
21-25	0
26	1 or 1.7
27-29	0
30	1 or 1.7
31-34	0
35	1 or 1.7
36-68	0
69	1 or 1.7

11. Number of Slaves owned by Slave Owners Only: 53

1 Slaves	14 or 26.4% of category
2	8 or 15.1
3	11 or 20.8
4	3 or 5.7
5	5 or 9.4
6	4 or 7.5
7	0
8	4 or 7.5
9	2 or 3.8
10-14	0
15	1 or 1.9
16	1 or 1.9

DISTRICT 2

1. Total Estate Value of all Taxed Persons: 334

$0-200	131 or 39.3% of category
201-400	66 or 19.8
401-600	34 or 10.2
601-800	20 or 6.0
801-1000	11 or 3.3
1001-1200	19 or 5.7
1201-1400	10 or 3.0
1401-1600	5 or 1.5
1601-1800	5 or 1.5
1801-2000	5 or 1.5
2001-2200	2 or .6
2201-2400	4 or 1.2
2401-2600	4 or 1.2
2601-2800	1 or .3
2801-3000	2 or .6

1. Total Estate Value of all Taxed Persons (cont'd)

3001-3200	1 or .3%
3201-3400	1 or .3
3401-3600	0
3601-3800	1 or .3
3801-4000	1 or .3
4001-4200	2 or .6
4201-4400	1 or .3
4401-5200	0
5201-5400	1 or .3
5401-5600	0
5601-5800	1 or .3
5801-6000	0
6001-6200	1 or .3
6201-6400	1 or .3
6401-6600	1 or .3
6601-6800	0
6801-7000	1 or .3
7001-7200	0
7201-7400	1 or .3
7401-8800	0
8801-9000	1 or .3

2. Total Estate Value of Persons owning both Land and Slaves: 68

$0-200	2 or 2.9% of category
201-400	5 or 7.4
401-600	5 or 7.4
601-800	5 or 7.4
801-1000	6 or 8.8
1001-1200	11 or 16.2
1201-1400	10 or 14.7
1401-1600	2 or 2.9
1601-1800	3 or 4.4
1801-2000	4 or 5.9
2001-2200	1 or 1.5
2201-2400	1 or 1.5
2401-2600	3 or 4.4
2601-2800	0
2801-3000	1 or 1.5
3001-3200	1 or 1.5
3201-3600	0
3601-3800	1 or 1.5
3801-4000	0
4001-4200	2 or 2.9
4201-5200	0
5201-5400	1 or 1.5
5401-6000	0
6001-6200	1 or 1.5
6201-6400	1 or 1.5
6401-6600	1 or 1.5
6601-6800	0
6801-7000	1 or 1.5

3. Total Estate Value of Persons owning Land Only: 133

$0-200	46 or 34.5% of category
201-400	35 or 26.3
401-600	15 or 11.3
601-800	10 or 7.5
801-1000	2 or 1.5
1001-1200	7 or 5.3
1201-1400	0
1401-1600	3 or 2.2
1601-1800	2 or 1.5
1801-2000	1 or .8
2001-2200	1 or .8
2201-2400	2 or 1.5
2401-2600	1 or .8
2601-2800	1 or .8
2801-3000	1 or .8
3001-3200	0
3201-3400	1 or .8
3401-3800	0
3801-4000	1 or .8
4001-4200	0
4201-4400	1 or .8
4401-5600	0
5601-5800	1 or .8
5801-7200	0
7201-7400	1 or .8
7401-8800	0
8801-9000	1 or .8

4. Total Estate Value of Persons owning Slaves Only: 99

$0-200	52 or 52.6% of category
201-400	24 or 24.3
401-600	13 or 13.2
601-800	5 or 5.0
801-1000	3 or 3.0
1001-1200	1 or 1.0
1201-2200	0
2201-2400	1 or 1.0

5. Total Estate Value of Persons owning neither Land nor Slaves: 34

$0-200	31 or 91.2% of category
201-400	2 or 5.8
401-600	1 or 2.9

6. Acreage owned by Land and Slave Owners and Land Owners Only: 201

1-50 acres	22 or 10.9% of category
51-100	36 or 17.9
101-150	28 or 13.9
151-200	21 or 10.4

6. Acreage owned by Land and Slave Owners and Land Owners Only (cont'd)

201-250 acres	23 or 11.4%
251-300	13 or 6.5
301-350	14 or 7.0
351-400	10 or 5.0
401-450	5 or 2.5
451-500	5 or 2.5
501-550	3 or 1.5
551-600	4 or 2.0
601-650	2 or 1.0
651-700	4 or 2.0
701-750	1 or .5
751-800	2 or 1.0
801-850	3 or 1.5
851-900	2 or 1.0
901-950	1 or .5
951-2050	0
2051-2100	1 or .5
2101-2350	0
2351-2400	1 or .5

7. Acreage owned by Land and Slave Owners: 68

1-50 acres	2 or 2.9% of category
51-100	10 or 14.7
101-150	6 or 8.8
151-200	7 or 10.3
201-250	11 or 16.2
251-300	5 or 7.4
301-350	5 or 7.4
351-400	6 or 8.8
401-450	1 or 1.5
451-500	4 or 5.9
501-550	1 or 1.5
551-600	1 or 1.5
601-650	1 or 1.5
651-700	1 or 1.5
701-750	1 or 1.5
751-800	2 or 2.9
801-850	2 or 2.9
851-900	1 or 1.5
901-2350	0
2351-2400	1 or 1.5

8. Acreage owned by Land Owners Only: 133

1-50 acres	20 or 15.0% of category
51-100	26 or 19.5
101-150	22 or 16.5
151-200	14 or 10.5
201-250	12 or 9.0
251-300	8 or 6.0

8. Acreage owned by Land Owners Only (cont'd)

301-350 acres	9 or 6.8%
351-400	4 or 3.0
401-450	4 or 3.0
451-500	1 or .8
501-550	2 or 1.5
551-600	3 or 2.2
601-650	1 or .8
651-700	3 or 2.2
701-800	0
801-850	1 or .8
851-900	1 or .8
901-950	1 or .8
951-2050	0
2051-2100	1 or .8

9. Number of Slaves owned by Land and Slave Owners and Slave Owners Only: 167

1 Slaves	45 or 26.9% of category
2	25 or 15.0
3	14 or 8.4
4	16 or 9.6
5	14 or 8.4
6	11 or 6.6
7	4 or 2.4
8	9 or 5.4
9	5 or 3.0
10	0
11	5 or 3.0
12	1 or .6
13	4 or 2.4
14	1 or .6
15	2 or 1.2
16	1 or .6
17	0
18	3 or 1.8
19	2 or 1.2
20	0
21	1 or .6
22	2 or 1.2
23-24	0
25	1 or .6
26-29	0
30	1 or .6

10. Number of Slaves owned by Land and Slave Owners: 68

1 Slaves	12 or 17.6% of category
2	9 or 13.2
3	5 or 7.4
4	6 or 8.8
5	3 or 4.4

10. Number of Slaves owned by Land and Slave Owners (cont'd)

6 Slaves	4 or 5.9%
7	2 or 2.9
8	6 or 8.8
9	2 or 2.9
10	0
11	4 or 5.9
12	1 or 1.5
13	1 or 1.5
14	1 or 1.5
15	2 or 2.9
16	1 or 1.5
17	0
18	2 or 2.9
19	2 or 2.9
20	0
21	1 or 1.5
22	2 or 2.9
23-24	0
25	1 or 1.5
26-29	0
30	1 or 1.5

11. Number of Slaves owned by Slave Owners Only: 99

1 Slaves	33 or 33.0% of category
2	16 or 16.2
3	9 or 9.1
4	10 or 10.1
5	11 or 11.1
6	7 or 7.1
7	2 or 2.0
8	3 or 3.0
9	3 or 3.0
10	0
11	1 or 1.0
12	0
13	3 or 3.0
14-17	0
18	1 or 1.0

APPENDIX D - PATTERNS OF CERAMIC CONSUMPTION

One major disparity which developed between the documentary and archaeological record was the incidence of sets of ceramics. The ceramics recovered from the basement of the Moses Tabbs House represent a wide range of types and patterns, most of which did not match. The assumption has been that the ceramics were bought not as sets but as individual pieces, perhaps as replacements for broken items (Miller 1973: 19). Judging from inventories and merchants' account books of the period, this would seem to be atypical.

Included among the records and papers which are stored at the St. Mary's County Courthouse in Leonardtown are a number of miscellaneous account books. They are from various sources, and in most instances were deposited in the Courthouse as evidence in bankruptcy cases, or comparable legal proceedings. Although they cover the first half of the 19th century, only those books which date from the period 1830 to 1850 were examined. Three daybooks from this period, all belonging to an anonymous Leonardtown merchant, were found to include ceramic descriptions. While not detailed concerning the type of wares sold, and not reporting sales to specific persons included in our study group, they do suggest the way in which ceramics were traded in St. Mary's County over a span of some years.

From a reading of those merchants' account books which included references to sales of ceramics, it is evident that, in Leonardtown at least, the bulk of the sales were of complete sets. A typical selection shows this clearly: (St. Mary's County, Maryland, Courthouse n.d.):

"1 set tea ware - $ .75 (Feb. 4, 1830)"
"1 set tea cups & saucers - $ .62 1/2
1 set plates - $ .37 1/2
1 Tea Pot - $ .50
1 Sugar Bowl - $ .50 (Dec. 30, 1830)"
"1 set tea ware - $ .62 1/2 (Jan. 6, 1831)"
"1 Dozen edged plates - $ .62 1/2 (Feb. 7, 1831)"
"1 sett tea cups and saucers - $ .62 1/2 (Feb. 24, 1831)"
"1 Broken sett tea ware - $ .37 1/2 (Feb. 2, 1831)"
"1 set cups & saucers - $ .31 1/4 (April 27, 1838)"

Although he dealt in very inexpensive wares, in only rare instances did this Leonardtown merchant sell anything but complete sets of dishes and teaware.

The evidence from the inventories is not as definite, but still suggests that most ceramic purchases were made in sets. Certainly there are numerous entries for two and three miscellaneous dishes, but it may be presumed that in many instances these were survivals of a once larger set. This seems justifiable in light of the large number of examples of complete sets of tea and dinner ware, and the many listings for plates

given in dozens. It would appear that a person owning a large quantity of single dishes was more likely to have been the exception than the rule.

Unfortunately, the size of the sets in question is liable to remain a mystery in most cases, simply because they varied in each instance. There does not appear to have been a standard unit which was described as a set in the case of a particular ware; rather, it was a term of convenience which was applied to any large grouping of matching ceramics. Of the 100 inventories studied, only two had indications of the size of the sets included. William H. Ford owned "1 set (58 piece) tea ware - $8.00" and Samuel Dyson owned "1 sett china (32 pcs.) - $2.50." Although not a part of our sample, James A. Gough lived in St. Mary's County, and his inventory casts some light on this question. When he died in 1848, he owned "1 Tea Sett 80 pieces - $20.00; 1 old Tea sett 28 pieces - $2.00; 1 Dinner Sett 104 pieces - $20.00." Obviously, the size of the set varied depending on use and condition, and it is not possible to determine a standard number of pieces. There is little doubt that the bulk of ceramic transactions, especially those in the finer wares, took place in terms of sets. There seems to have been, however, a flourishing second-hand market in the County if the evidence provided by the accounts of estate sales may be relied upon. It is entirely possible that a study of second-hand consumption patterns would reveal that there was no prejudice against broken sets among those purchasing their goods at such sales.

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PRELIMINARY INVESTIGATIONS AT FORT DE CHARTRES

Margaret Brown

Fort de Chartres was one of the major outposts in French territory ranking with Michilimackinac, Detroit and New Orleans in its strategic position for commerce and military deployment. Fort de Chartres was the governmental seat of the vast territory referred to as Illinois country and was established to form a link between the colonies in Canada to the north and Louisiana to the south. In present times though, it has been unknown and our research there is the initial effort to reveal the history and importance of this Fort.

In 1718 Pierre du Gue de Boisbriand, Commandant of Illinois country and Lieutenant of the King in Louisiana, arrived in Illinois country with a detachment of regulars and instructions to establish a permanent military post. He quartered his men at the French and Indian town of Kaskaskia and began the construction of a fort 18 miles upstream from Kaskaskia on the east bank of the Mississippi. The fort, finished in 1720, was named Fort de Chartres in honor of the Duc de Chartres, son of the Duc de Bourbon, Regent of France (Schlarman 1929:193). The fort had a wooden stockade and was described as having "stakes the size of a leg. The shape is that of two horse shoes, one turning in, and the other turning out, with two square bastions" (Mereness 1916:70).

Floods in 1727 destroyed part of the fort. It is not clear from the records if the fort was reconstructed on the same location or moved, but by 1747 the second Fort was in disrepair and the garrision had to be removed to Kaskaskia (Babson 1908:22).

In 1750 the French, fearful of British encroachments, decided to construct a new fort, this one to be made of stone. Jean Bapiste Saucier drew up the plans and the new fort was built 60 *toises* from the old. The stone fort covered four acres and had four bastions; it contained a commandant's house, officers' quarters, two barracks buildings, a prison, storehouse, guardhouse, powder magazine and other smaller structures. The Fort was complete enough by 1756 for residence although the barracks were never completely finished. The Fort remained in French possession until 1765 for, although Illinois had been ceded to the British by treaty in 1763 it took the British two years to reach the Fort and take command.

In 1772 the British were forced to abandon the Fort as the Mississippi River was shifting its channel and undermining the west wall. The British left for Kaskaskia after destroying portions of the fort so that it could not be used as a stronghold. The two bastions facing the river were damaged in the spring floods of 1772 and the west wall destroyed, however, the river then again swung away from the Fort and did no further damage.

Over the years most of the stone was robbed by the local populace for building purposes and all buildings except the powder magazine were destroyed. The site became overgrown and later was a farmyard. In 1913 through the urgings of interested local persons the State of Illinois purchased the land for a state park. At this time only the powder magazine remained and traces of foundations of other buildings.

About 1915 the interior of the Fort was graded by horse drawn slip and approximately three feet of occupational debris and silt was scraped away and used to fill in low lying areas. A great deal of cultural material was disturbed during this process. Although there are no written records relating to this work an elderly resident of the area, Mr. McClenahen, whose father had the contract for the work, recalled riding on the slip and seeing cannon balls, glass, pottery, bones and other objects strewn behind as they worked (Personal communication 1972).

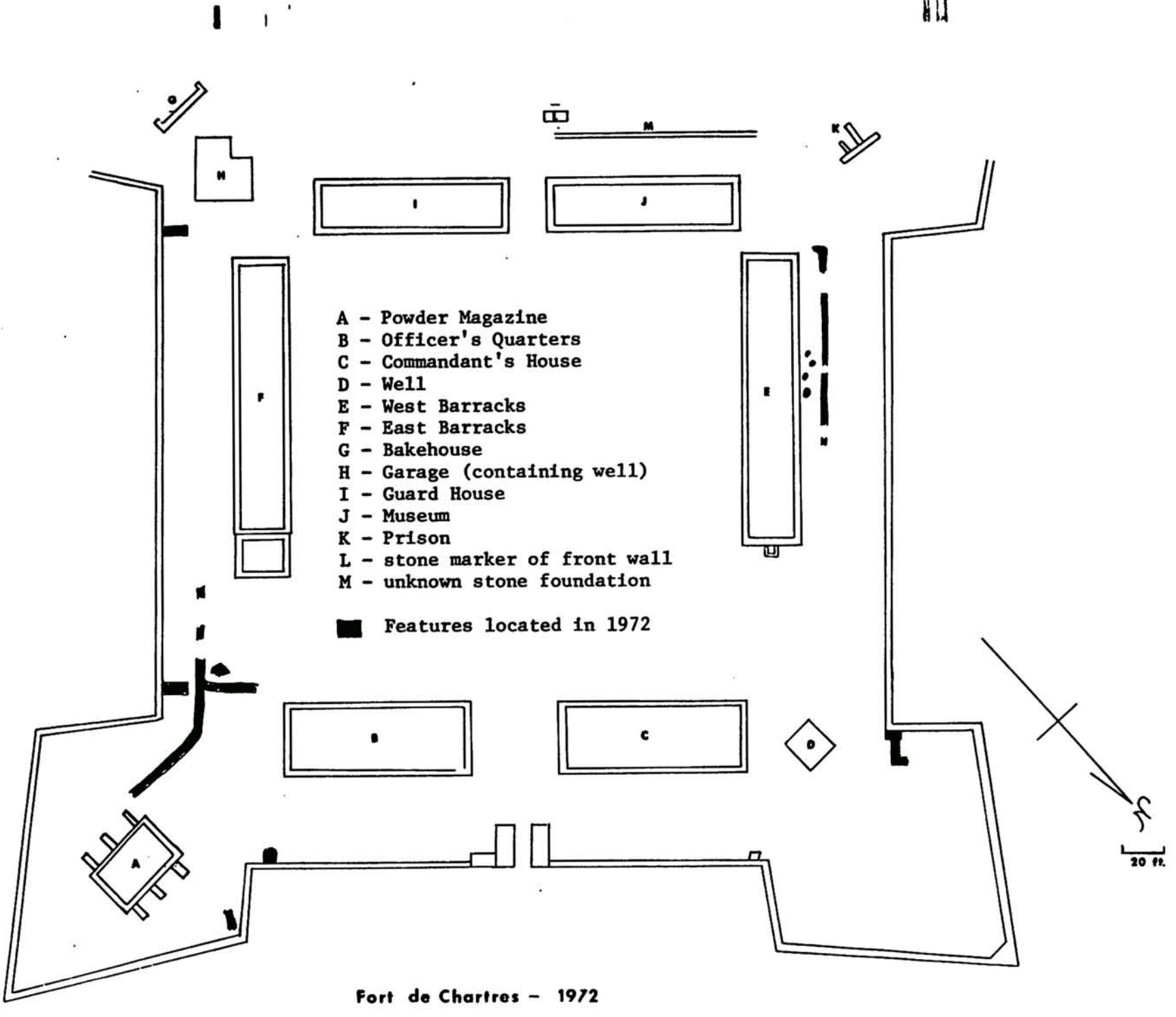
In the late 1920's and early 1930's crews were hired to expose the remaining foundations which then were cemented over after possible reconstruction. The cellars of the structures were dug out. All material was disposed of. Also in the 1930's the powder magazine was restored, and the storehouse, guardhouse and north gate were reconstructed. No major work has been done since and the park has remained as a picnic area.

In recent years the Illinois Department of Conservation has been attempting to upgrade the park and in 1972 a grant was made for preliminary archeological investigations of the Fort. Although our work was in the nature of testing it is felt that a report on this work is due because of the importance of the site and the total lack of previous knowledge about it.

An arbitrary datum was established within the Fort and a grid set up. The grid was oriented to the basic features of the Fort and squares were designated north or south of the datum (not a true north/south line) and east or west of the center line. Most testing was carried out in 5x5' squares although larger units were used when desired.

Our first project on the site indicates the type of frustration engendered by the lack of funding for the research which should accompany such a project. At the request of the Department of Conservation, our initial work was concentrated in the bastion partially occupied by the powder magazine. The interior of this bastion except for the immediate area of the powder magazine was about three feet higher than the remainder of the Fort. Formerly a sign stood here indicating that this was the original ground level of the Fort. The sign was removed by Conservation in their upgrading of the park. The students in the project spent long hours digging through 3-5 feet of deposits and getting excellent experience in drawing complex profiles of what I was rapidly convinced were meaningless (for the 18th century) stratigraphic layers. This was confirmed by an historian who volunteered some research for us and turned up a telling piece of evidence, a photograph showing the powder magazine about the turn of the century standing alone on a mound of earth. It is presently in a hollow. With this clear proof of my suspicions we turned elsewhere.

Two stone foundations were uncovered extending inwards from the east wall, and one was also found along the north wall. It was evident that both sides of these had been exposed to view as the outer faces were of a gray white neatly cut limestone while the interior was of a lower



Fort de Chartres - 1972

FIGURE 1

quality yellowish stone. The best preserved foundation extended nearly 19 feet out from the wall and was about 4' wide. These would appear to be supports either for the wall or for a platform below the wall.

In the eastern portion of the Fort tests located two trenches one above the other (Figure 2). The uppermost one was followed for 40 feet then it cornered and turned west. The situation became more complicated with the appearance of another trench and a solid layer of plaster approximately 15 x 8'. These features appear to indicate at least two structures in the area. The inventory made by the British when taking control of the Fort has no mention of structures here so it seems likely they postdate the French occupation.

The lower trench ran straight for 85 feet and then angled eastward and could be traced nearly to the powder magazine. The trench contained closely spaced postmolds 6-10" in diameter, but in the angled portion the posts were smaller and set in a double row. From experience on other sites the response to this feature was that it was a stockade, however, as mentioned the walls of this Fort were of stone. The tentative conclusion was that this line might represent a temporary stockade for protection during the construction of the stone wall.

A series of squares were opened on the southwestern side of the Fort to search for latrines supposed to be present there; several trenches were found but which represent the latrine is not yet known. Preservation in this area is fairly good so full-scale excavation should solve this.

The final area to be tested was the northwest bastion which appears to be the least disturbed. Burials were located only a few inches below the present surface. These were Indian burials and without doubt were placed there following the abandonment of the Fort.

The area beneath the burials was excavated and revealed a layer of plaster three feet wide following a line similar to the present bastion wall. The plaster was three feet below the present surface and did not appear to have had stones placed on it. That it did not represent the final construction of the Fort could be seen from an upper layer of plaster found extending under the reconstructed wall and only a few inches below the surface. Again questions were raised which could not be answered by the small scope of the test squares.

Artifacts

Most of the artifacts came from outside the features and some may indeed have been moved to their location by the various earlier workers at the Fort. However, the ceramics as a group are informative and since nothing from the Fort has been known previously I will describe these briefly. The classification used here follows Miller and Stone (1970).

Earthenware

The blue and white tin glazed earthenware includes both British and French sherds, although the majority of those that can be identified

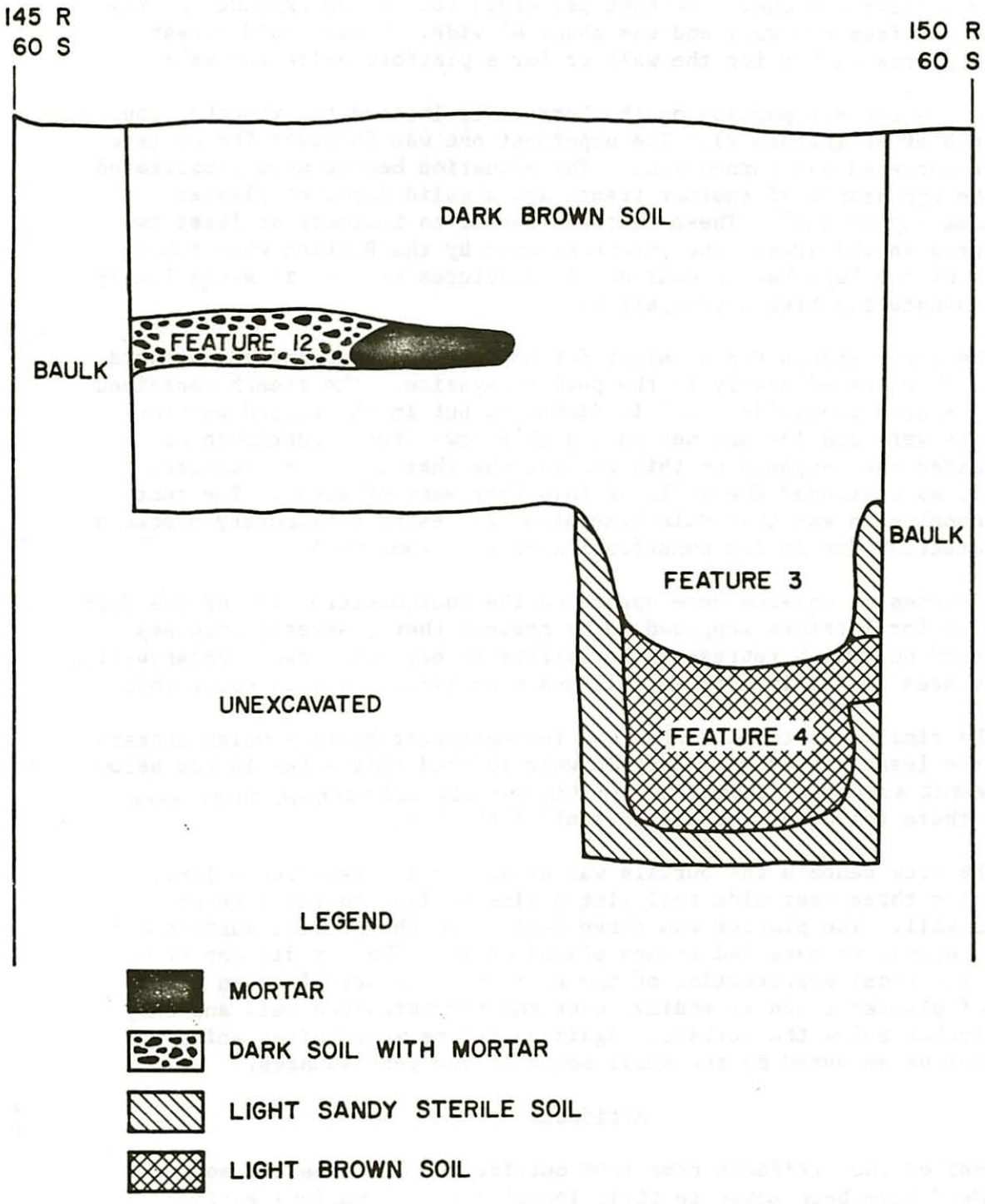


FIGURE 2 NORTH PROFILE 145 R 65 S SHOWING LOWER "STOCKADE" TRENCH, UPPER WALL, AND PORTION OF PLASTER LAYER.

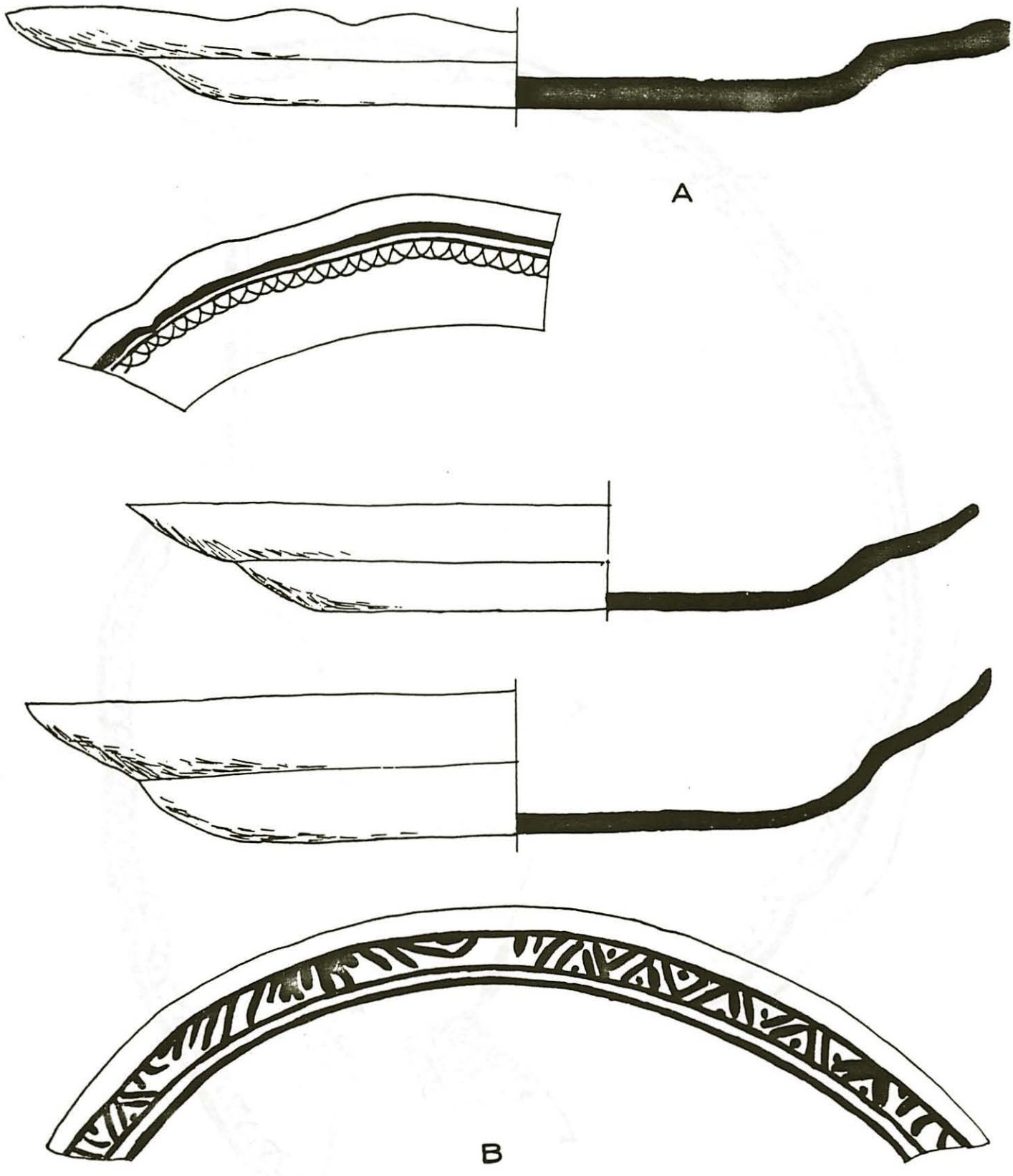


FIGURE 3. Rim patterns and cross sections of faience platters.

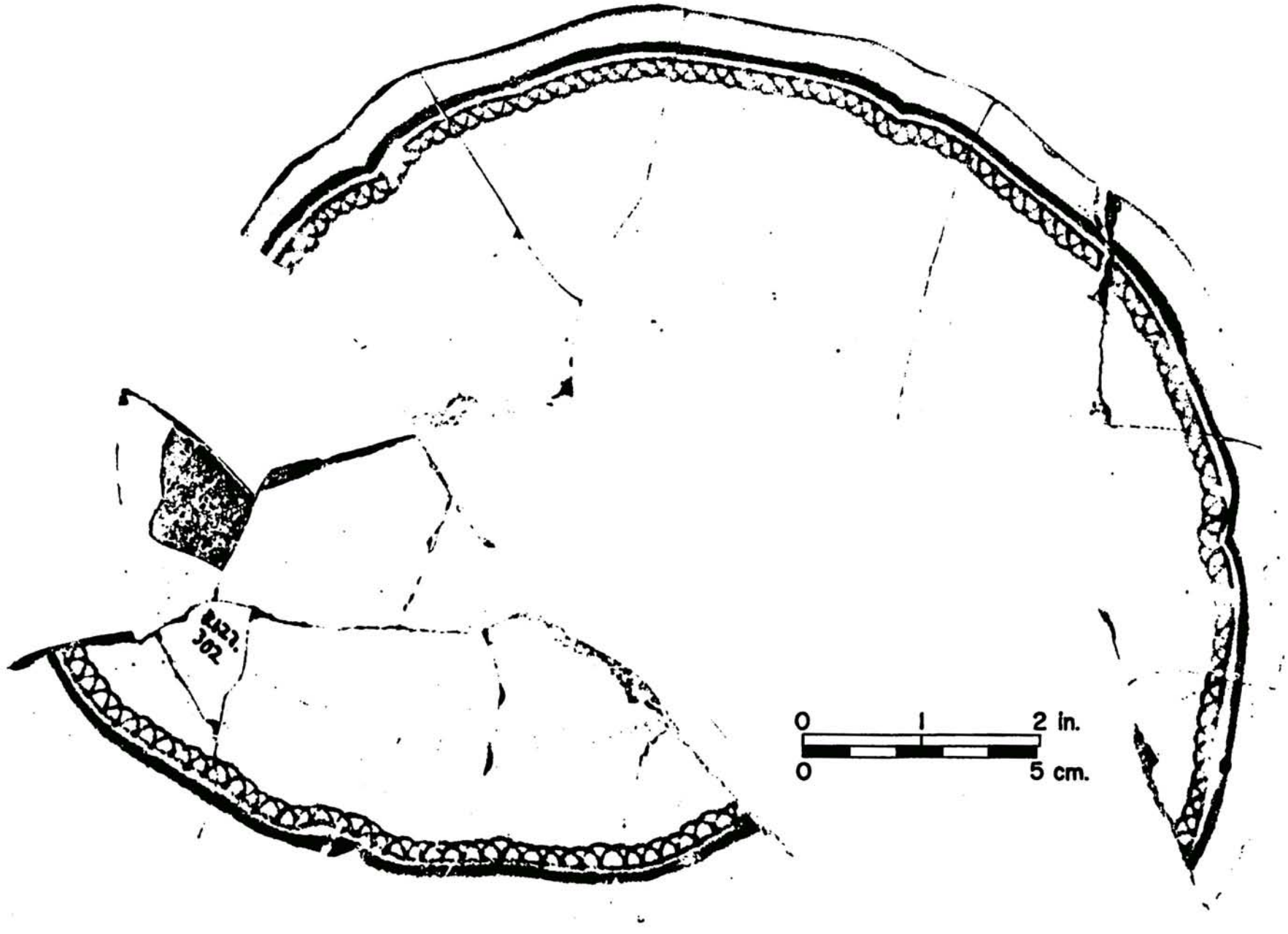


PLATE 1. Portions of blue and white faience plates.

PLATE II

"Rouen" platter sherds, French faience

a - blue and black rim design

b - blue and black rim design

c - reverse of sherd with pattern similar to (b)

d - blue rim design

e - blue and black design

f - blue and purple design

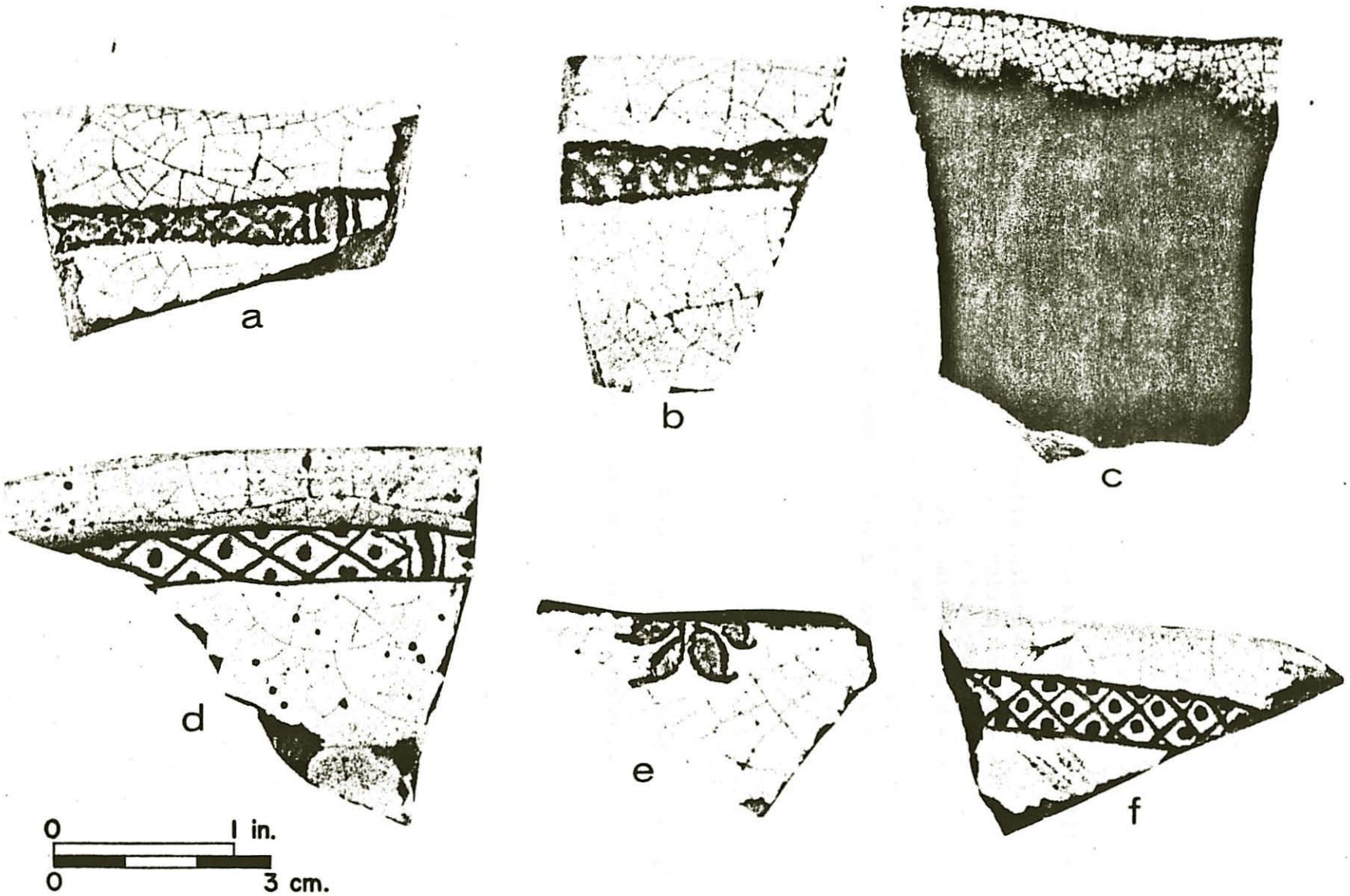


PLATE II

PLATE III. Polychrome faience

a - yellow design, origin?
b - yellow design
c - yellow design
d - blue and black design, French
e - red, yellow, green and tan design, French, platter
f - blue, red and yellow, English

PLATE IV. English white salt glaze

Two molded relief rims and base of bowl or cup

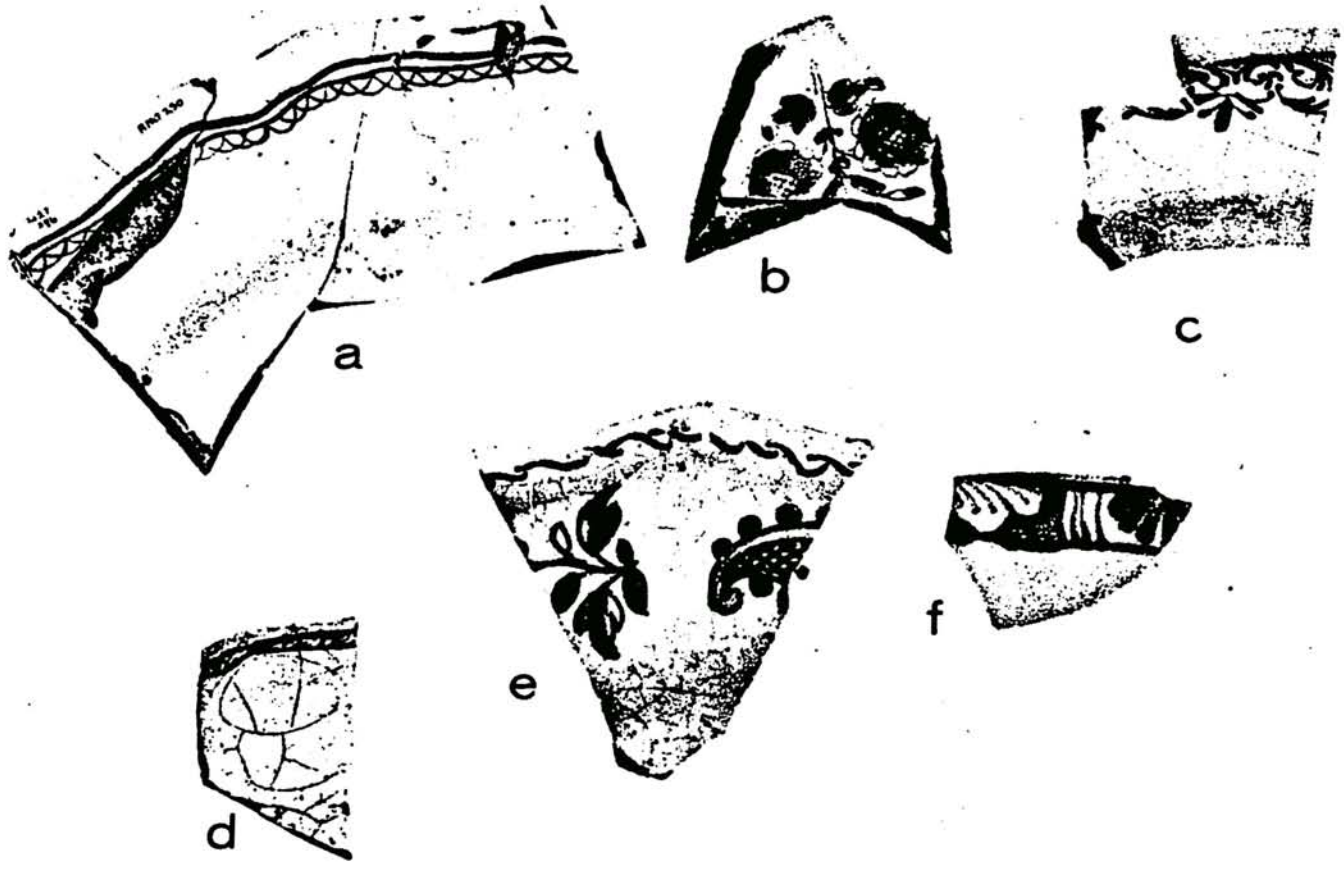


PLATE III

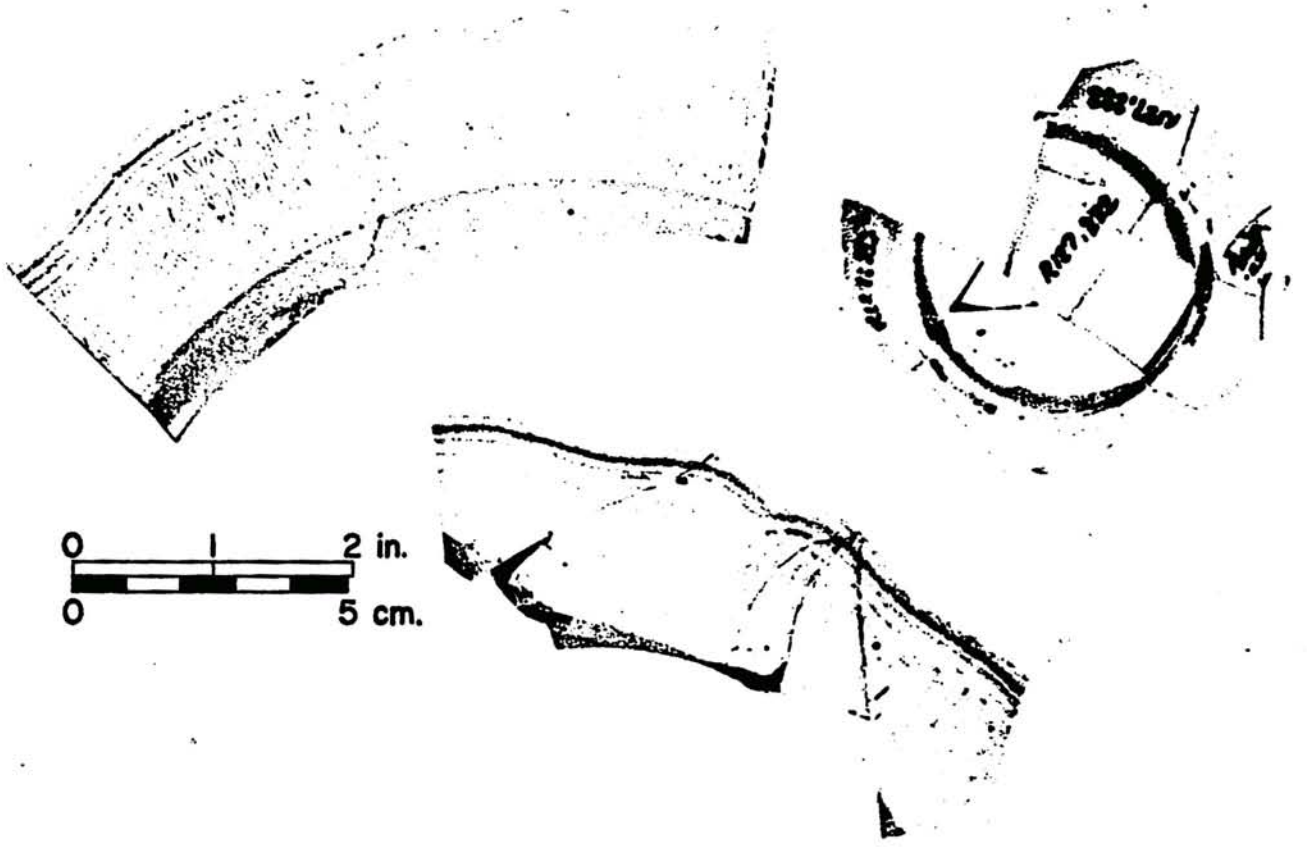


PLATE IV

are French. Plates are the most common form, a minimum of nine is estimated. Handles from mugs or pitchers are also present and at least two cups, one of which is British. In plain white earthenware, which Miller and Stone include under this group also, there were two jars, a cup and a chamber pot (Plate I and Figure 3).

Most of the polychrome earthenware again can be identified as French. There are at least three platters with yellow painted designs which seem unusual to me but rehpas are common elsewhere. All of the polychrome sherds are from platters and a minimum of six vessels is estimated (Plate III).

The brown and white earthenware has a lustrous brown exterior and the interior glaze frequently runs over the rim and onto the brown. Four platters are present and all have a simple rim border design in blue or blues and black (Plate II). At least one jar is also present.

The coarse earthenware was represented by unglazed redware; brown glazed ware with at least two bottles, a jar and a pitcher or chamber pot; green glazed ware with a jar and plate; and a yellow glazed large heavy bowl.

Only three sherds were found of fine earthenware and these were Wheildon ware, brown tortoise shell glaze. The form of the vessel could not be identified.

Although the period of British occupation of the Fort lies within the period of manufacture of creamware, no creamware sherds were found.

Stoneware

Most plain sherds of English white salt glaze may be from the central plain portion of relief decorated items but at least one plain cup or bowl is represented also. The relief molded sherds are from at least four plates and the patterns are the same as those illustrated in Miller and Stone (1970 Figure 36). Four overglaze painted polychrome sherds were present. Two of these were thin rim sherds and were probably from cups.

Porcelain

The blue and white sherds of Chinese export porcelain were small but appear to have been from bowls. The polychrome sherds represent at least two bowls. Two of these sherds have overglaze painting. Only one sherd of the brown glaze porcelain was found.

Six sherds of English porcelain were present, four of which formed a portion of a blue and white bowl. Two were from a vessel with a gray exterior.

Another ceramic type not discussed by Miller and Stone but found at Fort de Chartres was a tin-glazed earthenware with a light gray glaze. There were at least two bowls of this type.

Summary

Our work at the Fort last year was concerned with one very basic problem, namely, was there sufficient information left after the ravages of the early work to warrant extensive archaeological excavations. We did indeed prove that there is still ample evidence in the ground for the Fort and the life of the soldiers. Although the small areas excavated in our tests raised more questions than they answered, they indicate that information lies there and can be examined and interpreted to assist in the reconstruction of Fort de Chartres. Concentrated work on the Fort is scheduled to begin in 1974 and a great deal more information should be forthcoming.

Table 1
Summary of Ceramics Found 1972

Earthenware
- Tinglazed - total - 210
  - Type A blue and white 98 white 62
  - Type B polychrome 25
  - Type C brown and white 25
- Coarse earthenware - total - 59
  - Type A unglazed red ware 11
  - Type B brown glazed 40
  - Type D green glazed 5
  - Type E Yellow glaze 3
- Fine earthenware - total - 3
  - Type B Wheildon (Tortoise shell) 3

Stone Ware
- English salt glaze - total - 82
  - Type A plain white 44
  - Type B relief decorated 34
  - Type D polychrome 4
- Stoneware Miscellaneous - total - 21
  - Type B brown 21

Porcelain
- Chinese export - total - 32
  - Type A blue and white 17
  - Type B polychrome 14
  - Type C brown glaze 1
- English - total - 6

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CONTRIBUTED PAPERS - INTRODUCTION

The"Contributed Papers" section of these volumes allows the Chairman to construct volumes of papers that will be far more useful than one based on "Presented Papers" entirely. The following four papers were chosen for inclusion in this volume from those submitted for consideration by the Chairman.

Stanley South, Chairman
The Conference on Historic Site Archaeology

THE MACKINAC BUBBLE
ECONOMIC THEORY AND LATE PERIOD TRADE IN THE STRAITS OF MACKINAC

James E. Fitting

When this paper was first conceived, my idea was to compare the inflationary spiral in the Straits of Mackinac, following the inception of the European fur trade, to that in Europe and perhaps to that which is occurring in our own times. Certainly there were major technological, cultural and social transformations during this period. The documentation of this cultural change has usually taken two forms. On one hand, historians have tended to view the political change and changes in geographical alignment of tribal groups as its most significant manifestation (Hunt 1940). Archaeological studies have tended to concentrate on material culture (Quimby 1966) dealing primarily with the nature and change in trade goods over time. The study which even attempts to deal with the social effects of the fur trade is rare and the questions which have been raised on the social significance of the copper kettle (Brose 1970: 25) or the economic significance of the iron axe (Fitting 1966: 275) have still to be answered.

Ethnohistorical studies can be used to bridge the gap but the results are often frustrating for the archaeologist. As G. A. Wright (1967) has observed, most of the items mentioned as 17th century accounts of Great Lakes exchange are perishables which would not be represented in the archaeological assemblages of either prehistoric or early historic groups. The ethnohistoric approach, however, has proven of some value in establishing broad analytical frames for the examination of both prehistoric and early historic sites (Fitting and Cleland 1968).

With the work of the past decade, the time may be nearly ready for a reevaluation of the economic base and trade involvement of the early historic period from an archaeological perspective. Unfortunately, such a statement must await completion of the analysis of data that has been recovered in Wisconsin, Michigan, Ontario and Ohio and while this data is still known only in preliminary form, any evaluation of early historic economic change in the area must remain preliminary. This paper is written to compare specific data sets from three sites in the Straits of Mackinac region and to suggest some of the variables which must be considered for a wider regional study.

The sites which will be considered are the Juntunen site, the Lasanen site and the Village of the Tionontate. The Juntunen site is located on Bois Blanc Island and has been the subject of a major monograph (McPherron 1967), and Cleland (1966) has published an extensive evaluation of the significance of the faunal assembalge. The site was occupied between A.D. 800 and A.D. 1400 but the subsistence pattern seems to have been consistant throughout this period with some fluctuation for minor climatic changes. The Juntunen site contains village debris relating to the entire occupation and a group of burials relating to the 14th century Juntunen Phase. It can be used as a prehistoric bench mark against which the early historic Lasanen and Tionontate sites may be viewed.

striking but difficult to interpret. The Tionontate site shows a much greater dependance on sturgeon and lake trout, particularly the former. The decrease of emphasis on dog may be, in part, a dietary change brought about by Christianity but this would not explain the decrease in beaver, particularly in a group that was supposedly profiting in the fur trade. This might mean that the Tionontate were more middlemen than primary producers in the fur trade.

Cleland has pointed out that bone counts such as these are not accurate indicators of the relative importance of different species in the actual diet of a group. At the Juntunen site, bear, moose and deer accounted for less than one percent of the bone refuse but when the number and size of individuals were considered, they provided 22 percent of the meat consumed at the site.

In Table 2, the data on the ten most important food species at the Juntunen site are compared, in terms of percentage of total meat weight, with the faunal remains from the Tionontate site. The number of individuals was not recorded in the analysis of the Tionontate collections but it has been obtained by taking the ratio of total identified bone to total individuals for each species from the Juntunen site and applying it to the Tionontate bone samples.

The significance of sturgeon is even greater when this comparison is used and it would account for 88 percent of the meat diet. All fish accounted for 99 percent of the meat diet at the Tionontate site as opposed to only 66 percent at the Juntunen site. Cleland (1966: 209) has characterized the Juntunen site as a warm season (including early spring and late fall) fishing village occupied by a non-agricultural group. The trends in species frequency and importance at the Juntunen site, which lead Cleland to this conclusion, are amplified at the Tionontate site. The Tionontate village is more like the "ideal" Juntunen site than the Juntunen site itself. The introduction of European trade goods seems to have had virtually no impact on the subsistence base of the Straits of Mackinac region other than to amplify trends already there.

At this point, some additional comments are pertinent. The Juntunen site was interpreted as a seasonal occupation while the historic (French) accounts of the Tionontate village imply that it was a permanent, stockaded settlement. Long houses were found at both sides. The historic accounts also indicate that the Tionontate at least occasionally grew corn; garden fields are located on the 1688 LaHonton map and in 1973 we excavated a part of Gyftakis site which corresponds to the location of the fields on the map. It might be best to reevaluate both of the French accounts. At this point, I am more willing to abandon the French accounts than the seasonal model but we may be required to do this as well.

There are also striking differences in the technology and technological efficiency of the two sites. A summary of some of the major artifact categories are given in Table 3. The cultural items have been roughly grouped into a) items for food procurement and processing, b) containers and c) ornamentation. Almost all of the Juntunen assemblage can be related to food procurement, processing and storage while 74 percent of the Tionontate assemblage is placed in ornamentation.

The average faunal recovery is approximately 5.5 times as great for the Juntunen site so we can weigh the relative importance of European goods in the food quest if we multiply all of the Tionontate categories by the 5.5 figure. This should provide us with a figure suggesting the utility of a given artifact class in relations to a "pounds of meat constant."

In this case, a weighed sample of 231 chipped stone items and 28 iron tools procured as much food at the Tionontate as over 17,000 chipped stone items did at the Juntunen site. Fifty-five sherds and 28 copper kettles would do the work of the vessels represented by over 100,000 sherds at the Juntunen site. The magnitude of technological change, with the corresponding freeing of fabrication and processing time, is readily apparent. The importance of decorative devices, already more than six times as frequent in absolute numbers at the Tionontate village, are more than 30 times as important with the application of the faunal weighting factor. This would indicate that much of the surplus generated by the free time which could be devoted to nonsubsistence activity was being channeled into social, ceremonial and aesthetic pursuits, reflected in the increase of nonutilitarian items.

This shift is even more dramatic when the burials at the Juntunen and Lasanen site are compared. The full skeletal analysis from the Juntunen site has never been published but the results have been summarized by both McPherron (1967) and Wilkinson (1971) with a discrepency of only one Juntunen Phase burial. Out of the 55 Juntunen Phase burials listed in Wilkinson, 42 percent are sub-adult and 58 percent are adult or "Transitional". Out of the 76 Lasanen burials studied by Clute (in Cleland, editor, 1971), 46 percent are sub-adult and 54 percent are adult. The mortality rates would appear to be about the same, suggesting again a similar subsistence base and life expectancy.

In terms of burial associations, the differences between the two sites are overwhelming. Out of the 55 Juntunen Phase burials, only four, representing five individuals, contained burial associations. One of these contained approximately 50 items in a medicine bundle: the second contained two small miniature vessels; a group of 75 marginella shells was found between two burials and a final association with a burial was "several shell" beads. In all, approximately 130 items were found with five individuals. Less than ten percent of the burials had grave goods and those with grave goods averaged 26 items per burials. There is an average of less than three items per burial for the entire site. About half of the items in the medicine bundle could be considered utilitarian so utilitarian items accounted for around 20 percent of the total burial assemblage.

At the Lasanen site, 22,160 items were found with the 54 individuals represented by the burials from the 1966 season. This gives an average of 410 items per individual, well over 130 times that found at the Juntunen site. Approximately one percent of these are purely aboriginal items; the rest are either trade goods or items manufactured aboriginally with the new European technology (wampum, catlinite beads, etc.). Actually, the quantities of purely aboriginal goods at the two sites do not vary all that much. The changes in mortuary association are primarily a result of the influx of European goods. It also might be

noted that less than one percent of the items from the Lansanen site are related to food procurement while 20 percent of those from the Juntunen site were.

It is the stated purpose of this paper to compare these sites in terms of economic theory. In practice, it has been necessary to apply approaches from the studies of primitive economics, historical economics and modern economics to the data sets. The pattern for primitive exchange and the meaning of such exchange in the late 17th century in the area has been described in a series of papers by G. A. Wright (1967, 1968) using models developed by Sahlins and Harding. He has suggested that trade took place through a balanced reciprocity; through gift giving. Actual bargaining was looked upon with disfavor and individual alliances, or trade partnerships, were maintained through balanced generousity. Goods would keep on flowing in one direction even though there was an imbalance in the other direction which could be either a bad year for furs or a delayed shipment of European trade goods. In spite of the hard life reported by the Jesuits, they seem to have spent more time in giving away rings and rosaries than in hunting and fishing, yet this "generosity" seems to have entitled them to a full share of the subsistence efforts of their parishioners and the reputation of being, in Shalins' term, "big men". The fact that trade partnerships continued after death might account for some of the veneration and respect shown Jacques Marquette by his parishioners who carried him back to St. Ignace two years after he had died.

There are two additional approaches that one might take to the trade system, each of which has something to say for the material cultural occurrences and subsequent historic events. First, the trade system soon reached a saturation point in terms of the economic utility of introduced goods. The traditional standard of living could be maintained much more easily with a minimum number of imported items but was not improved by the importation of large numbers of these items. Still, trade goods kept flowing into the area with no additional economic impact. They could be used to create more "big men" but even this had limited utility since there were a finite number of trade partnerships in any given region. Big men could continue to become bigger by distributing the trade items more widely throughout the society and this seems to have been what happened at the Lasanen site. In the last half of the 17th century, the saturation was so great that groups in favorable trade situations had to, quite literally, start burying wealth to get rid of it and there was the vast elaboration of the "feast of the dead" in some areas where social values could be maintained without inflating the exchange economy even further.

The new technological base, as the village site comparison indicated, gave even more free time to participate in the social activities inherent in the type of exchange system that was present. The economy on which this was based seems to have continued on into the 18th century and it was perhaps the new economic policies of the British, after the Treaty of Paris, that brought an end to it. One of the big complaints against the British, and later the Americans, was that they did not give gifts as the French had done. In short, they

refused to play the economic game in the traditional manner. The British with their ledger books and visable accumulations of imported goods for their own benefit bore the brunt of Pontiac's uprising at Michilimackinac in 1763 while the old French trade partners were spared.

Europe itself, however, was undergoing a major period of economic change and it is doubtful if the French could have maintained the traditional alliances any longer than the British. European society, at the end of the Middle Ages, has been described as a "traditional" economy (Heilbroner 1972). It was an exchange economy, only minimally monentized, based on mutual obligations of support. This traditional economy was being broken by trade expansion, increase in specie, and technological innovation. Traditional value standards were disintegrating and inflation was rampant.

The guild manufactures were giving way to the industrial entrepreneurs. Indeed, the old guild system with its production standards and quotas could not produce for the expanding foreign demand. The old guild standards, for member's protection, were abandoned on the guild level but were taken over by the emerging national states. The distribution system for wealth continued, at the same time, to be through traditional fuedal dues. A nationalistic economic policy, benefiting primarily the landed nobility who did not, for the most part, understand it, has been referred to as mercantilism by later economists. The extremes of mercantile regulation and the results of them are perhaps best exemplified by the economic policies of Colbert in France during the reign of Louis the XIV. The trade expansion and management in the Straits of Mackinac, with monopolistic control granted to a few by state decree and an emphasis on maintaining traditional modes of distribution, was an extension of Colbert's economic policy. The Lasanen site and Versailles are material manifestations of this policy. The American Revolution and the French Revolution, with Adam Smith's Wealth of Nations, were all results of the system.

Colbert's policies fell into disfavor in France by the end of the 17th century although some parts of them are continued in an attenuated form to this day. A less regulated, or more openly capitalistic economy developed more rapidly in England and even more rapidly in the New United States. Needless to say, the Indians of the Upper Great Lakes disliked each new group more intensely than the last. Where a mercantile economy could contribute to the traditional exchange system in the Straits region, a capitalistic economy was incompatable with it. A further disruption was that the traditional patterns of friendship and alliances depended on gift giving and the gifts used in exchange could now only be obtained through participation in a market economy. To get the goods to become a big man was to give up the opportunity of ever becomming one since a generous person could never stoop to bargaining. Adam Smith might say that this was a good way to do things but Herbert Spencer and Charles Darwin made it the only way to do things and the excesses of this system had to be pointed out by Karl Marx and Fredreich Engles. The trade partners of Louis Joliet became the exploited colonials who worked as the tools of the capitalists to keep the industrialized masses enslaved in Europe.

	JUNTUNEN		TIONONTATE	
	Number	Percent	Number	Percent
Sturgeon	888	47	268	79
Whitefish	262	14	28	8
Beaver	245	13	6	2
Dog	196	10	2	1
Loon	75	4	-	-
Walleye	61	3	1	<1
Passenger Pigeon	57	3	11	3
Snowshoe Hare	37	2	-	-
Lake Trout	36	2	22	7
Longnose Gar	29	2	-	-
TOTAL	1,886		338	
Total All Species	2,469		408	
% in Top 10	76		83	

TABLE 1. MOST FREQUENT SPECIES. Number of bones and relative frequency of the ten most common species at the Juntunen Site with similar occurrences at the Tionontate Village.

	JUNTUNEN					TIONONTATE			
	N Bones	N Ind.	Bones/ Inds.	$\bar{X}$ Lbs. Meat	% Meat	N Bones	Est. N Ind.	Total Meat	% Meat
Sturgeon	888	350	2.54	36	58	268	105	3780	95
Moose	10	7	1.43	400	13	-	-	-	-
Beaver	245	46	5.33	38.5	8	6	-	38.5	1
Bear	7	6	1.17	210	8	-	-	-	-
Whitefish	262	119	2.20	10.4	6	28	13	135	3
Dog	196	30	6.53	20	3	2	.3	7	<1
Lake Trout	36	36	1.00	14.4	2	22	22	316	7
Caribou	8	3	2.67	100	1	-	-	-	-
Deer	4	4	1.00	75	1	-	-	-	-
Porcupine	10	10	1.00	10.5	<1	-	-	-	-
Loon	75	20	3.75	4.9	<1	-	-	-	-
% Fish			66					99	
% Mammal			34					1	

TABLE 2. MOST IMPORTANT FOOD SPECIES. Comparison of the relative importance of the ten major food species at the Juntunen and Tionontate Village site.

	JUNTUNEN		TIONONTATE	
	N	%	N	%
Food Procurement and Processing				
Bone Tools	120		1	
Chipped Stone	17,261		42	
Iron Tools			5	
Utilitarian Copper	79		1	
TOTAL	17,460	15	49	20
Containers				
Pot sherds	101,477		10	
Kettle parts			5	
TOTAL	101,477	85	15	6
Ornamentation				
Beads & Pendants	27		168	
Tinkling cones			5	
Bone, shell and Wampum			7	
TOTAL	27	<1	180	74
TOTAL	118,964		244	

TABLE 3. ARTIFACT COMPARISON. Numbers and frequencies of some major artifact categories at the Juntunen and Tionontate site

A closer examination of this particular situation has indicated that historical, rather than classical, economic factors may be more pertinent. Still, some concepts from classical economics might help understand the local situation better. Trade goods functioned very much like money. They had an intrinsic value of limited utility, they were portable and had a recognized value which could be used to "purchase" other goods. Simon Newcomb (Soule 1952: 112) proposed the formula for a balanced money economy as MV=PT where M is the quantity of money, V the velocity of circulation, P the price level and T the number of transactions. In both the French mercantile and traditional Indian economy, the price is held as a stable factor. The fur trade increased the amount of money in circulation and the velocity of the transactions increased as well but nowhere near as rapidly as the number of transactions did. This caused an economic distortion which could only be remedied by decreasing the amount of money in circulation. In France, this was done with the enrichment of the nobility and in the Straits of Mackinac by burying the wealth almost as rapidly as it entered the society. This suggests that the classical mechanistic models may have some utility for the study of traditional exchange systems even if they need to be reinterpreted in light of the utility allowed within the exchange system itself.

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HISTORICAL SHIPWRECK ARCHAEOLOGY: NEW DEVELOPMENTS FROM THE LOWER FLORIDA KEYS

R. Duncan Mathewson

Ever since commercial salvage companies began to indiscriminately rip apart historical wrecks along the Florida coast, prefessional historians and archaeologists have been agonizing over the irreplaceable loss of immeasurable amounts of information of direct relevance to the colonization and commercial development of the New World. Despite continued efforts by State authorities to establish tighter controls, commercial companies are still actively working wrecks in Florida waters pretty well the way they were back in the early 1960's.

Traditionally there have been two ways that professional archaeologists have responded to this baneful situation. They could either bury their heads in the sand and try to ignore it all, hoping one day that the companies would somehow be forced to halt their operations, or they could accept it as an unfortuante reality and try to make the best out of a bad situation by trying to collect as much data as possible for at least a partial understanding of the sites being destroyed. Carl Clausen's 1965 report on the "Colored Beach wreck" of the 1715 fleet was the result of this latter approach.

As an independent archaeological consultant my primary concern over the last eight months has been to try to develop for Treasure Salvors, Incorporated, good archaeological techniques for the recovery of as much archaeological data as possible from the two sites presently being worked by this Company some forty miles off Key West.

The site which I have been principally concerned with is an early 17th century Spanish galleon believed by Treasure Salvors, Incorporated to be the "Nuestra Senora de Atocha" known to have been the Almiranta of the *Flota* which sank in this area of the Keys on 6 September 1622. This site is designated in the State site file as 8Mo141.

There is not the time here to describe at any great length the vast archaeological methodology and historical research potential of this site. This was briefly outlined elsewhere in a paper given recently at the 1974 Underwater Archaeological conference at Berkeley. (Mathewson, Murphy, and Spencer 1974).

The aspect which seems to have generated a plethora of verbiage within recent months is over the identity and dating of site 8Mo141. Of all the protagonists in this debate, none have had as full an opportunity to personally investigate and evaluate the purview of available documentation as Eugene Lyon has done in his consulting capacity as research historian for Treasure Salvors, Incorporated. Through his careful consideration of the documentation, the general locality of this site was identified which eventually led to its being pinpointed by an extensive magnetometer survey carried out by Bob Holloway. The subsequent dating and confirmed identification of this wreck site can now best be determined by internal evidence derived from the descriptive

interpretation of the artifactual material recovered with drawn comparison to the documentary evidence.

With this in mind, I should now like to briefly consider this question of archaeological dating. There are two main aspects relating to the dating of this site. First, does the recovered material indicate an early 17th century date and to what extent can it be associated with the loss of the 1622 *Flota?* And second, to what extent does the recovered artifactual material support the documentation that this site is the "Atocha" itself and not some other vessel associated with the *Flota* or the later salvage efforts?

The artifact inventory presently includes Ichtucknee Blue on Blue majolica, Middle style olive jars, arquesbuses, muskets, pedrero quartz cannon balls, swords and daggers, navigational instruments, personal jewelry, precious metal discs and chains, a copper ingot, indigo bales, almost 6,000 coins, and three inscribed silver ingots, all interspersed among good sized ballast aligned on an iron anchor reported to measure some twenty feet long. I think that any objective person vaguely familiar with this material and the archaeology of the 16th and 17th century Spanish period in the New World cannot fail but concur that what one is dealing with here is a major ship of the Spanish *Flota* dating to the early 17th century. The numismatic evidence indicates the presence of coins minted from three different New World mints during the reigns of Phillip II, Phillip III, and Phillip IV. As Phillip IV ascended the throne in 1621, we know that whatever the identity of this wrecksite is, it cannot date any earlier than the beginning of his reign. Therefore, until there is archaeological evidence to the contrary or until more coins are cleaned and identified to confirm this numismatic *terminus ante Quem,* it is safe to conclude that this artifact assemblage is derived from the sinking of one of the major ships in the 1622 *Flota.*

Of the three main ships known to have sunk in this Flota, the "Rosario" was the first to be positively identified some years ago situated some thirty miles towards the west just off the Dry Tortugas. The other two ships, the "Atocha" and her sister ship, the "Santa Margarita" are known to have sunk within three miles or so of each other, and it is this fact which has largely caused some hesitation over the complete acceptance at this time of the identity of the site 8Mo141 as being the "Atocha".

What is clearly needed at this stage is more archaeological evidence in an effort to categorically confirm the identity of this wreck site as that of the "Atocha" and not of the "Margarita". The most logical way to do this is to locate the primary ballast deposit and its associated finds by adopting systematic archaeological recovery procedures. Only in this way can archaeological evidence be fully utilized in support of the documentary evidence and corroborating data to confirm the identity of this site beyond all reasonable doubt.

Archaeological Recovery

In developing a new procedural model for the working of site 8Mo141, certain basic distinctions have had to be made between what is meant by

Salvage, Archaeological Recovery and Excavation as contrasting processes. These three varying operational processes are all based upon different objectives and methodology. In the case of Salvage on the one hand, there is usually little or no effort made to define archaeological objectives or to collect and record archaeological data systematically. On the other hand, the process of excavation demands a fully developed theoretical basis upon which a research design is formulated for the total cultural explication of the site. Archaeological recovery falls somewhere in the middle of these two extremes.

The success or failure of Archaeological recovery as an accepted scientific underwater procedure would seem to be dependent upon the extent to which the following conditions may be realized:

1) Conceptualization of the main archaeological problems presented by the site.

2) Definition of intra-site variability through the delimiting of the horizontal and stratigraphical configuration of the artifact scatter pattern.

3) Planning of all major structures and features.

4) Provenance recording and mapping of all major artifact clusters by a horizontal control of at least one metre.

5) Systemic recording and analysis of data derived from the artifacts.

6) Publication of the archaeological data as a step towards cultural and historical interpretation.

How far these conditions will be met by the archaeological work on site 8Mo141 is of course impossible to say at this time. Some of these research procedures will be more difficult to accomplish than others. Though some progress has already been made towards achieving these goals, a great deal more has to be done before the full archaeological potential of this site can be properly realized through adopting the archaeological procedures as outlined above.

Research Strategy

The formulation of a productive research design based upon theoretical and technological innovations in shallow water wreck site archaeology must be a pre-requisite to the development of strategies for the systematic acquisition and analysis of data.

Redman's (1973: 61) recent paper on multistage archaeological field work applies equally well to underwater sites as it does to land sites when he says that "Field research designs, analytical procedures and explanatory perspectives should reflect the researcher's goals as well as his conception of the nature of archaeological data".

With this in mind I would like to present some idea of what is presently planned for working the 8Mo141 site. I will now briefly outline

some of the main methodological procedures and research objectives which compose the research strategy for the diving season this summer.

For convenience, the different aspects of this research design are broken down into the following four categories: Site survey, Data Recovery, Environmental research, and Student Training Programme. As time is short, there will not be any discussion here of the analysis of the material itself.

Site Survey

Several varying types of site surveys are being considered in an effort to define intra-site variability and the boundaries of the cultural deposits. Airphotography will continue to be used as a mapping aid along with blue insensitive film for the identification of bottom features in the deeper water. Sub-bottom profiling and Side-scanning sonar are being considered as alternative procedures for the identification of the primary ballast deposits. Along with operating visual search patterns and random excavation sampling, there are plans to run gridded magnetometer surveys over three contiguous areas of the site.

Contrary to the magnetometer techniques used in surveying some thirty square miles in searching for the site, these intensive surveys will cover a much smaller area and will be carried out within tightly controlled grid systems in order to delimit the primary artifact scatter pattern prior to extensive bottom excavation disturbance. These intra-site magnetometer surveys will be generally analogous to the Type II survey within Rupee's (1966) survey classification and will be conducted to provide additional information in conjunction with the planned recovery programme.

The main objective of these magnetometer surveys will be to construct anomaly contour density maps which will define localized concentrations of metallic objects within the total artifact configuration scatter. Hopefully there will be an opportunity to utilize the data derived from these surveys to develop hypotheses based upon observed correlations between the registered anomaly read-outs and the specific corresponding sub-bottom artifacts.

In addition plans are being made to have the magnetometer head run at different depths under controlled conditions over known ferrous and non-ferrous objects in an effort to collect empirical data as to what intensity magnetic anomalies can be expected from different types of metallic artifacts *in situ* within varying depositional conditions. In this way it is hoped that a start can be made to collect data upon which more reasonably accurate deductions might be made in the future as to the size and nature of sub-bottom metallic artifacts.

Data Recovery

Plans have been made to operate three, two-man diving teams as the nucleous of the data recovery programme. As far as possible this group will work as a unit and will be primarily responsible for the

mapping, recording, and recovery of the main archaeological deposits. Mapping and surveying procedures are now being worked out which hopefully will allow for the recording of contexual associations and artifact provenance to within one metre in major structures and features. Primary interest will be directed at defining the artifact concentrations within the area of the main ballast deposits once they are delimited.

Archaeological photography will be employed whenever possible for rapid artifact authentication *in situ*. Photo-mosaic and object photogrammetry techniques similar to the procedures developed on Mediterranean sites by Green (1971) and his colleagues will be adapted for the rapid mapping of localized artifact concentrations and ballast deposits.

Horizontal control on the sea-bed will be maintained primarily through the use of a six metre square pipe grid internally sub-divided into fifty centimeter squares; this grid will be assembled on the bottom and will be shifted as required. It is anticipated that for the most part the archaeological deposits will be mapped by triangulation and with an alidade and plane table. Attempts will be made to record stratigraphic sections through major archaeological features with as much vertical control as conditions permit.

During excavation with the "Mail boxes" the location of all holes will be plotted from perferrably three buoy control points by a Brunton Compass. Efforts will be made to recover all artifacts and to record their general stratigraphic context within each hole. Previous experimentation on the site has verified that quantifiable data in the form of observed presence and/or absence of certain classes of artifacts at different depths within the overburden produce stratigraphic information which is assisting in the interpretation of the archaeological deposits. If enough artifactual data within each hole are collected, it might be possible to reconstruct a three dimensional spatial configuration of the archaeological deposits throughout much of the site.

Environmental Research

For some time now it has become increasingly obvious that some of the archaeological questions posed by this site might best be answered by an inter-disciplinary approach to the study of major environmental factors involving the hydrological, biological, and geological aspects affecting this site.

In order to determine the degree to which the dispersion of the ballast pile and artifactual material has been influenced by wave action and the prevailing currents, an hydrologist with past experience in the problems of underwater artifact dispersion has accepted an invitation to work on the 8Mo141 site sometime this summer. Hopefully, enough pertinent data will be collected to allow for an explanatory hypothesis on the effect of hydrological factors in the scatter of ship wreck cultural material subsequent to its initial break-up.

In addition preliminary plans have been considered to gather hydrological data on the mass movement of water and sediment under varying known conditions during the digging process of the "Mail boxes". One

of the main archaeological problems in Historical wreck archaeology which must be squarely faced in the future is the formulation of a system for greater precision and control of the "Mail boxes" which will better ensure that the lighter and more fragile objects are not liable to damage during the excavation procedure.

Land archaeologists have long recognized that under certian conditions vegetation patterns can often reflect sub-surface archaeological deposits. Though some initial observations on bottom sea-grasses have been made by Martin Meylach (1971) and other commercial salvagers of the 1733 fleet, systematic data collection has never been attempted for the investigation of what correlations there may be between the distribution and growth patterns of different sea grass species and sub-bottom archaeological deposits.

Several marine biologists and environmentalists have already expressed an interest in participating in this summer's research programme, in an endeavor to collect data on the sea-grasses and other aspects of the four different micro eco-systems encompassed by this site.

Perhaps the most important aspect of environmental research of direct relevance to the explication of the archaeological deposits is the study of the bottom sediments and reef formations. At the moment an effort is being made to locate a marine sedimentologist who would be interested in conducting such a study.

Preliminary stratigraphic data have suggested that in the "Quicksands" area of the site the overburden consists of an upper zone of fine sand and shell fragments underlain by coarser sands which are interspersed with dark silty-clay lenses; these lenses appear to vary considerably in thickness and occasionally occur as a distinct clayey layer resting upon bedrock. Quite clearly the overburden in this part of the site is differentiated and cannot be considered homogenious.

It is believed that a close study of these sediments and their associated micro-fauna might provide data which will go some ways towards explaining to what extent these bottom deposits have effected the vertical and horizontal artifact dispersion through time. Observations have clearly suggested that there is a vertical sorting throughout the overburden of the artifacts according to their density; this results in the downward movement of the heavier objects which have a tendacy to accumulate in the lower part of the overburden and in the surface irregularities of the bedrock.

There has not yet been any serious examination of these surface irregularities in the bedrock. Perhaps they are solution hollows in the Miami Oolitic limestone resulting from subaerial weathering during a period of low sea level of post Sangamon age.

The sub-bottom profile done by E. G. & G. International produced a feature which first suggested that it might be part of the main ballast pile. However, corresponding test holes did not produce any ballast. It is possible that this feature represents either a prominient slope of the bedrock itself or a post-Sangamon fossil reef line. If this feature does represent a late pleistocene reef line, it is possible that

the localized accumulation of dense artifacts including some 5,000 odd coins and three silver ingots might represent the concentration of heavier objects caught in between the raised ridge lines of two distinct reef formations. Only through the geological study of the bedrock and associated reefs can the validity of this and other hypothesis ever be tested empirically.

This inter-disciplinary research approach is being attempted in an effort to investigate for the first time the relevance of collecting environmental data for the interpretation of shallow water historical wreck sites. Quite obviously, the success of such an approach is fully dependent upon how much outside interest can be elicited so that professional inquiries of the type outlined above might be carried out. Hopefully some progress will be made towards extracting marine environmental data for the interpretation of underwater historical sites in the same way that archaeologists have come to rely over the years on environmental interpretation of terrestrial sites.

Student Training Programme

A student training programme has already been initiated in an effort to obtain additional assistance in the artifact analysis while at the same time to offer an opportunity for interested students to gain experience in the recording and cataloging of artifactual material from historical wreck sites.

At the moment, a history student from Florida International University is assisting in compiling the photographic record of the artifacts for class room credit. Arrangements are now being made to have a student in marine environmental science from the Florida Keys Community College begin to do preliminary research on the bottom grasses occurring on the site.

In preparation for this coming diving season plans are now being made to expand this training programme by making it possible for anthropology students with diving experience to participate in the mapping and archaeological recovery of the material and its analysis. Though some student inquiries have been received from out of state, priority will be given to qualified students from Anthropology departments in Florida universities.

The practicality of this research programme outlined here can only be judged by results and not simply intent. It is hoped, however, that enough progress will be made on the 8Mo141 site to point towards the development of a more precise scientific approach in future commercial salvage operations on historical wreck sites along the Florida coasts.

Acknowledgements:

In conclusion I would like to take this opportunity to acknowledge the continuing cooperation I am receiving from State archaeological colleagues in the Division of Archives, History, and Records Management.

In particular I would like to thank Larry Murphy and Bill Spencer for their on-going dialogue and discussion of many of the problems presented in constructing a workable research programme for archaeological recovery on the 8Mo141 site.

I should also like to thank members of Treasure Salvors, Incorporated, particularly Mel Fisher for this opportunity to develop underwater archaeology; Bleth McHaley for her assistance and unhesitant support for the adaption of systematic archaeological recovery techniques; Don Kincaid for sharing with me his photographic expertise and his marine knowledge; Marjory "T" Hargreaves for her continued willingness to discuss with me theoretical and practical problems arising out of operating a magnetometer survey; and the Captains and crew of the recovery vessels for their understanding and patience.

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ARTIFACTS OF THE ADELANTADO

Jeffrey P. Brain

With a considerable portion of the plunder of Peru at his disposal, Hernando De Soto, Adelantado of Florida, could afford the best as he set about assembling an army of conquistadores for the exploration of his newly acquired governorship. So when this army traversed the southeastern United States in 1539-1543, it came as a well-equipped expedition. But ultimately, time and catastrophe took their toll and this same expedition fled a band of beggars, leaving more than their leader (and half their number) behind. It could thus be expected that, even though this event is barely retrievable in the immensity of time and space involved, some artifactual evidence of its existence should occasionally surface.

In keeping with the military character of the expedition, a number of swords, halberds, pieces of chain mail, even a cannon, have been reported from the states of Florida, Georgia, Alabama and Mississippi, and have been touted as "De Soto relics." Few, if any, of these artifacts have been authenticated beyond doubt, due to questions concerning exact provenience or cultural ascription. In fact, most of this assorted military hardware usually only turns out to be of more recent French, English, or American manufacture. Although some indisputable articles may well exist, their actual rarity may perhaps be explained by the deleterious effects of the southeastern climate upon the preservation of iron and steel, and the documented conservation of these very materials by the army, itself, while it gave up nearly everything else. Therefore, as pointed out twenty years ago by John Goggin (1954: 161), it may be that the De Soto entrada might be traced with greater success by other, more mundane, classes of artifacts. It is the purpose of this paper to suggest such alternatives.

It was the policy of the Spanish explorers and conquistadores, in their confrontations with the American native, to temper force with largesse. Gifts were often given to allay suspicion, excite individual greed, or otherwise aid the particular Spanish objectives. The composition of a typical gift kit is indicated by chance references in many contemporary chronicles. Even from the very beginning, it is recorded that on October 12, 1492, Columbus handed out "red caps, glass beads. . .and hawk's bells" (Landström 1966:68). These remained the standard items of gift and trade throughout that first voyage, although the preference of the natives for the bells resulted in their being selected for the second voyage as the principal Spanish barter for gold and other valuables: "They would give nothing for beads, but they gave everything they had for hawks's bells, they did not want anything else" (*ibid.*, 145, quoting the official historian, Las Casas).

When the conquistadores began to penetrate the mainland, they took along similar trinkets. On his first march to Tenochtitlan in 1520, Cortez dispensed little bells and beads to various personnages along the way (Diaz del Castillo 1956: 41). And, slightly later,

De Soto's contemporary in the Southwest, Coronado, was even more generous: "The general gave them some glass dishes, and a number of pearls [beads?] and little bells which they prized highly, because these were things they had never seen" (Winship 1904: 38). Upon these precedents of the first explorers, the standard gift kit was established, although minor variations sometimes existed among secondary artifacts according to regional or cultural preferences. Thus, from later 16th century and early 17th century accounts of Spanish activities in the Southwest we learn that:

> Spanish explorers and missionaries to the Southwest sometimes distributed metal bells, presumably made in Spain. At Cochiti...the Espejo expedition of 1582-83 traded sleight bells and small iron articles for buffalo hides. Fray Estevan de Perea, reporting upon a visit to the Hopi pueblos in 1629, remarks that the priests gave the Indians'some trinkets which they had brought--such as hawk's bells, beads, hatchets and knives.' (Judd 1954: 110)

Among the experiences of Fray Alonzo de Benavides in the 1600's:

> Some Indians took me to their rancheria and [I] regaled them with bells, rattles, feathers, and beads of different colors, for the Catholic king orders that we be furnished with things of this kind so that we may convert them peacefully and that they will gladly hear the word of the Lord from us. (Hodge, Hammond and Rey 1945: 53)

And undoubtedly still in pursuit of these same objectives, it is recorded that supplies for twelve Franciscan friars sent to New Mexico in 1624 included the following gifts for the natives: "30 pesos of macaw feathers, one gross of little bells, and 12 bundles of glass beads" (*ibid.*, 119).

The common elements in all these accounts, and thus forming the core gift kit, are the "little bells and beads." The same core is evident in the earliest major Spanish entrada into the Southeast, that of Panfilo de Narvaez. While passing through Florida in 1528, as reported by the intrepid Cabeza de Vaca, "We gave him beads and little bells and other trinkets..." and, "They came, and we tried to quiet them the best we could and save ourselves, giving them beads and bells...they thought themselves very rich with the little bells and beads we gave them" (Bandelier and Bandelier 1922: 22: 56). Twelve years later De Soto distributed beads among the Indians of Alabama, as we shall have occasion to reference further below, but whether he also brought bells is not specifically mentioned in the narratives. However, if custom prevailed we may rather expect that he did, and there is now artifactual evidence to support such a likelihood.

A recent analysis of metal bells traded by the French and English during the 18th century resulted in the recognition of a number of

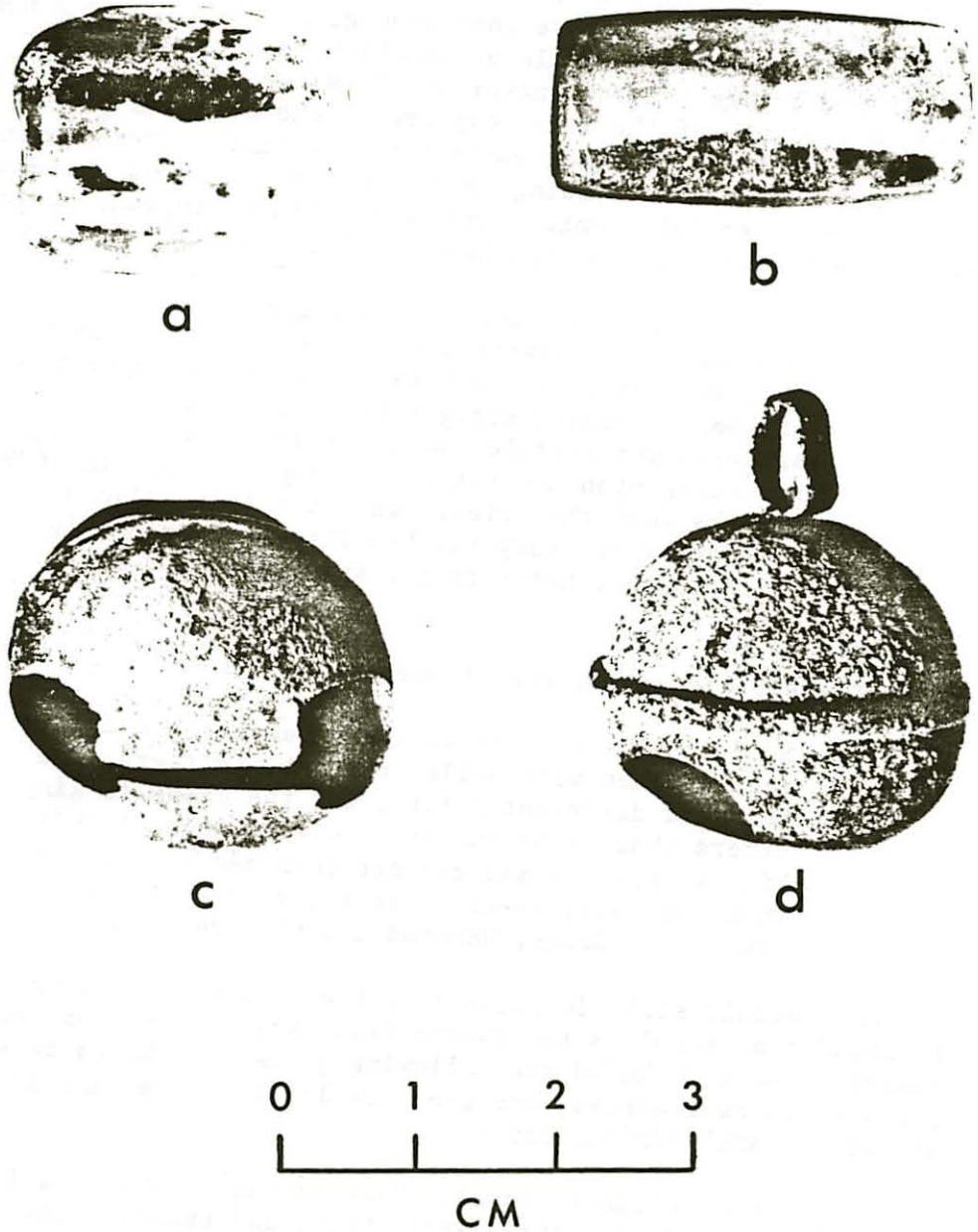

Figure 1. European artifacts, which are tentatively identified as being 16th century Spanish in origin, from the Oliver site in Coahoma County, Mississippi.
a-b. Cut rock crystal (quartz) beads. These are relatively simple examples with six and four facets respectively. The considerable wear sustained by these beads suggests that there may have been a slight interval between acquisition and final deposition.
c-d. Two examples of the sheet brass "Clarksdale" bell. Note the prominent equatorial seam, and the wide strap loop attachment.

(Photos by Alan Toth)

different types distinguished according to material, manufacture, and modes of attachment (Brown 1971). Considerable variation was observed within most of these types, but one stood out as being very uniform, as well as very different, from the other types. This bell, which we have named the "Clarksdale" bell, is illustrated in figure 1. The most significant feature of the Clarksdale bell is that it is made of sheet brass, all other types being either sheet copper or cast brass. Furthermore, in manufacture, the two hemispheres are joined by an equatorial seam that was folded, crimped, and soldered. Finally, the loop attachment is a strap of brass averaging 5mm. in width. None of the other 18th century bells have a loop like this. Other features of the Clarksdale bell are an overall diameter of ca. 3 cm., and two large holes in the bottom joined by a single cross-cut. Some later 18th - 19th century trade bells are quite similar in size and general form, but differ in being made of sheet copper, and having a simpler equatorial seam and narrow wire loops (*e.g.*, Wedel 1959: pl. 7f).

Once distinguished, the proveniences of the known Clarksdale bells in North America were then plotted and the distribution was found to be quite extraordinary in comparison to the other types. While most types were clustered in regional pockets corresponding to the general areas of colonial control exerted by the various European powers during the 18th century, the Clarksdale bell manifested a rather dramatic and quite unique distribution across the entire Southeast from Florida to Arkansas (fig. 2).

To date, six sites have produced examples of the Clarksdale bell, and most of these proveniences demonstrate very interesting historical aspects:

Dunn's Creek.

The Indian burials from this Florida mound have been dated to the 16th century period by Hale Smith (1956: 13-15). The Clarksdale bell was one of many types of European artifacts with diagnostic value.

Citico.

This exciting eastern Tennessee site is very important for our interpretations, as the four bells were the only European artifacts found among hundreds of burials beneath an otherwise "prehistoric" Middle Mississippian mound (Thomas 1894: 373-376). Although the site, itself, also had a later 18th century historic Cherokee occupation, the mound and burials within it seem definitely to have been a product of the Mississippian Dallas culture only (King, *et al* 1969: 53).

Satartia.

A partial bell was found on the surface of this site of unknown cultural affiliation in the Yazoo Basin region of Mississippi (Lower Mississippi Survey files, Peabody Museum, Harvard). It may be noted that Satartia is not far from the location of Sacchuma which was raided by De Soto at the behest of the Chicaca in 1540 (Swanton 1946: 105-106).

Clarksdale.

At least three bells were taken from a mound at this site before its destruction many years ago (Brown 1926: 358: fig. 352--only two of

the three illustrated are Clarksdale bells[1]). Clarksdale has been identified as the location of the first village of Quizquiz encountered by De Soto and his army in May 1541 (Brain, *et al* 1973).

Oliver.

De Soto remained in the vicinity of Quizquiz for a month while constructing barges with which to cross the Mississippi River. Only ten miles south of Clarksdale is the Oliver site, which had both late prehistoric and historic (late 17th - early 18th century) occupations. Because of the latter, the two Clarksdale bells found with burials in the principal mound (Peabody 1904) were assigned to the period of early French contact (Belmont 1961: 150). However, a reanalysis of the burial data suggests an intriguing alternative. While there certainly are French period burials in the mound, as well as strictly prehistoric, the two burials which had the Clarksdale bells in association cannot be placed confidently in either group. In one case, this is because the bell is the only association. However, it is the second burial which is especially interesting, for it is quite unique. In addition to the bell, there were two beads of quartz and a native pot. The pot was not a local product, but was the sole vessel from Oliver of Fatherland Incised, a Natchezan type which must have been imported from further south (Peabody 1904: pl. 14). Fatherland Incised was still in vogue among the historic Natchez Indians of the early 18th century, but it was also a type with a respectable antiquity stretching back into prehistory. On formal and stylistic grounds it is possible to assign this vessel with considerable confidence to the 16th or 17th century. The association of the quartz beads with these special artifacts shall be considered further below.

Parkin.

A final example of a Clarksdale bell was found with a burial at the Parkin site in northeast Arkansas (Davis 1966: 11: fig. 5). Parkin is a "late prehistoric" Middle Mississippian site with no other known historic artifacts[2]. The four native vessels which also accompanied the same burial are of types which may be identified as contemporary with the De Soto dateline (Brain, et al 1973: table 1 fig. 2).

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[1]It has been reported, but not documented, that some years ago the collector sent these bells to Spain, where they were duly authenticated as having been made in Seville during the 16th century. We have no independent corroboration at this time. These same bells are presently on display at the Winterville Museum near Greenville, Mississippi.

[2]A bead found by the Arkansas Archeological Survey on the surface of the site in 1966 was brought to the attention of the author in January 1975, too late for inclusion in this article. This bead is a "faceted chevron" of a type which is known to occur with other Spanish contact beads (e.g., Nueva Cadiz) from mid-16th century Indian graves in Peru. The only other certain provenience we have for the type in the interior of the Southeast is a single example from a site near Chattanooga, Tennessee (Marvin Smith, pers. comm. 1/15/75), directly on the reconstructed De Soto route (see fig. 2).

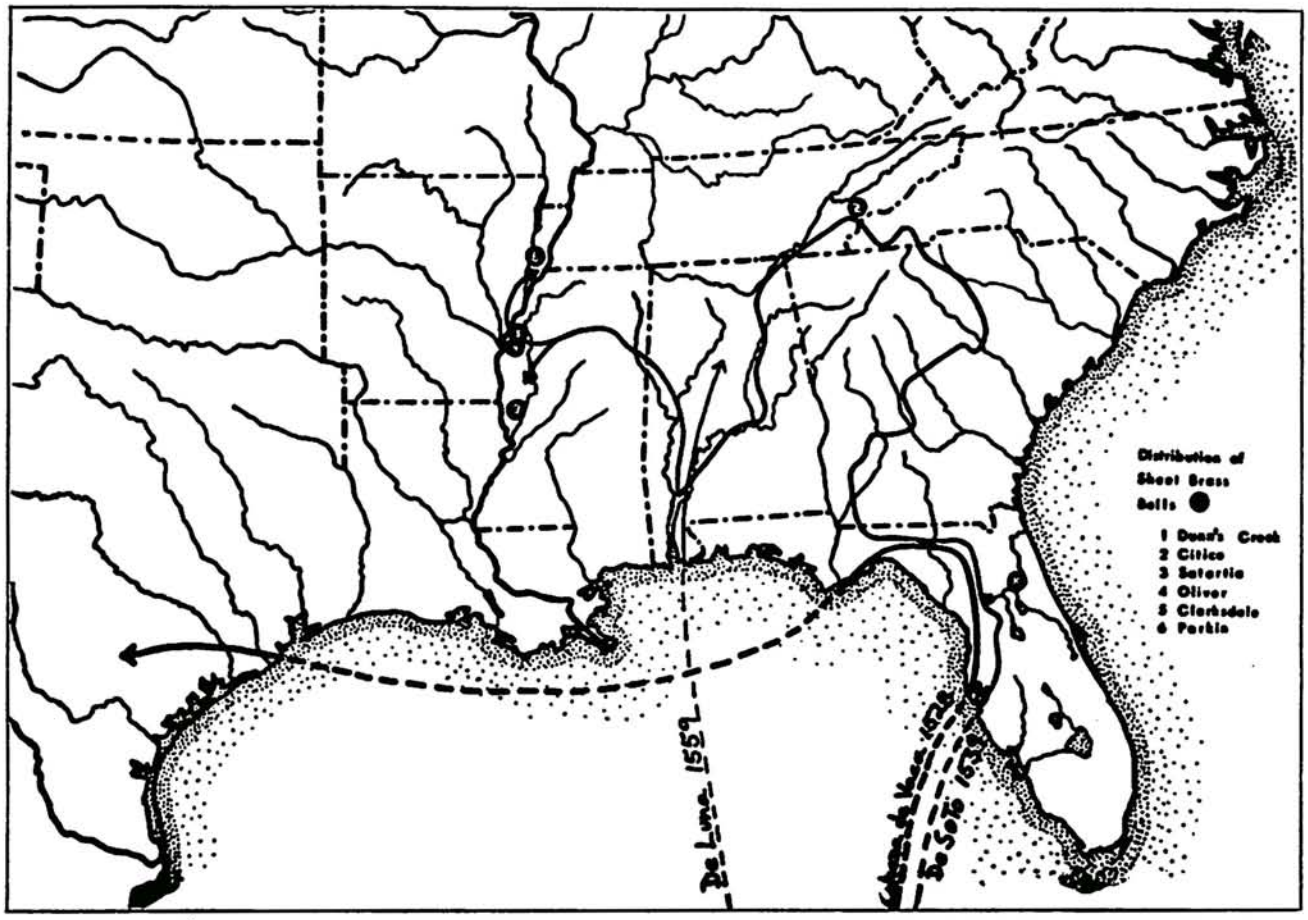

Figure 2. Distribution of the Clarksdale bell and approximate routes of the three principal Spanish expeditions in the Southeast during the 16th century.

(Photo by Alan Toth)

As plotted in figure 2, herin, the locations of these six sites fall remarkably close to the route of De Soto reconstructed by the De Soto Commission (Swanton 1939--slightly modified at the Mississippi River as a result of our own researches, op. cit.). In fact, granting that the Clarksdale bells are indeed 16th century artifacts, the coincidence clearly lies only with the De Soto expedition. For, while the earlyier Narvaez expedition could have accounted for the Dunn's Creek bell, the two routes diverged sharply after leaving Florida, the doomed Narvaez expedition actually taking to water and by-passing the rest of the Southeast proper. The only other major 16th century expedition (and the last significant European venture into the interior of the Southeast for more than a century) was that of Tristan de Luna in 1559-1560. However, as is clearly evident in figure 2, the region penetrated by de Luna is, at this writing, conspicuously devoid of Clarksdale bells. Thus, the identification seems secure with De Soto. The fact that proveniences are not always precisely on the conjectured route suggests areas of possible revision. Of course, it must also be considered that such highly desired and portable ofjects would stray some from the points of contact. With this caveat, it may be that the Clarksdale bell will provide a firm key with which to trace De Soto's route in the Southeast.

The Clarksdale bell may not be the only reliable key. With somewhat less confidence, I should like to suggest several other artifacts that may also be attributable to De Soto, but are not necessarily diagnostic as they have broader distributions in time and space. Nevertheless, where they lie along the proposed route, within tolerable limits, the case may be made, and in certain situations the case becomes a near certainty.

The artifacts to be considered all fall into a single class: beads. As has been noted, beads and bells were the standard items of gift and trade used by the Spanish explorers and conquistadores. And there is a specific reference in the De Soto narratives to this fact regarding beads. The Gentleman of Elvas recorded that when the army entered the province of Tuscaloosa, in present-day Alabama, "the Governor received and parted with the messenger graciously, giving him beads (which by the Indians are not much esteemed) and other articles, that he should take them to his lord" (Bourne 1904: 87)[3]. There is no indication as to what type of bead may have been given, although the most common category then, as later, was glass. The most diagnostic types of glass beads used by the Spanish in the 16th century, and found throughout their realms of activity in the western hemisphere, are the Nueva Cadis Plain and Nueva Cadiz Twisted (Fairbanks 1968). In the Southeast, however, these beads have been reported so far only from Florida and the Gulf Coast, although a single bead from the otherwise prehistoric Rhodes site in northeastern Arkansas may be a Nueva Cadiz (Moore 1911: 415--this bead is not illustrated, but the

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[3]It is tantalizing to think what the "other articles" might have been, although, of course, I should like to conjecture that they may have been bells--an item far more "esteemed" as Columbus had discovered.

general description fits; the Rhodes site was certainly occupied in the 16th century, and moreover was located within the province of Pacaha visited by De Soto in the summer of 1541 (Brain, et al 1973).

Another type of bead which seems to have achieved considerable popularity among the Spanish, themselves, in the 16th century was made out of cut rock crystal (quartz). These beads are highly variable in form and size, but their material makes them very distinctive (Fairbanks 1968). Cut crystal beads seem to be rather narrowly restricted to areas of Spanish activity in the Caribbean and Gulf Coastal regions, with the highest concentration being in Florida, although some have been found as far as Virginia (Bushnell 1937: 27-35; pl. 1). Curiously, Fairbanks reports that cut crystal beads are not found on sites with the Nueva Cadiz types, which suggests that different modes of interaction may be represented. Whatever the case, the fact is of no little interest in the light of our data: at the Oliver site, already discussed above, the second Clarksdale bell was found with the burial which also had two cut crystal beads as the only other European artifacts in association. These beads are relatively simple faceted examples (fig. 1), but similar ones have been found in Florida (Fairbanks, pers. comm.). In any case, these are the first of any kind yet recognized so deep in the interior, and that special burial at Oliver takes on even more particular significance.

But that burial is not alone in presenting possible artifactual evidence for the presence of De Soto. In addition to the burial with the other bell, there was a third burial at Oliver with a single association: a most unique bracelet of beads. These beads (and a pendant) are of turquoise, the only known occurence of this material from an Indian site east of the Mississippi River. Since the beads are identical to those characteristic of late prehistoric Pueblo craftsmanship in the Southwest (*e.g.*, Judd 1954: pl. 22), it had been thought that a single instance of aboriginal trade between these two regions was demonstrated (Belmont 1961). But the circumstances of the find, and presence of the other special artifacts, suggests alternative hypotheses: *viz.*, that the beads may have been brought in by a member of the De Soto expedition, someone who had had prior experience in Mexico or even the Southwest, itself. It is also conceivable, although perhaps less likely, that the turquoise could even have been a part of the official gift kit of the expedition. The 16th century chronicler Obregón recommended that gifts for natives include turquoise "to exchange for provisions and other things that may be found in new lands" (Hammond and Rey 1928: 237).

In this paper, I have attempted to demonstrate that little bells and beads formed the core of the gift kit used by the early Spanish explorers and conquistadores of the 16th century to dazzle, motivate, sometimes placate, the natives of the Americas. Moreover, it has been suggested that certain types of these artifacts may be diagnostic of a more closely defined time period or even particular event in a given context. In this instance, it is hoped that these and other artifacts will provide more exact clues to the perambulations of De Soto in the Southeast.

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CHEROKEE STRUCTURE CHANGE

Richard Rowand Polhemus

INTRODUCTION

A review of ethnographic source material concerning Cherokee structures suggests a sequence of development implementing several basic changes in building techniques, particularly when considered in the light of recent archeological work on a number of known Cherokee settlements. This paper is a review of these changes and a consideration of other basic structure types present on Cherokee sites. Several structure types described in ethnographic accounts have yet to be identified in the excavated portions of these Cherokee settlements and pose somewhat of a problem for the archeologist. The ethnographic sources available provide a cross check on data retrieval by the archeologist in the field and should lead to a further degree of caution in cultural interpretations.

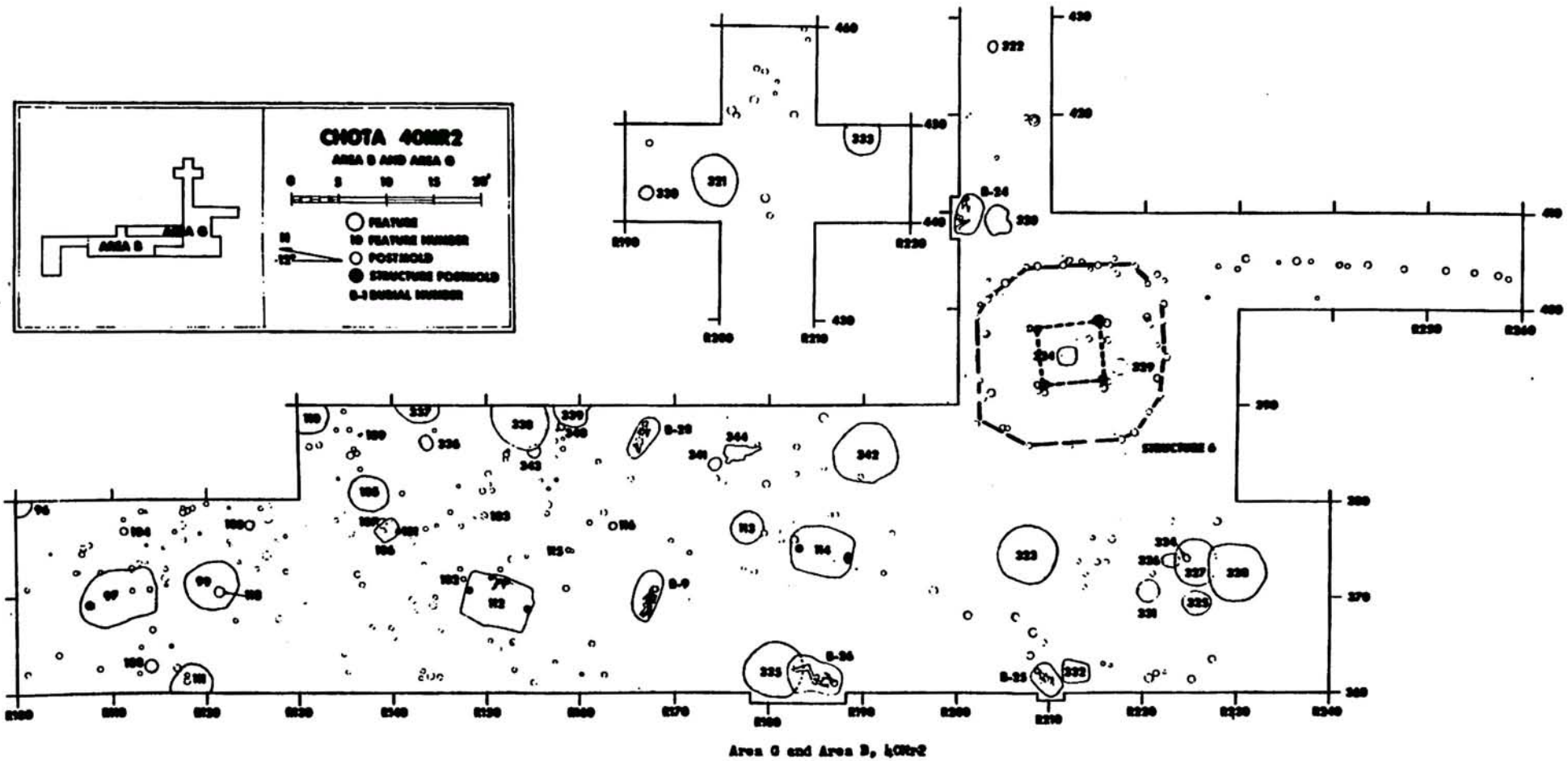
Archeological data utilized for comparison with ethnographic source material is on file at the McClung Museum, the University of Tennessee, Knoxville, Tennessee. This data is the result of excavations on both the Hiwassee and Little Tennessee Rivers in east Tennessee over a period of many years. Data on several structures excavated by John Combes on the Cherokee settlement of Toxaway (38OC3) was provided by the Institute of Archeology and Anthropology, the University of South Carolina, Columbia, South Carolina. Ethnographic sources found useful include the Payne and Draper Manuscripts as well as published sources such as Adair, DeBrahm, and Timberlake. All sources consulted are listed in the bibliography. Those marked "*" contain useful data on structures.

Ethnographic data on structures, when ordered by date of observation and classified by form of structure such as "townhouse", "hot-house", "summer house", and "corn house", provides a sequence of construction techniques and of relative size through time. Structural groupings soon became apparent on two planes throughout the eighteenth century; public structures consisting of the town house and the portico, and private structures consisting of winter or hot houses, summer houses, and corn houses. Each class of structure will be considered in the light of both ethnographic and archeological data.

HOT-HOUSE

The structure most frequently described during the first three quarters of the eighteenth century is similar in many respects to that built by several other southeastern groups. This form of structure, best described by James Adair and Gerard DeBrahm, was of circular form and contained four main roof supports. Structure patterns excavated at the Chota Site (40MR2, Fig. 1) and the Ocowee Site (2PK1) in an eighteenth century context verify this description. Adair describes this form of structure as follows:

> To raise these, they fix deep in the ground, a sufficient number of strong forked pots, at a proportional distance, in a circular form, all of an equal height,



Area C and Area D, 40MR2

Figure 1

> about five or six feet above the surface of the ground: above these, they tie very securely large pieces of the heart of white oak, which are of a tough flexible nature, interweaving this orbit, from top to bottom, with pieces of the same, or the like timber. Then, in the middle of the fabric they fix very deep in the ground, four large pine posts, in a quadrangular form, notched a-top, on which they lay a number of heavy logs, let into each other, and rounding gradually to the top. Above this huge pile, to the very top, they lay a number of long dry poles, all properly notched, to keep strong hold of the under-posts and wall plate. They then weave them thick with their split saplings, and daub them all over about six or seven inches thick with tough clay, well mixt with withered grass; when this cement is half dried, they thatch the house with the longist sort of dry grass that their land produces (Adair 1930: 449-450).

William Gerard DeBrahm also describes this form of structure:

> Two or more Families join together in building a hot-house, about 30 feet Diameter, and 15 feet high, in the form of a Cone, with Poles and thatched, without any Air-hole, except a small Door about 3 feet high and 18 inches wide. In the Center of the hot-house they burn fire of well seasoned dry-wood; round the inside are Bedsteads fixed to the Studs, which support the Middle of each Post; these houses they resort to with their Children in the Winter Nights. Upon the same plan of these houses (only on a greater Diameter and perpendicular) their Town Houses are built... (DeBrahm 1971: 110).

TOWN HOUSE

The town house, as suggested by DeBrahm, was similar in many respects to the hot-house described above. Archeological and ethnographic sources both present several differences, however; the number of primary roof supports being the major one. Ethnographic sources indicate seven or eight primary roof supports when numbers are given and the two superimposed townhouses excavated at Chota contained four and eight roof supports respectively. The number of roof supports apparently has no bearing on the seating pattern of the seven clans, or there may have been a different number of clans than the seven historically recognized. Ethnographic sources also place the door or entry on the east side of the townhouse, whereas the entry exposed during excavation of the second Chota townhouse

Fiaure 2

is located on the south or down river side (Fig. 2). William Bartram's description differs from the Chota townhouses in that there are two ranges of primary roof supports and a large centerpost holding up the center of the structure. It is possible that the centerpost is a later addition to support a roof weakened with age. Bartram describes the Cowee townhouse in the following way:

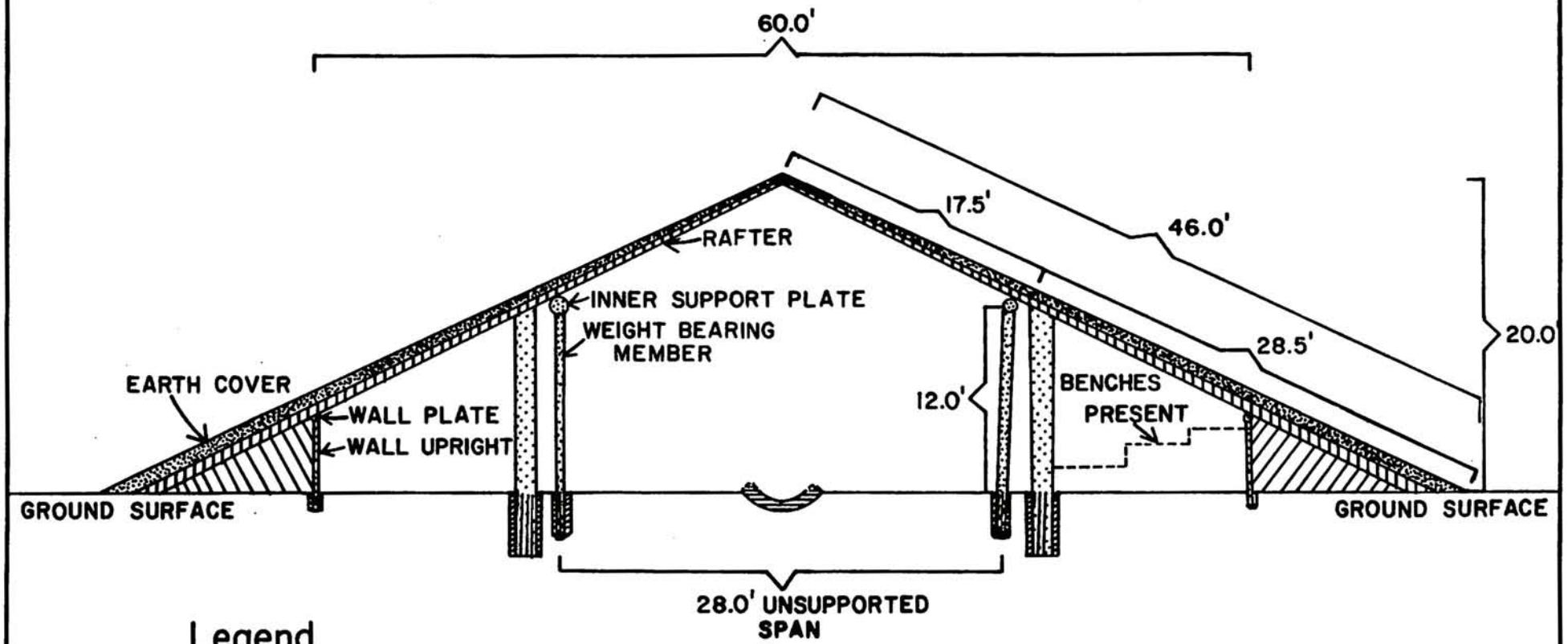
> The rotunda is constructed after the following manner; they first fix in the ground a circular range of posts or the trunks of trees, about six feet high, at equal distances, which are notched on top, to receive unto them, from one to another, a range of beams or wall plates; within this is another circular order of very large and strong pillars, above twelve feet high, notched in like manner at top, to receive another range of wall plates; and within this is yet another or third range of stronger and higher pillars but fewer in number, and standing at a greater distance from each other; and lastly, in the center stands a very strong pillar, which forms the pinnacle of the building; and to which the rafters centre at top; these rafters are strengthened and bound together by cross beams and laths, which sustain the roof or covering, which is a layer of bark neatly placed, and tight enough to exclude the rain, and sometimes they cast a thin superficies of earth over all...All round the inside of the building, betwixt the second range of pillars and the wall, is a range of cabins or sophas, consisting of two or three steps, one above or behind the other,...near the great pillar in the centre the fire is kindled for light,... (Bartram 1928: 297-298).

Two more general descriptions relate to the second townhouse at Chota but contain less information. The Duke of Orleans, who entered the Chota townhouse in 1799, described it as "...a hexagonal pyramid of logs,... (Williams 1928: 437). Henry Timberlake described the Chota townhouse at greater length in 1761:

> The town-house, in which are transacted all public business and diversions, is raised with wood and covered over with earth, and has all the appearance of a small mountain at a little distance. It is built in the form of a sugar loaf, and large enough to contain 500 persons, but extremely dark, having, besides the door, which is so narrow that but one at a time can pass, and that after much winding and turning, but one small aperture to let the smoak out, which is so ill contrived, that most of it settles in the roof of the house. Within it has the

CHOTA TOWNHOUSE

40MR2 PHASE II



Legend

- Wooden Timber or Post
- Stone Slab
- Post Hole Fill
- Post Mold
- Clay Hearth
- Buttress
- Earth Cover
- Rafter

Features Above Ground Surface Plane=
Possible Reconstruction of Super Structure

Features Below Ground Plane=
Features Excavated by Greene and Polhemus '69

Figure 3

> appearance of an ancient amphitheatre, the seats being raised one above another, leaving an area in the middle, in the center of which stands the fire; the seats of the head warriors are nearest it (Williams 1927: 59).

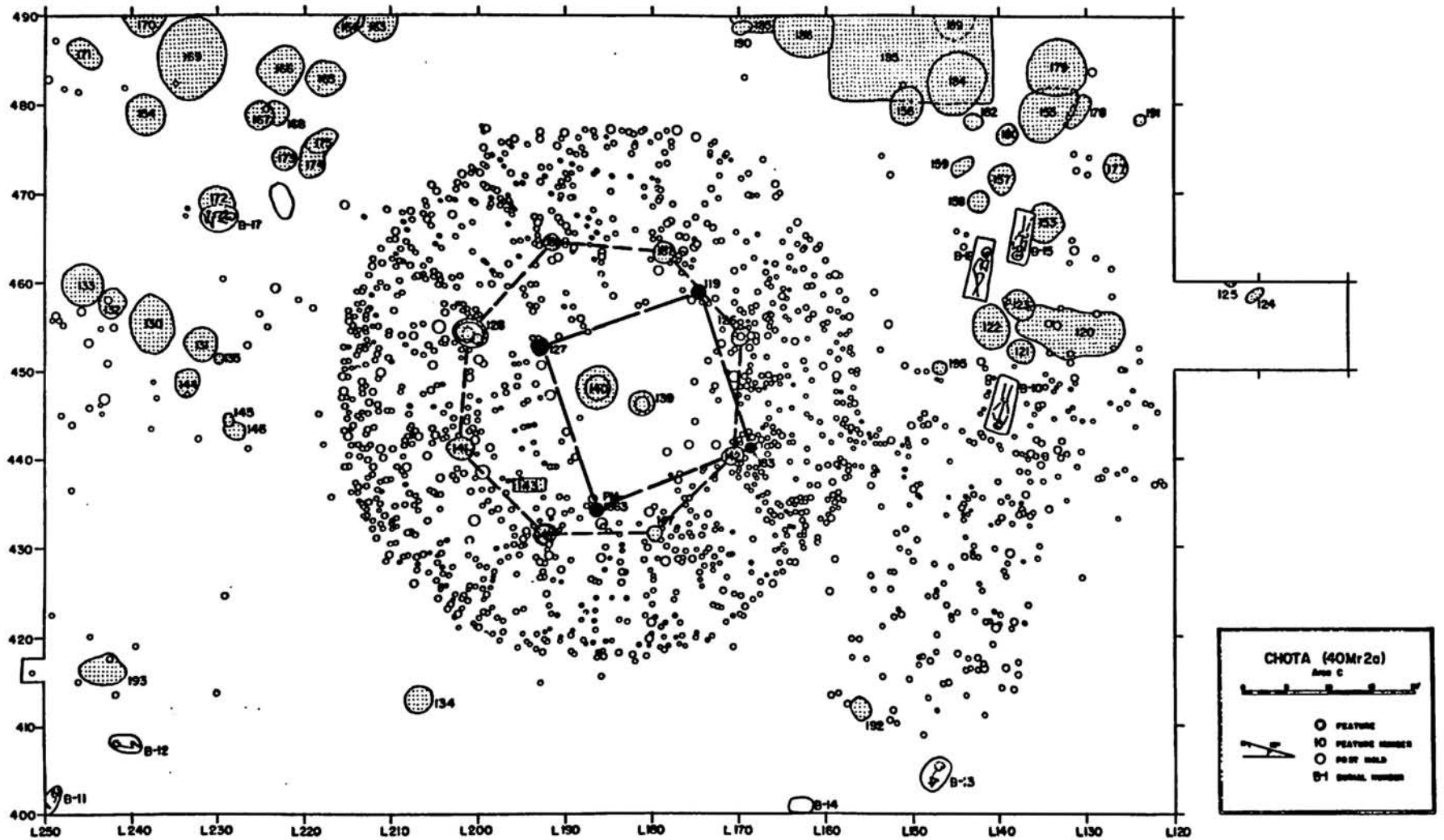
The most recent description of a townhouse, located in the Payne Manuscripts, provides a better understanding of the superstructure which may have been present in the second Chota townhouse. The orientation and number of primary roof supports differ, however, the description providing for seven posts and an east entry as opposed to eight posts and a south entry in the Chota example. The orientation of the entry at Chota may have been determined by the local topography rather than by choice due to the relatively narrow second terrace at Chota. The following description was recorded by J. H. Payne from a Cherokee in the first half of the nineteenth century:

> Council house is a Heptagon supported by seven posts, each equidistant from the other. The posts were set in a circle. There were slanting beams set on these posts. The beams met at a peak above the middle. The outside was grass thatched in two layers with a layer of earth between. When fire is made, its smoke issues through the roof as through a coal pit, covering through openings in the roof. Perpetual fire kept burning here. Bark roof used. The door is on the east with a portico also. The sacred ark was placed on the west of the council house where one could stand and look east thru the door,...Seating was on 7 sides of the Council house, one side for each clan or family (Payne n.d.: 14-15).

Only through the excavation of additional townhouses can these differences be resolved. Figure 3 illustrates a suggested cross section of the second Chota townhouse utilizing both archeological and ethnographic data. No descriptions are available for the "portico" frequently mentioned as being present near the entry to the townhouse in which many activities took place in good weather. A linear concentration of postholes flanking the entrance to the second Chota townhouse suggests such a structure was present facing an open area to the south (Fig. 4). The relative position of the townhouse to the portico bears a direct relationship to the relative position of the hot-house to the summer house of each household.

SUMMER HOUSE - VERTICAL POST FORM

The summer house is the best described structure during the third quarter of the eighteenth century. Some aspects of the construction of this form of structure suggest the application of English timber construction techniques. Posthole patterns excavated at Chota (Fig. 5) and



Plot, Area C (40Mr2)

Figure 4

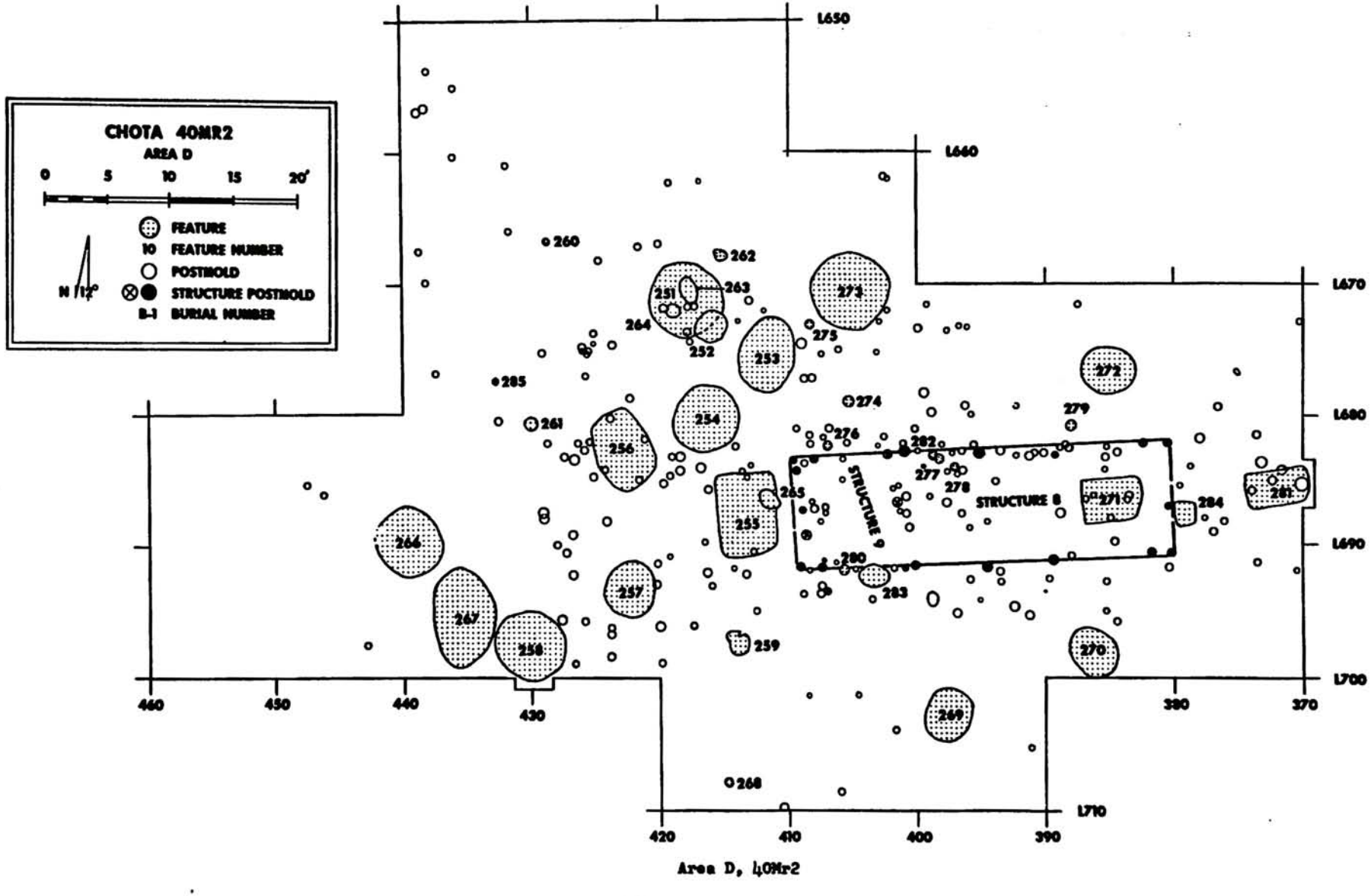

CHOTA 40MR2
AREA D
0 5 10 15 20'
FEATURE
10 FEATURE NUMBER
POSTHOLD
STRUCTURE POSTHOLD
B-1 BURIAL NUMBER
N 12°
L650
L660
L670
L680
L690
L700
L710
460
450
440
430
420
410
400
390
380
370
STRUCTURE 8
STRUCTURE 9
Area D, 40Mr2

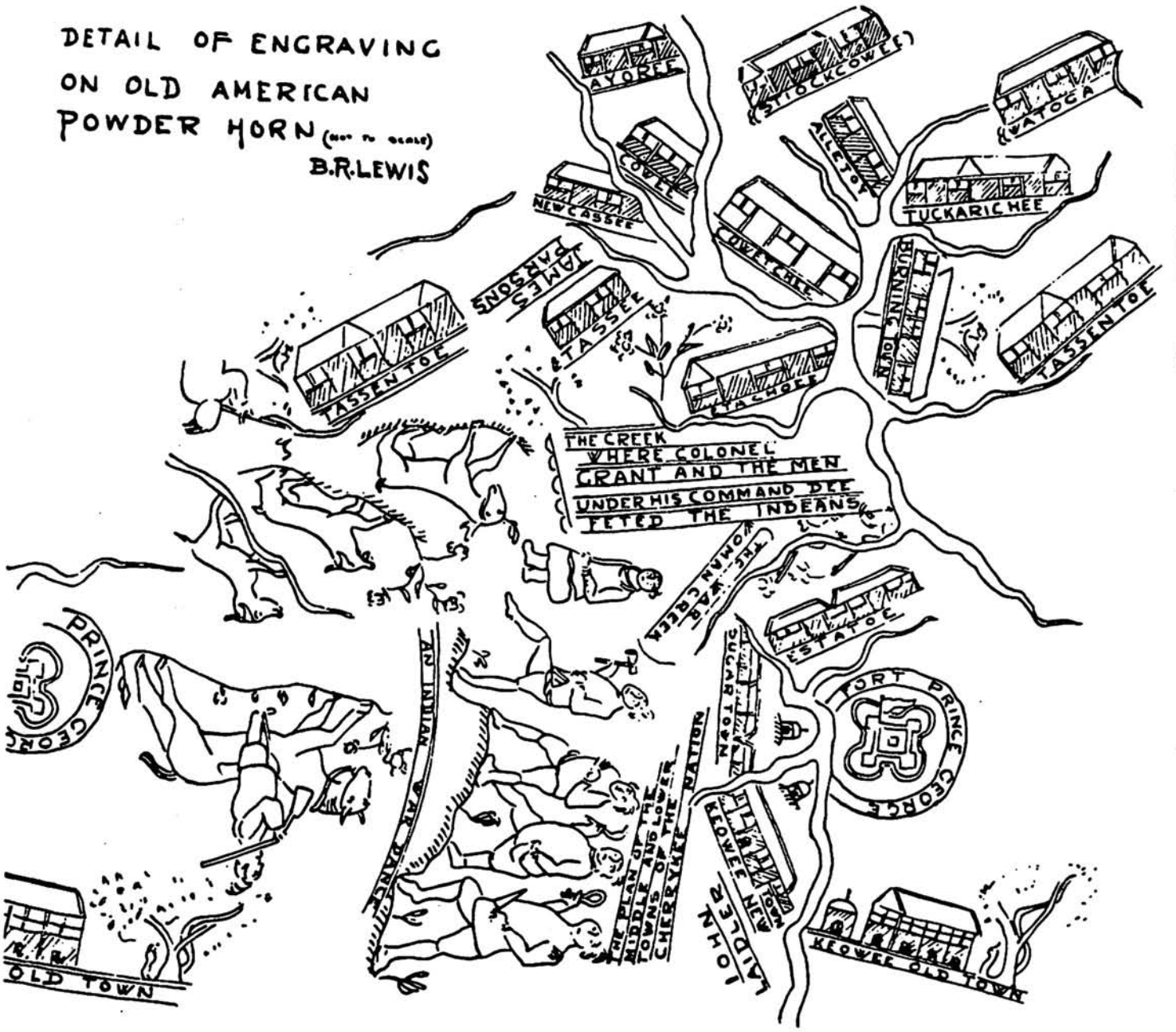
Figure 5

Toxaway resemble those associated with Fort Moore (38AK4) in South Carolina; a British colonial fort constructed in 1716 and occupied until 1763. In addition to the normal range of descriptions available an apparently unique historical document in the form of an engraved powderhorn illustrates a number of these structures in some detail (Fig. 6). The powderhorn was engraved in 1761, and bears a map of the Lower Towns and Fort Prince George in addition to the structures indicating the position of each town. A number of descriptions of this structure form follow, with comments, beginning with that of James Adair:

> For their summer houses, they generally fix strong posts of pitch-pine deep in the ground, which will last for several ages--The trees of dried locust, and sassafras, are likewise very durable. The posts are of an equal height; and the wall-plates are placed on top of these, in notches. Then they sink a large post in the center of each gable end, and another in the middle of the house where the partition is to be, in order to support the roof-tree; to these they tie the rafters with broad splinters of white oak, or hiccory, unless they make choice of such long sapplings, as will reach from side to side over the ridge pole, which, with a proper notch in the middle of each of them, and bound as the other sort, lie very secure. Above these, they fix either split sapplings, or three large winter canes together, at proper distances, well tied. Again they place above the wall-plates of both sides of the house, a sufficient number of strong crooks to bear up the eave boards:... They cover the fabric with pine, or cypress clapboards, which they can split readily;... (Adair 1930: 449-450).

The presence of split clapboards for roofing material appears to be an adaptation of European building techniques. The account by Henry Timberlake which follows likewise includes the use of clapboards:

> A number of posts is fixed in the ground, according to the plan an dimensions of the house, which rarely exceeds sixteen feet in breadth, on account of the roofing, but often extend to sixty or seventy in length, beside the little hot-house. Between each of these posts is placed a smaller one, and the whole wattled with twigs like a basket, which is then covered with clay very smooth, and sometimes whitewashed. Instead of tiles, they cover them with narrow boards. Some of these houses are two Story high, tolerably pretty and capacious; but most of them very inconvenient for want of chimnys, a small hole being all the vent assigned in many for the smoak to get out at (Timberlake 1927: 84).



This illustration is taken from "Powder Horn of the 77th Highlanders" (1955) by Berkeley R. Lewis, in: Collector's Field Book, in: *Military Collectors and Historians*. Vol. VII, No. 1. Washington, D.C. Permission to reproduce here obtained from the Company of Military Historians.

Figure 6

The report of William Gerard DeBrahm includes a description similar to those previously quoted, with additional information on interior furnishings:

> The Indians build their Houses of Posts, on which they lash in- and-out-side Canes, and plaster them over with a white Clay mixed with small pieces of Talck (itchy-ocolla), which in a sun-shiny day gives to these Houses or rather Cottages a Splendor of unpolished Silver; they are about 12 feet wide, and 20 or more long, covered with a clapboard roof, have no windows, but two Doors on the opposite sides, sometimes only one Door; the Fire Place is at one end of the House with two bedsteads on both sides of the Fire; the bedsteads are made of Canes, raised from the Ground about two feet, and covered with Bears Skin;... (DeBrahm 1971: 110).

The description of the summer house located in the Payne Manuscripts provides the most definitive evidence of English building techniques incorporated in this form of structure:

> Ancient houses were of split sticks, laid in mud, the ends being made fast by means of gutters in the side of the posts. Fire lighted in the middle and there was a hole in the roof above for smoke...On the sides of the house were small holes one foot square for windows. There were beds on the sides and back end of the house three feet high, and covered with cane fastened together, or some other kind of mattress (Payne n.d.: 302).

SUMMER HOUSE - HORIZONTAL LOG FORM

The summer house constructed of horizontal logs was introduced in the 1770's and had nearly replaced the earlier form by 1784. A description of a primitive form of log cabin is present in the Draper Manuscripts written by William Lewis in an account of the expedition to the Cherokees in 1776. The structures were built on the log cabin principle but without the necessary notches at the corners, utilizing four corner posts as braces. The description by Lewis of this cribbed rail construction follows:

> The houses were generally of the oblong figure constructed by placing four posts in the ground and extending rails representing the four sides of this square from one post to another. The space on the sides between the rails was filled

> with reeds in the form of wattled or wicker work and over these again on the inside was spread a coat of plaster. The roofs of the Houses were covered with bark peeled from the Trees at the proper season of the year (Draper 1910: 202).

The log cabin of notched horizontal timbers was described by the Moravians Steiner and Schweinitz during a visit to the Cherokee Town of Big Tellico in 1799:

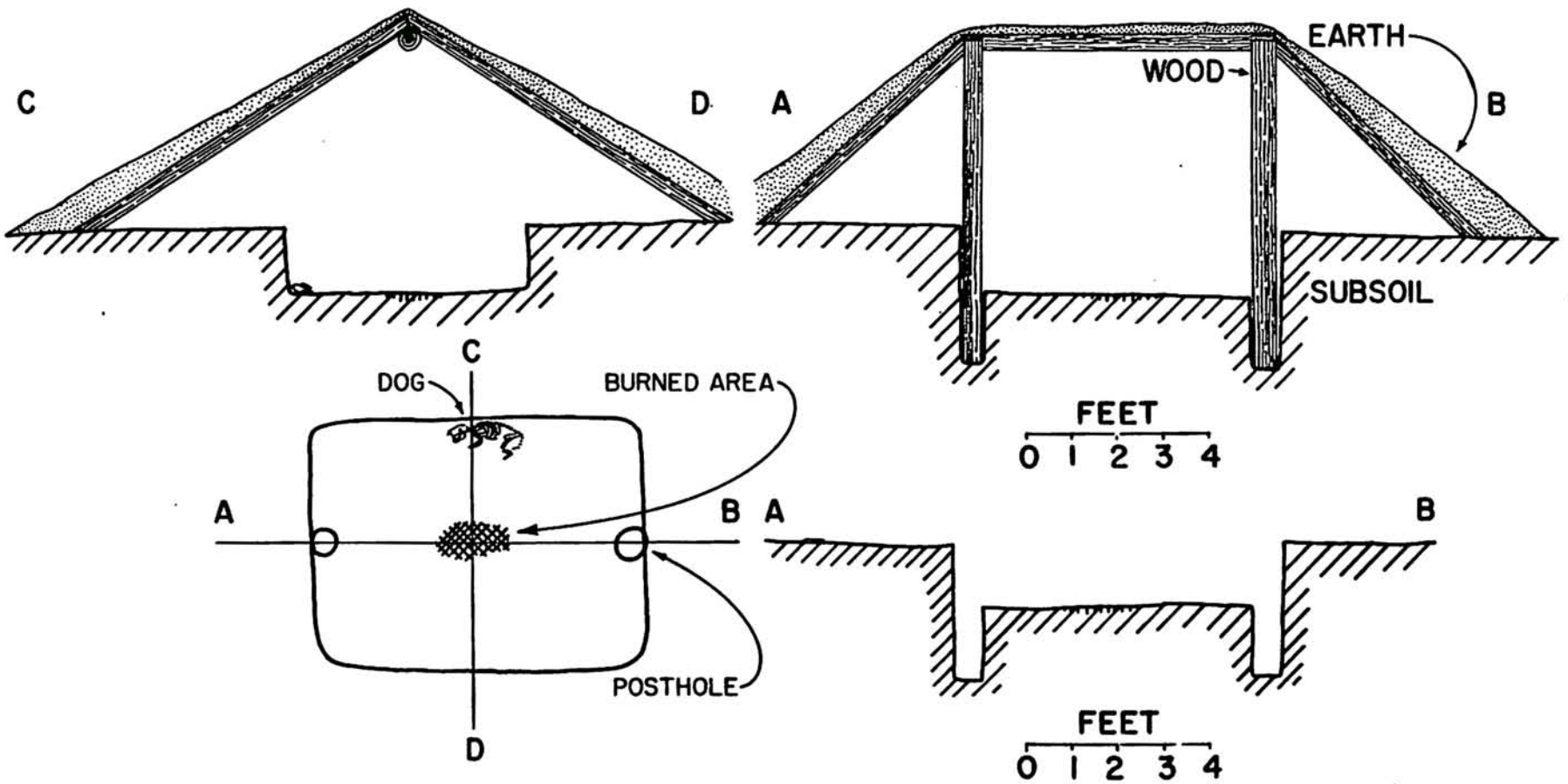
> Our house measured about 24 feet by 12 feet. One half, at the end of which there is a fireplace, has along the side wall weed-woven benches that serve as tables, seats and beds, was arranged as a dwelling, and the other half as a corn store house. The house is blocked up of slender logs, without a wooden floor and has a roof of long shingles, covered with bark on the upper side. In the middle is the narrow house-door (Williams 1928: 479).

The houses of this period also had a form of winter house or hot-house associated but descriptions are lacking other than that they were round, earth covered structures of small size with a low doorway. A number of features excavated at Chota may represent this form of structure. Figure 7 illustrates a possible reconstruction of the superstructure of these features based in part on a description written in the early nineteenth century of the houses occupied "by the poorer class of Indians, consisting of a roof resting on the ground, formed of flattened pieces of bark leaned against a ridgepole" (Rev. Sapelo: 1813). Other log cabin descriptions, such as that for Mrs. Martin's by Brother Scheider in 1784 indicate a greater degree of acculturation. Mrs. Martin's home was floored, whitewashed, stone chimnied, and contained a corner cupboard containing tinware and dishes.

CORN HOUSE

The only outbuilding mentioned in most accounts is a corn house. The descriptions are nearly identical and that of DeBrahm follows:

> Their Corn Houses are built in the same manner, but raised upon four posts, four and some five feet high from the Ground; its Floor is made of round Poles, on which the Corn-worms cannot lodge, but fall through, and thus the Indians preserve their Corn from being destroyed by the Weevils a whole year (DeBrahm 1971: 110).



CHOTA (40MR2) FEATURE 112

Figure 7

CONCLUSION

This brief review of structural information available from ethnographic sources has resulted in a better understanding of the time-space relationship of the various structures making up the Cherokee town. Additional work will likely produce other structures not mentioned or mentioned but not described in the sources presently available, such as the fowl house mentioned by William Bartram. Structural relationships, in conjunction with intrasite residence patterns provided through further ethnographic and archeological research should provide a base upon which socio-political or clan patterns may be constructed. Some possible lines of research could involve the relationship of bead color to known clan colors, the orientation of burials or other features according to clan affiliation, and the detailed analysis of ceramics to detect possible clan or family differences which might be attributed to the matrilocal residence pattern listed for the Cherokee. A further study of the Payne Manuscripts relating to activities within and around the townhouse could explain certain structural details or variations present in such structures. The lack of preserved examples of the log cabin form of structure attributable to the Cherokee may be explained by the lack of subsurface features left by such a structure and by sampling error. Such structures as may still exist are not located within the Tellico Reservoir Area and must be searched out in the hills and valleys to the south, particularly along the Hiwassee drainage.

In conclusion, it is evident that a number of specific structures made up each Cherokee household, and each town, and that certain of these structures changed through time; due, in part, to the influence of European building techniques. This acculturation in building techniques makes up but a small part of the overall acculturation of the Cherokee to contemporary American material culture. This change began in the 1750's with the construction of British colonial forts in the Cherokee country and culminated in a life style approximating that of the surrounding White settlers in the early nineteenth century.

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