

FAMSI © 2007: William R. Fowler

The End of Pre-Columbian Pipil Civilization, Ciudad Vieja, El Salvador

With contributions by: Jeb J. Card, Department of Anthropology, Tulane University



Research Year: 2003

Culture: Pipil and Central Mexican Nahua

Chronology: Late Post Classic/Conquest

Location: Department of Cuscatlán, El Salvador

Site: Ciudad Vieja

Table of Contents

[Abstract](#)

[Resumen](#)

[Introduction](#)

[Location, Setting, Context](#)

[Excavations and Architecture](#)

[The Ceramics of Ciudad Vieja](#)

[Overview](#)

[Methodology](#)

[Preliminary Group and Type Descriptions](#)

[Sampling](#)

[Late Postclassic/Conquest Component](#)

[Early Postclassic Component](#)

[Late or Postcolonial Component](#)

[Type Classification: Discussion](#)

[Spanish Pottery at Ciudad Vieja](#)

- [Olive Jars](#)
- [Majolica](#)
- [Locally Produced Hybrid Plates: An In-Depth Analysis of Ciudad Vieja Colono Ware](#)
- [Methodology](#)
- [Form](#)
- [Decoration](#)
- [Technology](#)
- [Implications for Indigenous Occupation of San Salvador and Sixteenth-Century Culture Change](#)
- [The Chipped Stone Industry](#)
- [Methodological and Theoretical Considerations](#)
- [Procedure](#)
- [The Collection](#)
- [Typology](#)
- [Discussion](#)
- [List of Figures](#)
- [List of Tables](#)
- [Sources Cited](#)

Abstract

The *villa* of San Salvador, founded in 1525 and refounded in 1528 as a Spanish conquest city, had a resident indigenous (mostly Pipil as well as Tlaxcaltec and other central Mexican Nahua) population that was perhaps twenty times greater in number than its Spanish population. Abandoned in 1545, its 17-year occupation spans the crucial years of the Conquest period in Central America. The well-preserved ruins of this town, known today as the site of Ciudad Vieja, afford a rare opportunity for archaeological study of the dynamics of early Spanish-Indian culture contact. Archaeological research at the site emphasizes spatial study of the town, viewing it as a cultural landscape, emphasizing the mutual interaction of the different cultural groups that shared the terrain. Approximately two dozen Spanish cities were founded in Central America during the Conquest period. Very few of them have been investigated archaeologically, and Ciudad Vieja is unique among them for its exposure, preservation, and ease of access. Research in 2003 and 2004 included detailed analyses of the material culture of Ciudad Vieja. These analyses, conducted January 2003–August 2004, include formal, functional, and contextual analyses of ceramics and all artifact industries. Included here are detailed summaries of the results of the ceramic and obsidian investigations. Support from FAMSI enabled the project to complete these tasks, and the results represent an advance in our knowledge of late pre-Columbian and contact-period Pipil culture.

Resumen

La *villa* de San Salvador, fundada en 1525 y vuelta a fundar en 1528 como una ciudad de conquista española, tenía una población indígena residente (principalmente pipil, así como tlaxcalteca y de otros grupos nahuas del centro de México) que era tal vez veinte veces más grande en cantidad que la población española. Abandonada en 1545, su ocupación de 17 años abarca los años cruciales del periodo de la Conquista en Centroamérica. Las bien preservadas ruinas de este pueblo, actualmente conocidas como Ciudad Vieja, nos dan una poco común oportunidad para estudiar arqueológicamente las dinámicas del contacto cultural temprano entre españoles e indios. La investigación arqueológica en este sitio enfatiza el estudio espacial del pueblo, viéndolo como un paisaje cultural, poniendo énfasis sobre la mutua interacción de los distintos grupos culturales que compartieron el terreno. Aproximadamente dos docenas de ciudades fueron fundadas por los españoles en Centroamérica durante el periodo de la Conquista. Muy pocas han sido investigadas arqueológicamente, y Ciudad Vieja es única entre ellas por su grado de exposición, de preservación y de fácil acceso. Las investigaciones en 2003–2004 incluyeron análisis detallados de la cultura material de Ciudad Vieja, conducidos entre enero de 2003 y agosto de 2004. Estos análisis consistieron en el estudio formal, funcional y contextual de las cerámicas y de todas las industrias de artefactos. Aquí se incluyen resúmenes detallados de los resultados de las investigaciones sobre cerámica y obsidiana. El apoyo de FAMSI permitió al proyecto completar estas tareas, y los resultados representan un avance en nuestro conocimiento de la cultura pipil de los periodos precolombino tardío y del contacto.

Submitted 09/11/2006 by:
William R. Fowler
Department of Anthropology
Box 6050-B
Vanderbilt University
Nashville, TN 37235
william.r.fowler@vanderbilt.edu

Jeb J. Card
Department of Anthropology
Tulane University
New Orleans, LA 70118
jcard@tulane.edu
ahtzib@yahoo.com

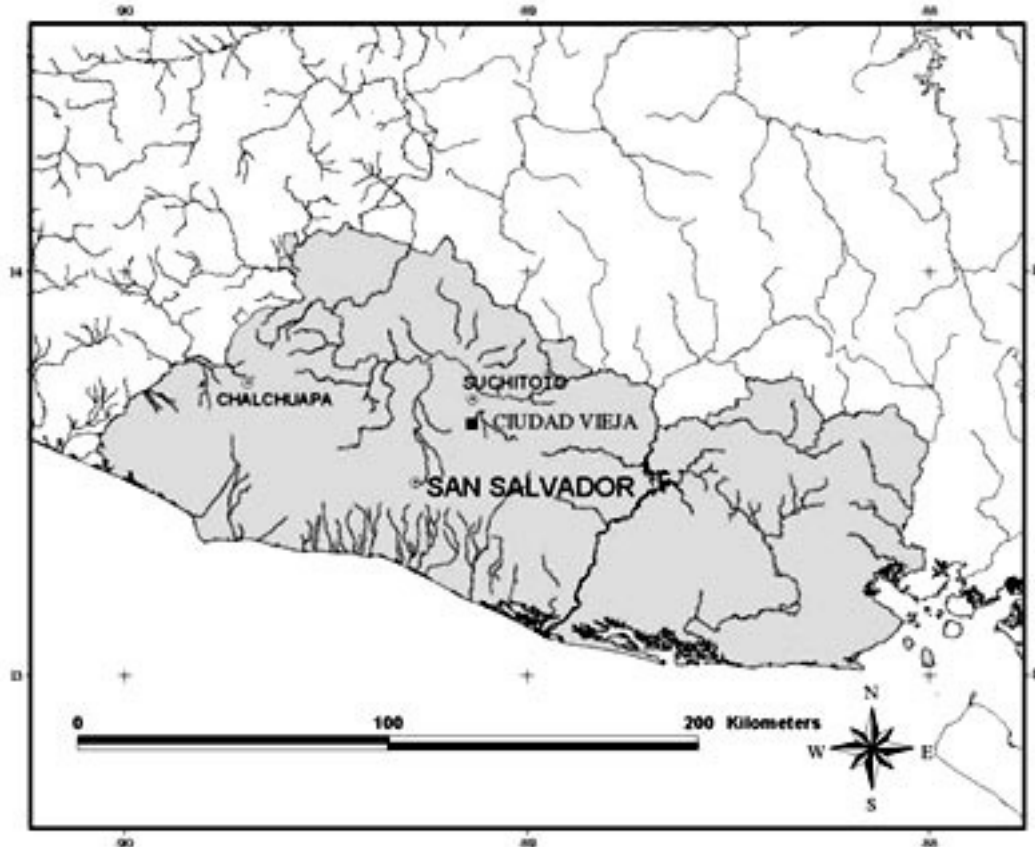


Figure 1. Map showing location of Ciudad Vieja within El Salvador.

Introduction

The research presented in the following pages was directed at advancing knowledge of the late pre-Columbian Nahuat-speaking Pipils of El Salvador with detailed analyses of the material culture of the conquest-period site of Ciudad Vieja, which a small number of Spanish residents shared with Pipils and other indigenous Mesoamericans. At the time of the Spanish conquest in 1524, the Pipils were the dominant indigenous culture of El Salvador, occupying about two-thirds of the territory of the modern republic (Fowler 1989, 1991b). Two major Pipil polities dominated the area: the small Izalcos kingdom in the west and the larger Cuscatlán kingdom in the central region. While the late pre-Columbian Pipils are well-known through ethnohistoric research (Fowler 1989), they are virtually unknown archaeologically. This lack of knowledge calls for increased archaeological research on the ancient Pipils during the Late Postclassic and Conquest periods.

More than 35 years ago, John Longyear (1966:145) stated in a survey article on the prehistoric archaeology of El Salvador, "the Postclassic period in central and western El Salvador is represented for the most part by a fairly large number of isolated, undocumented pottery and stone objects." Since these words were written, some advances have been made in our knowledge of the Early Postclassic (Bruhns 1980;

Fowler 1981, 1989; Kelley 1988), but Late Postclassic Pipil culture remains largely unknown and poorly understood. Late Postclassic sites of the Pipil area have proven elusive. In many cases, they probably lie beneath modern settlements. In the Zapotitán Basin, a densely populated Pipil region where at least 14 Pipil settlements are known historically for the time of the conquest, Black (1983) found only five Late Postclassic sites in an extensive survey (cf. Sheets 1984:107). Since the Zapotitán Basin survey covered a 15% sample, the five sites could be extrapolated to a predictable 33 sites. In a survey of the region surrounding Antiguo Cuscatlán, supposedly the location of the ancient Pipil capital, Amaroli (1986) found scant Late Postclassic ceramic materials and no Late Postclassic structures or features. In the Paraíso Basin region of north-central El Salvador, the region surrounding Ciudad Vieja, Fowler and Earnest (1985) recorded no Late Postclassic sites. Andrews (1976) has noted a similar lack of Late Postclassic material for eastern El Salvador.

Fortunately, this gap in our knowledge of late pre-Columbian Pipil culture has now been partially filled. We have conducted full-scale, detailed analysis of the material culture of the site of Ciudad Vieja, the ruins of the first permanently occupied villa de San Salvador, located 10 km south of Suchitoto, El Salvador ([Figure 1](#), shown above). Founded in 1528 and abandoned in 1545, the population of San Salvador was predominantly indigenous, composed mostly of pre-Columbian Pipils, Tlaxcaltecs, and other indigenous Mesoamericans. A small contingent of Spanish conquistadors accompanied by thousands of Tlaxcaltec and other Mexican auxiliary forces invaded the area in 1524. Other non-Pipil Mesoamerican ethnic groups who participated included Tetzcocans, Huexotzincans, Tepeyacans, Mexicas, Mixtecs, Soconusco Nahuas, and Kaqchikel Mayas (Fowler 1989:135). The Spaniards founded the first villa of San Salvador in 1525, probably also at the site of Ciudad Vieja. The Pipils rebelled and drove out the Spaniards in 1526 (Barón Castro 1996:39-44). Pipil resistance waned by 1528, allowing the Spaniards and their indigenous allies to reenter and to found a more permanent settlement, the second villa of San Salvador (Barón Castro 1996:87-91, 197-202). This new town was built in an area to the north of Cuscatlán Pipil territory that apparently had little or no indigenous settlement at the time of the conquest (Fowler and Earnest 1985). It is reasonable to suppose that the region served as a buffer zone between the Pipils to the west and south and the Lencas to the east.

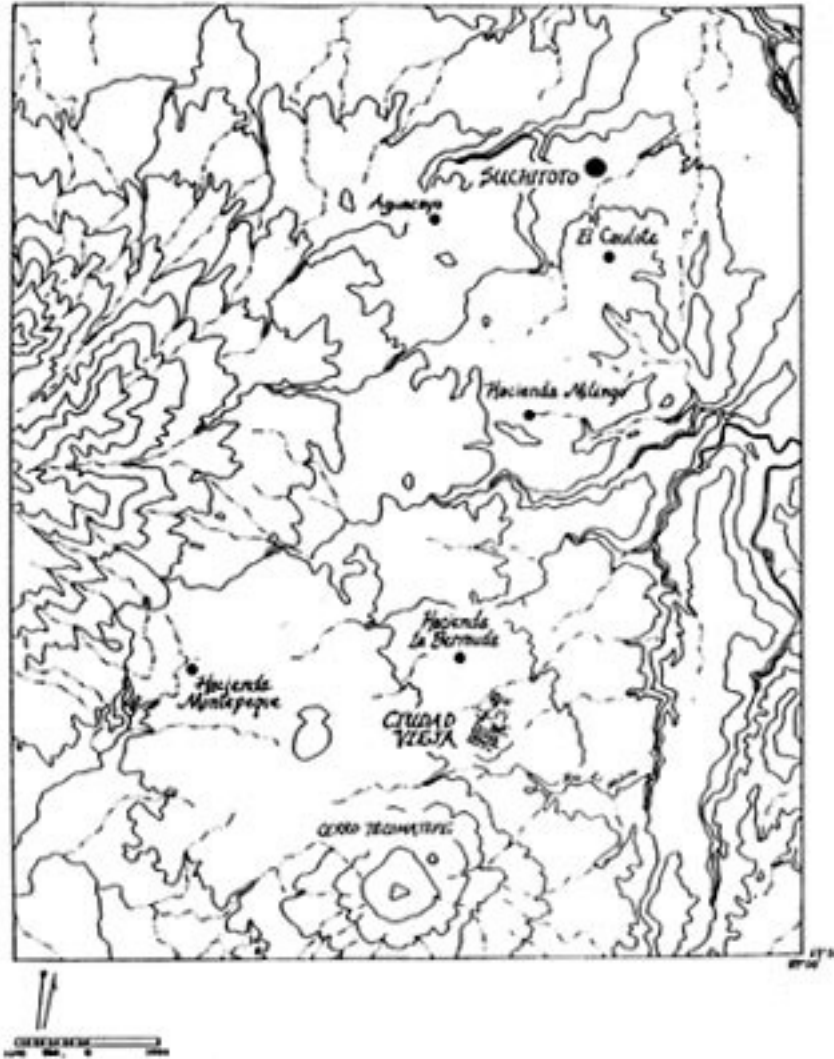


Figure 2. Regional map indicating the location of the site of Ciudad Vieja, El Salvador. Map by Rebecca Cutler.

Location, Setting, Context

The archaeological site of Ciudad Vieja is located in central El Salvador at 13° 51' 33" north latitude and 89° 01' 58" west longitude, at an elevation of 534 m above sea level. The site was built on a small meseta formed by an extrusive andesite outcrop that rises above a small natural basin south of the middle reaches of the Lempa River known as the Paraiso Basin (Fowler and Earnest 1985). Before the construction of the city, the top of this meseta would have been irregular and craggy with many andesite outcrops and boulders, thus requiring extensive leveling and terracing ([Figure 3](#) and [Figure 4](#)).

The dominant natural features of the surrounding landscape are Cerro Tecomatepe, a small remnant volcanic cone to the southwest, and the extinct Guazapa Volcano to the west ([Figure 2](#), shown above). The natural vegetation is tropical deciduous forest of the seasonal formation series (Daugherty 1969:49; Fowler 1989b:82). Some characteristic tree species of this formation are the ceiba (*Ceiba pentandra*), *amate* (*Ficus spp.*), and *conacaste* (*Enterolobium cyclocarpum*). The area was probably very thickly wooded at the time of the Conquest, thus requiring a great deal of clearing for the construction of the city. The labor for clearing and leveling and for construction of the city was provided by Pipil commoners from towns allied with the Cuscatlán polity. Agricultural tribute commodities from the same communities supplied the city with food (Fowler 1989:155-185).

Systematic archaeological research was begun at the site in 1996 under the direction of William R. Fowler, working in close collaboration with the Consejo Nacional para la Cultura y el Arte (CONCULTURA) of El Salvador. Since that time, five additional field seasons of survey, mapping, and excavation have generated data revealing the strongly indigenous character of the city (Fowler and Gallardo 2002). The site was built on a grid plan with an area covering 45 ha, but the plan is polycentric rather than strictly orthogonal, possibly reflecting indigenous influence (Figure 3 and Figure 4). The *plaza mayor*, the church and *cabildo* (town hall) platforms, other buildings, streets, and house lots are clearly visible on the surface. Many architectural features of the site, especially house platforms and terraces, seem indigenous in character. Even the *cabildo* structure itself, resembles more a Late Postclassic range structure than a European-style public building. Several indigenous residences have been excavated at the site, and these are clearly distinguishable from Spanish residences by their form and construction techniques as well as artifact associations (Hamilton 2002). A strong indigenous presence at San Salvador is also reflected in the ceramics and artifact complexes of Ciudad Vieja. The site's surface is littered with ceramic sherds, and the ceramic complex shares many forms and decorative modes representing continuities with known Late Postclassic Pipil materials. In addition to the highly visible concentrations of ceramics, obsidian artifacts occur in great numbers on the surface and in excavated contexts. Pre-Columbian style ceramic figurines also occur, as do ceramic earspools and ground-and-polished greenstone ornaments and other items of personal adornment of indigenous origin (Card 2002). Objects associated with indigenous dietary patterns are also found. Groundstone manos and metates occur in relatively high frequencies, indicating indigenous food-preparation techniques. Analysis of the faunal remains of a large midden deposit revealed the presence of dog (*Canis familiaris*) bones with butchering marks (Scott 2002). In sum, the archaeological evidence indicates that this early conquest-period town had a native Mesoamerican population of overwhelming proportions.

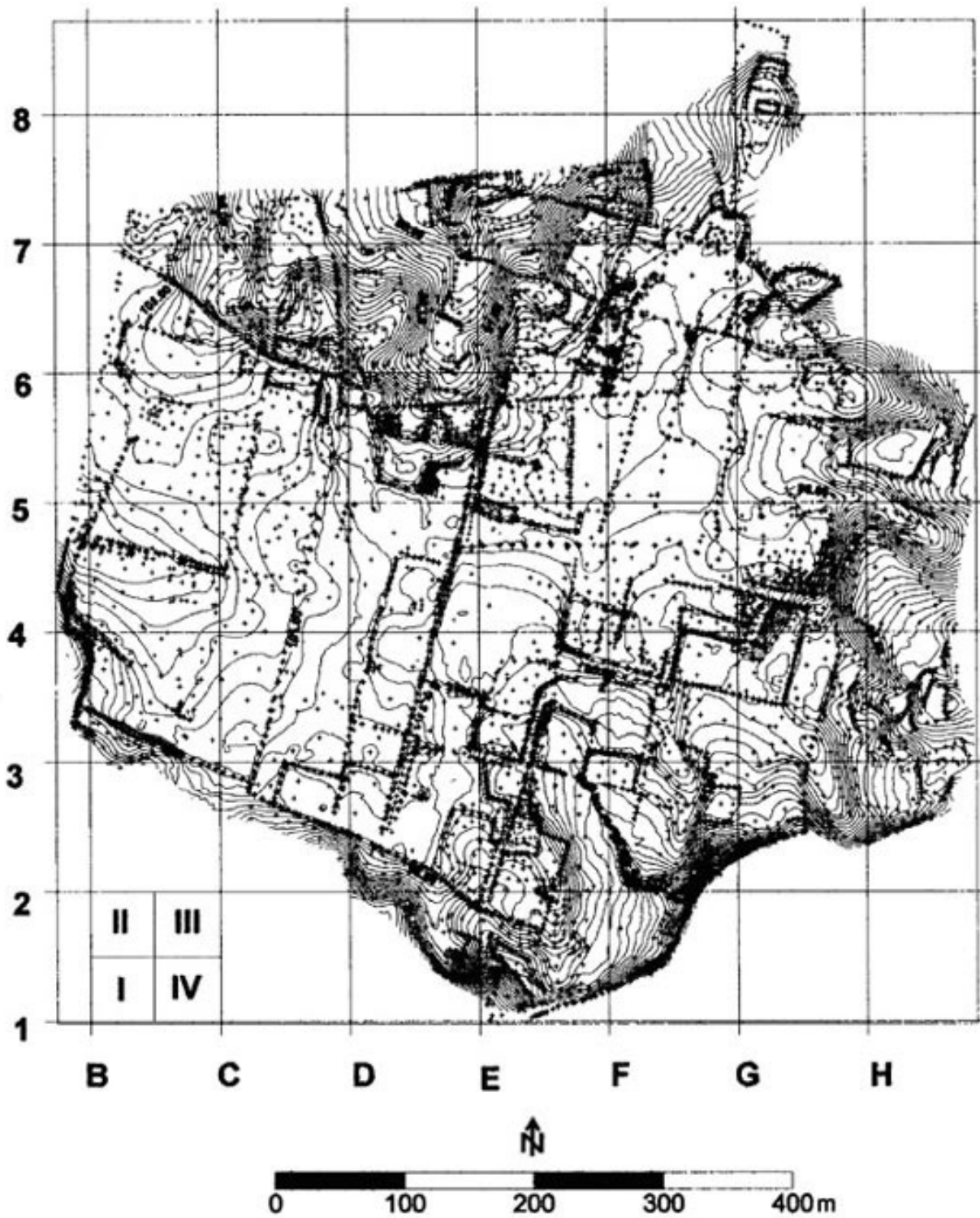


Figure 3. Site plan of Ciudad Vieja showing natural topography and cultural features, based on original 1998 total station mapping. Map by Conard Hamilton.

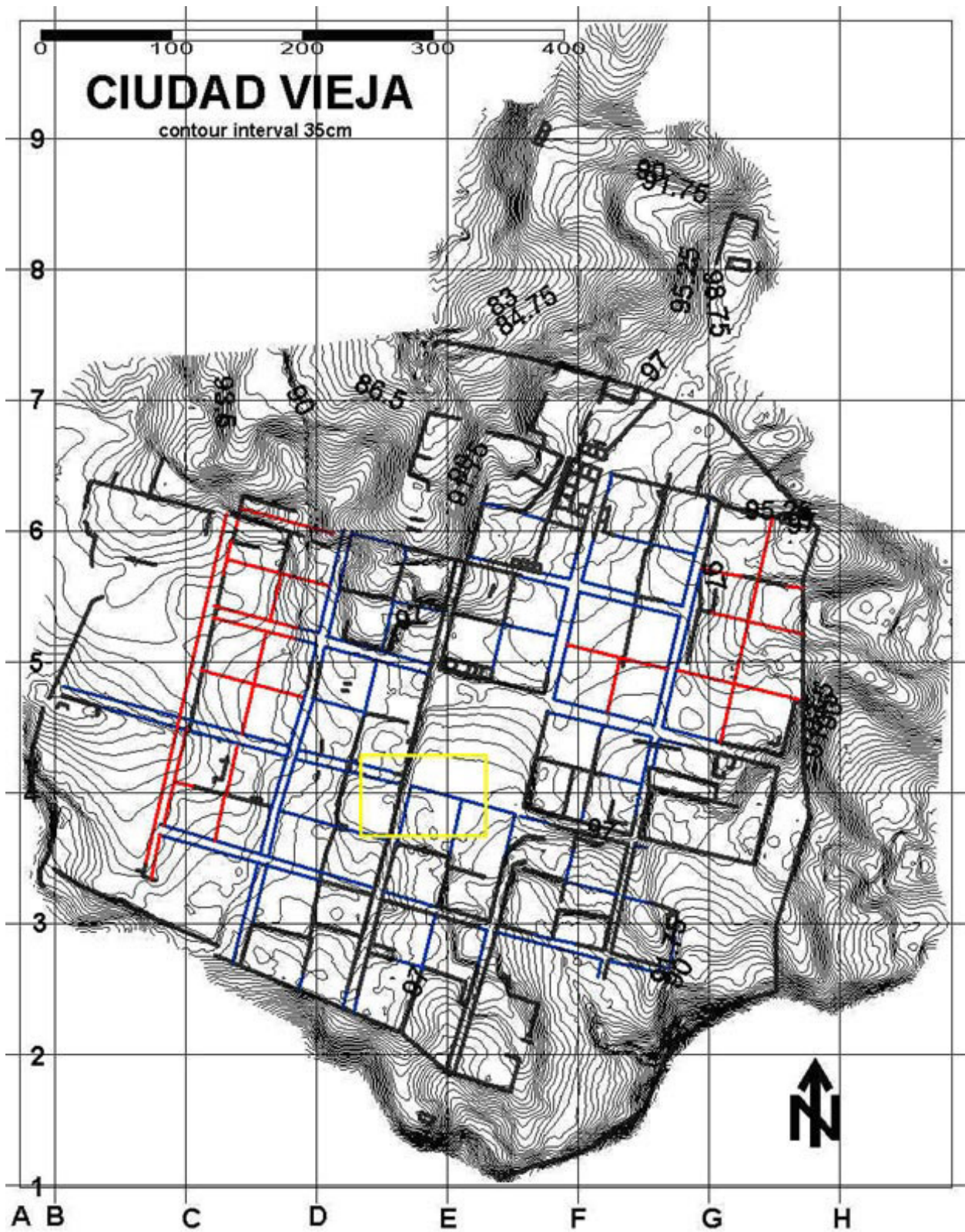


Figure 4. Projected map of Ciudad Vieja showing topography and grid-plan layout. Map by Conard Hamilton. Black lines represent structures and features visible on surface; blue lines, projected; red lines, hypothesized. The yellow rectangle at the southwest corner of the plaza mayor indicates the location of recent excavations.

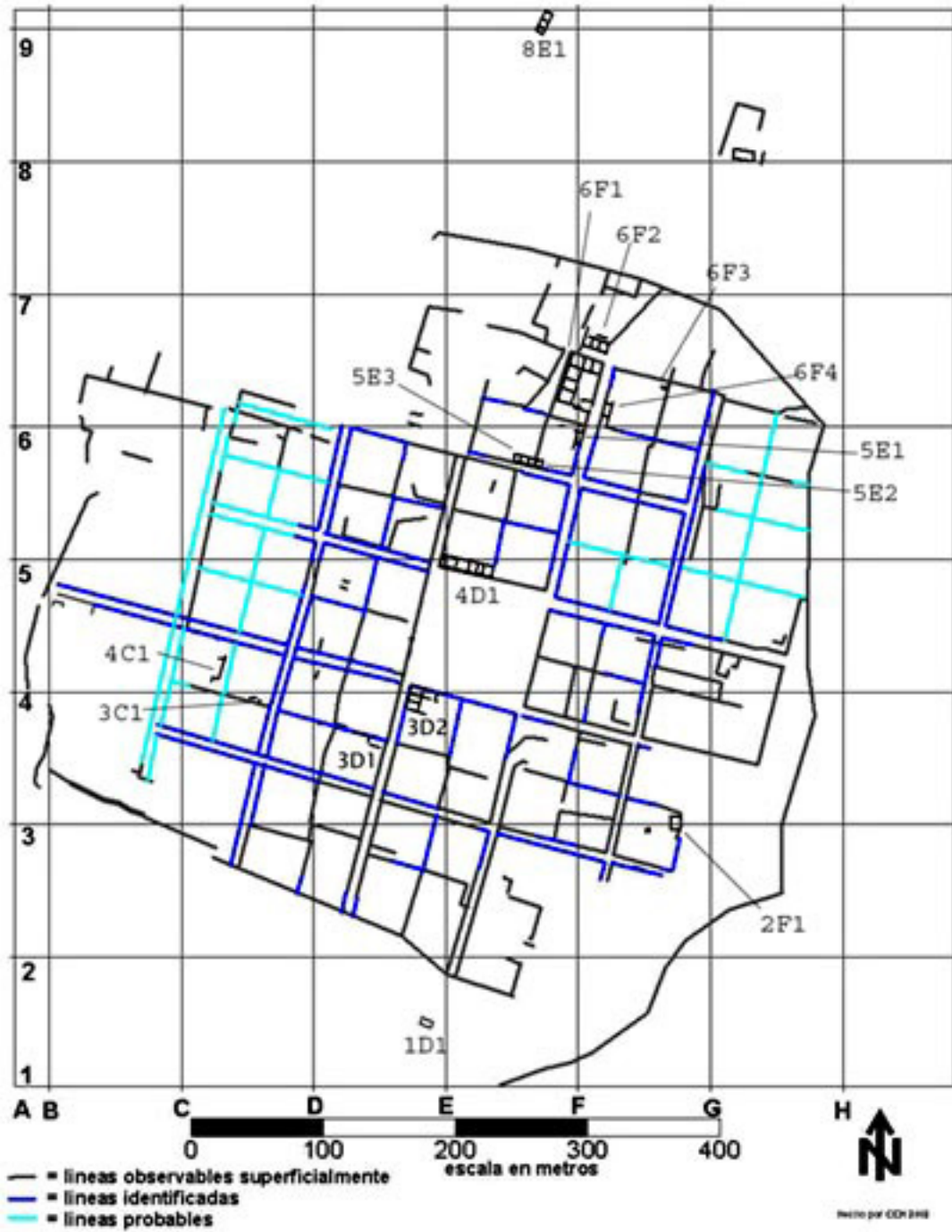


Figure 5. Locations and designations of excavated structures. Map by Conard Hamilton.

Excavations and Architecture

The analytical sections on ceramics and chipped-stone artifacts include references to excavated structures. For the sake of clarity, we include here a brief descriptive summary of the excavations and architecture of the most important structures. A total of 13 structures and five associated activity areas were excavated in seven field seasons from 1996 to 2003 ([Figure 5](#), shown above). Unless otherwise specified, the orientations of the buildings follow the general site grid of 12°. The multicourse stone wall foundations are usually 80-85 cm in width, or approximately one Spanish *vara* of 83 cm, although some foundations were thicker, in the range of 100-120 cm. The foundations run very deep, usually to at least 1 m below the uppermost course of stones. The width and depth of foundations were correlated with the width and height of the walls supported. The stones were generally carefully cut with at least one dressed face, laid carefully to form noticeably straight foundations. Walls were generally constructed of *tapia* or rammed earth, but in some cases adobe bricks were used. Floors were either earthen or covered with *baldosas* (brick floor tiles); occasionally cobblestones arranged in decorative patterns were used. Roofs were thatched or covered with *tejas* (ceramic roof tiles) laid over a wooden framework.

Structure 4D1

The first structure to be excavated in the 1996 season was the substructure platform of the *cabildo* or town hall building, designated Structure 4D1. The interpretation of this structure as the *cabildo* is based on the known locations of *cabildos* in other Conquest-period Spanish American towns, usually on the north side of the plaza. In some cases, municipal buildings were located on the south or the west, but we have no good candidates for the *cabildo* on those sides of the plaza at Ciudad Vieja. Located at the northwest corner of the main plaza ([Figure 3](#)), this is an elongated, rectangular platform measuring 8 m in width (north-south), 32 m in length (east-west), and 1.3 m in height above the surrounding plaza. The structure is oriented at 12°.

The entire summit of the platform was stripped clear of its shallow overburden, revealing the foundations and floors of four interior rooms. One room was paved with cobblestones and another with *baldosas*, while the other two, probably for storage, had earthen floors.

The platform faces south, with steps on that side leading down to an open space bordering the north side of the plaza. These steps were constructed in and around a series of large andesite boulders that were incorporated into the construction and also formed part of the interior fill. We know of no Spanish civic structure that was built in this way, and this would appear to be an indigenous building technique. Likewise, the linear, rectangular shape of the platform is reminiscent of Postclassic structures in central El Salvador.

Additional excavations of the *cabildo* platform were conducted for CONCULTURA by Roberto Gallardo in 2001 and 2002 and Herbert Erquicia in 2003. They discovered an earlier construction level below the platform, lending support to the hypothesis of the 1525 settlement of the first villa in this location.

Structure 6F1

During the 1998 and 1999 seasons, excavations focused on four structures in the 6F quadrant, in the northern sector of the site that appears to have been a high-status Spanish neighborhood. This zone of the site was chosen for extensive excavation in order to attempt to identify the range of activities within a single neighborhood outside of the center of the city. The structures were contained within a single solar and built on top of an extensive terrace which covered the entire solar. Excavation of Structure 6F1 was directed by Roberto Gallardo of CONCULTURA and the University of Colorado. Located approximately 200 m north of the northeast corner of the main plaza, this was a large elite Spanish residence with sleeping rooms, an interior courtyard, and storage facilities. The structure was polygonal in shape, with the exterior walls measuring 44.2 m on the east, 18 m on the north, 33.4 m on the west, and 20.15 m on the south. The east wall was oriented at 12°, but the other walls varied somewhat from the overall site orientation. The main exterior entrance faced east toward a street that ran north-south in front of the structure, with a secondary entrance on the south. The entranceway floor was paved with cobblestones. Most of the interior patio was floored with *baldosas* and roofed with tiles, as were the three rooms on the north. The latter are interpreted as sleeping rooms. Four rooms on the west wing of the structure showed no evidence of *baldosas* or roof tiles, leading to the inference that they had earthen floors and thatched roofs. These are interpreted as storage rooms, probably for the storage of tribute commodities.

Structure 6F2

This structure, located just to the north of Structure 6F1, was excavated by Fowler in 1998. It is rectangular, composed of three rooms aligned east-west. Overall exterior dimensions are 7.4 m in width (north-south) and 19 m in length (east-west). The central room contained the remains of an artesanal iron-working furnace, iron slag and debris, carbon, and ash. A number of finished iron objects such as a horse bit, a chisel, and many nails were recovered. The function of the other two rooms could have been for storage or sleeping, but almost certainly associated with the activities of the blacksmith who worked and likely lived here. An open gallery with a tiled roof was attached to the north side of the structure. This could have been a stable. We hypothesize that the iron working here was under the patronage of the high-status resident of Structure 6F1.

Structure 6F3

Excavated in 1999 by Georgia West of SUNY-Albany, this small structure was discovered in test excavations on the east edge of the 6F terrace, approximately 60 m to the east of the principal entrance of Structure 6F1. Two small adjacent rooms were revealed, one measuring 6 × 12 m (east-west) and the other 4 × 7.8 m (north-west). One of the rooms contained the intact remains of a large earthen beehive-shaped oven filled with carbon and sherds. A dense sheet midden was found eroding from the base of the east edge of the terrace. These findings lend further support to the possibility of the 1525 settlement being in this location.

Structure 6F4

Excavated during the 1999 season by Card, this structure was located directly in front of and across a narrow street to the east of Structure 6F1. The central room of a west-facing multiroom structure was excavated. Its dimensions were approximately 7.5 × 10.5 m, with the long axis running north-south. The room had an earthen floor and thatched roof. A zone of the earthen floor was burned in the north end of the room, and the presence of a mano and metate, and sherds of several large plates attest to a function of this room as a food-preparation area. Furthermore, just to the south of the room, we discovered and excavated part of a midden deposit with a great many animal bones. Faunal species from this deposit identified by Elizabeth Scott of Illinois State University include pig or javalí (*Sus scrofa/Tayassu tajacu*), dog (*Canis familiaris*), rabbit (*Sylvilagus floridanus*), deer (possible) (*Odocoileus virginianus*), cattle (possible) (*Bos taurus*), chicken (possible) (*Gallus gallus*), turkey (possible) (*Meleagris gallopavo*), frog (*Rana spp.*), and catfish (*Galeichthys spp.*), indicating a varied protein diet. Since no kitchen area was found associated with Structure 6F1, we hypothesize that this room of Structure 6F4 served as the food-preparation area for the residents of Structure 6F1.

Structure 1D1

This structure was excavated by Conard Hamilton with the intent of testing a possible non-Spanish structure. Located outside the city proper atop a small hill, approximately 40 m to the south of the south boundary of the formal grid plan and oriented at 20°, the structure measures approximately 6.3 × 7.3 m (east-west). It had a thatched roof and earthen floor. A significant concentration of obsidian artifacts recovered from this structure, including an arrow point, suggests the presence of Indian occupants. The absence of cooking/serving vessels and grinding stones would seem to preclude a domestic function. The location outside the city on a hill with a good view in all directions suggests a military function as an observation post, and the lack of Spanish-associated traits suggest that this structure was possibly manned by Tlaxcaltec troops.

Structure 2F1

Situated on the eastern end of a terrace on the southern periphery of the site, barely within the eastern limits of the city proper, this structure, excavated by Conard Hamilton in 1999, is quite different from known Spanish structures closer to the center of the city. It has irregular dimensions, approximately 5.5 m north-south and 10.5 m east-west. The orientation of each foundation wall is also irregular with the east wall at 8°. Its foundations were formed by single rows of large, uncut stones. The roof was thatched, and the floor was earthen. Two spindle whorls were recovered from within the structure. Obsidian artifacts were prevalent here, including several arrow points. All these characteristics plus the location of the structure strongly suggest a non-Spanish presence. It is quite possible that the sector of the site was an indigenous barrio, but this possibility needs to be tested by further excavations.

Structure 3D1

Excavated in 2001 by the authors, this was the first of several structures to be investigated on the southwest corner and the south side of the plaza where efforts are now being focused. Textual evidence suggests the presence of commercial structures "on the plaza" in San Salvador (Altman 1991), and we propose that they were located in this area. Located approximately 150 m south of the *cabildo* and just off the southwest corner of the plaza, this structure was initially identified on the surface by a very dense concentration of roof tile fragments. Approximately 50% of the structure was excavated. While the exact dimensions of the full structure are unknown at this point, the excavated portion measures approximately 12 m east-west and 20 m north-south. The orientation seems to conform to the overall grid plan of 12°. The structure was built on a very deep platform of solid stone construction running to a depth of 103 cm. No internal room divisions were found, suggesting a single, one-room, nonresidential structure. The roof was tiled, and the floor was adorned with deep red floor tiles forming a checkerboard pattern. All in all, the architectural features suggest a special-function structure rather than a residence, and a commercial function is a strong possibility. As discussed below, this structure has a high incidence of imported Spanish pottery (including a large number of olive jar fragments, a fragment of Columbia Plain majolica, and a Caparra Blue majolica drug jar), and it has the highest percentage of brimmed plates associated with it, making up 29% of all vessels with an identifiable form.

Structure 3D2

The subsurface remote sensing conducted in 2002 indicated numerous linear and rectilinear anomalies representing a street and a number of structures on the south side of the main plaza (Bales, Reynolds, and Kvamme 2003; Reynolds and Bales 2003). Recognition of these features substantially changed our view and understanding of the plaza, and, more importantly, none of them was visible on the surface. Especially

interesting was an apparent structure with three rooms in a north-south alignment forming the interior southwest corner of the plaza and a series of attached rooms to the east.

Excavations began here, directed by Fowler, in January 2003. We found another blacksmith's shop on the southwest corner of the plaza, an adjacent food-preparation area and charcoal manufacturing area to the east, and a street that enters the southwest corner of the plaza, turns at the corner of the blacksmith's shop, and runs toward the southwest corner of the church platform. This cluster of rooms was designated Structure 3D2 ([Figure 5](#)). The blacksmith's shop on the corner measures approximately 18.5 m north-south and 6.7 m east-west. The furnace was located in the northern room. It was associated with a long, narrow tempering tank constructed in the floor, apparently for tempering swords. Adjoining this structure was a large, open room measuring 12.2 m east-west and 7.1 m north-south. Here we found a number of partial and complete cooking and serving vessels. Smaller rooms continue to the east. We interpret this cluster of rooms on the south side of the plaza as a market/industrial area producing and selling iron tools and weapons, food, and probably many other items as well.

The Ceramics of Ciudad Vieja

Overview

One of the most concrete manifestations of culture change at Ciudad Vieja can be found in the locally produced ceramic vessels, in particular, those used for serving and eating food. Barring the specific depredations experienced by those enslaved or otherwise oppressed in the villa of San Salvador, food consumption occurred several times every day, in every household in town, during the occupation of the site. The regularity of consumption means regular replacement of broken, or sometimes, out of fashion, serving vessels and implements. Furthermore, while eating can be a simple affair, or an intimate one, dining can also be an important social, political, or even ritual activity.

The vast majority of pottery used at Ciudad Vieja was of local production by indigenous potters. Spanish potters had barely begun work in the American colonies during the occupation of the villa of San Salvador, at La Isabella in Hispaniola (Deagan and Cruxent 2002), and probably in México City after 1530 (Lister and Lister 1982), but these industries do not seem to have had much impact on Ciudad Vieja. Spanish pottery makes up only a small percentage of the Ciudad Vieja ceramic collection. Transport vessels, in the form of cheap *amphora*-like "olive jars" used for moving liquids or grains over land (Goggin 1960; Marken 1994), and majolica drug jars containing medicines (Lister and Lister 1987), are the most common of the imported ceramics. The olive jars provide the best artifact-based evidence for agreement with the historically-documented occupation and abandonment dates of the villa de San Salvador. The excavated examples all correspond to the Early Period of thin-walled spouts, with no

examples of the Middle period thick "donut" necks (Deagan 1987, Goggin 1960). We have not recovered any Ming porcelain from Ciudad Vieja, which began to appear in Central America and New Spain after A.D. 1572.

A small number of tin-glazed majolica serving vessels, *escudilla* bowls and brimmed plates, was imported from Seville (Deagan 1987; Goggin 1968), represented in the ceramic assemblage by a handful of sherds. The lack of Spanish utilitarian household ceramics, especially cooking vessels, is a pattern replicated throughout the colonies (McEwan 1992). A major factor for this pattern is most likely based on gender; that is, men made up the bulk of European immigrants to the Spanish colonies during the first decades of the Conquest. Indigenous women would have been the primary cooks of San Salvador, and not surprisingly, as is the case in other Spanish colonies, food preparation vessels show the greatest continuity from pre-Conquest times (Ewen 1991).

The following analysis is composed of three parts: The first is a preliminary but comprehensive descriptive classification of the indigenous ceramics that make up the majority of artifacts recovered from Ciudad Vieja. In addition to being of interest in understanding the Villa de San Salvador and the beginnings of colonial society in Central America, this classification will be of interest to archaeologists studying Postclassic sites in the region. While analysis is still underway, relationships to previously published types are presented where possible.

The second part is a short discussion of imported European ceramics found at Ciudad Vieja. The small quantity of olive jars and majolica are important for cross-dating, and for understanding some of the transformations in indigenous craft manufacture during the early sixteenth century.

The third section is an overview and introduction to an analysis of one of the most intriguing elements of material culture at Ciudad Vieja; indigenously produced serving vessels that incorporate stylistically the form of imported European majolica plates. These *colono* ware vessels were given particular attention because of what they may reveal about the contact between Mesoamerican and European cultures. In addition to being valuable chronological markers in their own right, and a physical manifestation of cultural hybridization very early in the phenomenon of the Spanish Conquest, we have found that the hybrid plates of Ciudad Vieja also reflect a major element of the indigenous community of the villa of San Salvador. (See [Figure 6.](#))

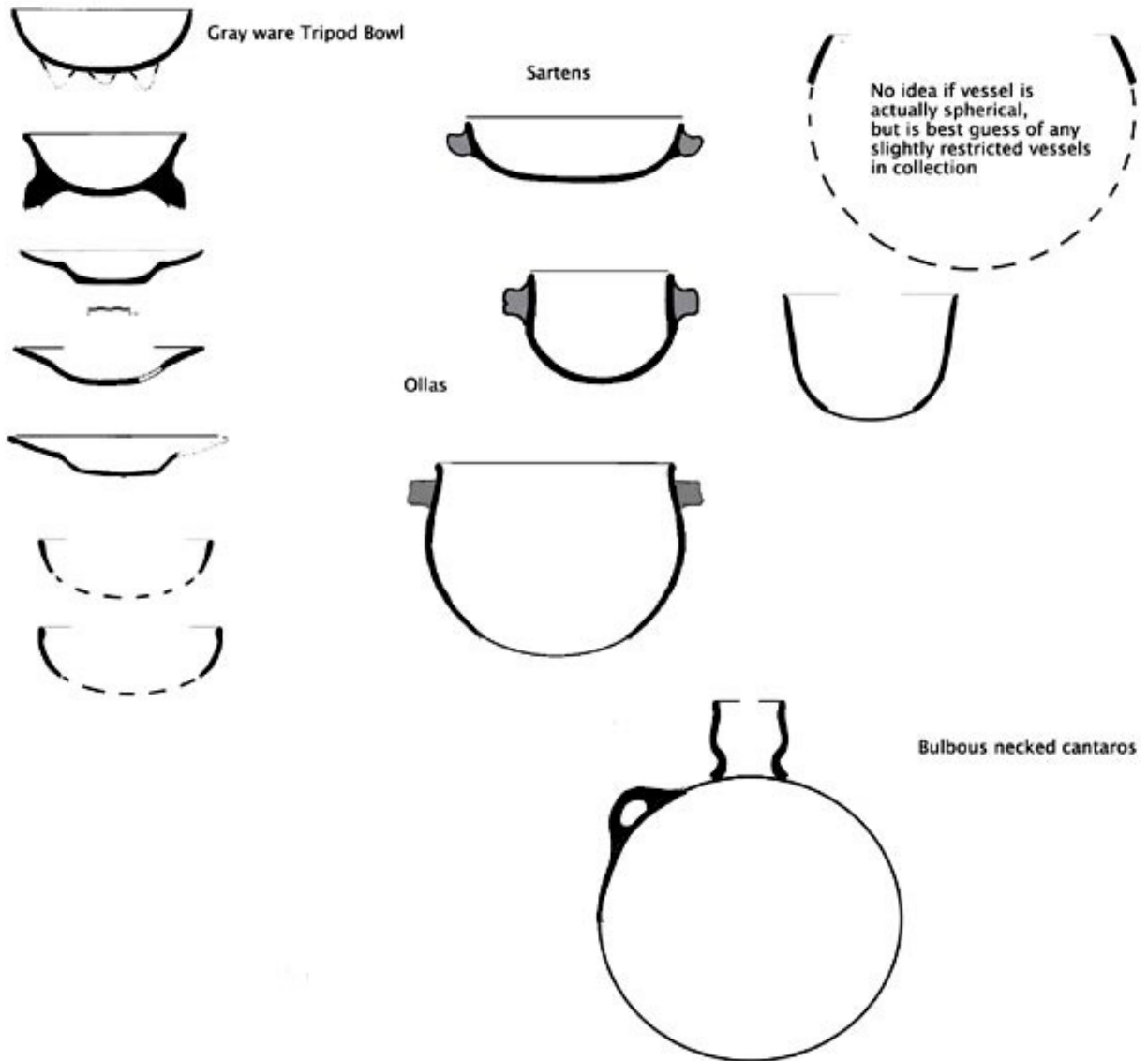


Figure 6. Some examples of ceramic vessels from Ciudad Vieja, all to scale.

Methodology

A nested hierarchy of analyses were conducted during the study of the Ciudad Vieja ceramic collection. These include the following:

Type Description – described below. This is the most basic analysis of the Ciudad Vieja collection. Preliminary group and type descriptions are included in this report, more detailed attribute analysis and tallies are in process. A preliminary estimate of roughly 10,000 sherds were analyzed in full for type description, with an additional estimated 15,000 sherds classed to type within the primary ceramic group. A separate database of

handles, and another of tripod supports, classified by form and metric attributes, were created to aid in this analysis.

Plate Data Base – Detailed analysis of sherds from 618 hybrid *colonware* plates produced by indigenous potters, but using European plate forms. Methods and results included in this report.

Form and Function – Detailed analysis of rim form and other evidence for the use vessels. 1,900 rim sherds were classified by rim profile (at least 1,023 rim sherds were individually drawn by Card, the remainder were classified as sufficiently similar to those drawn), and additional metric measurements (orifice diameter, vessel wall thickness, vessel wall angle) and non-metric measurements (presence and type of handle, sooting or other evidence of use). Classification of these vessels into form categories and potential functional categories is underway. Correspondence analysis of presumed excavated activity areas using preliminary form categories has yielded some interesting results in comparison with other architectural and artifact evidence, but more work is needed.

Preliminary Group and Type Descriptions

Data Collection

The following information was recorded for each sherd analyzed in full:

- ◆ Description – Preliminary classification by ware, texture (primarily, fine or coarse, as defined below in the Alvarado description).
- ◆ Form – One of several hundred rim profiles for rim sherds, otherwise, a general description if applicable.
- ◆ Portion – Rim, neck, handle, body, base, support.
- ◆ Appendage – Form of handle or support, if applicable.
- ◆ Exterior Surface, Interior Surface – Surface treatment (not treated in this report, under analysis for full classificatory description).
- ◆ Motif – Painted or other decoration, if applicable (not treated in this report, under analysis for full classificatory description).
- ◆ Count – Number of sherds sharing all other variables in a lot. Sherds that could be identified as belonging to the same vessel are conflated into individual "vessels" for the purposes of this analysis.
- ◆ Weight – Weight of all sherds sharing all other variables in a lot.
- ◆ Notes – Miscellaneous notes, including core morphology and color (not treated in this report, under analysis for full classificatory description).

Fuller analysis, including at the level of variety and of the range of forms for each specific type and variety, is ongoing.

Sampling

All lots were initially screened through a plastic 1.5 cm mesh. All sherds smaller than 1.5 cm were tallied and weighed with no further analysis.

All diagnostic sherds of the primary Alvarado group were analyzed in full (rims, handles, bases, *tapas*, sherds with paint or other form of decoration, slips of a color other than the paste body). In addition, all sherds that could be identified as being from plates were analyzed. All potsherds that were picked out during sampling as being of a group other than Alvarado were also analyzed.

Of the remaining nondiagnostic sherds (non-decorated Alvarado group body sherds), 15% (sampled for each lot, rounding up) were sampled for full analysis. In the case of Figueroa type sherds, these were sampled separately, so as to maintain a record of the full count of Figueroa sherds versus normal Alvarado sherds.

In practice this strategy resulted in full analysis of roughly 40% (by weight) of Alvarado group sherds, and roughly 50% of all sherds (by weight). Since all non-analyzed sherds are non-diagnostic body sherds, we feel confident that this sample is sufficient for understanding the Ciudad Vieja collection.

Late Postclassic/Conquest Component

Alvarado Group:

The Alvarado group encompasses the most commonly encountered ceramic vessel artifacts at Ciudad Vieja, and may only be eclipsed in all artifact categories by ceramic roof tile fragments associated with structures built in Spanish style. Artifact tallying is still underway, but a preliminary overview of the collection suggests that 80+% of all ceramic vessel artifacts recovered from Ciudad Vieja belong to the Alvarado group.

The following types are part of the Alvarado Group:

- ◆ Alvarado–Alvarado
- ◆ Alvarado–Oliveros
- ◆ Alvarado–Figueroa
- ◆ Alvarado–Peñacorba
- ◆ Alvarado–Castellon
- ◆ Alvarado–Sandy

Paste (for all Alvarado with stated exceptions):

General Description: Alvarado paste can be divided along two axes: inclusion density (coarseness) and color.

Inclusions: A wide variety of inclusions are found in Alvarado sherds, including small fragments of obsidian, quartz, grog, and small red ferric inclusions, and small unidentified black minerals. However, the primary inclusion is white volcanic pumice. Under 10x–20x magnification, inclusion particles were recorded in the size classes of Medium Sand (2.0–0.43 mm) and Fine Sand (0.43–0.08 mm) in the Unified Soil Classification System (USCS). The density of particles in each of these size ranges was then estimated through visual comparison with a density chart.

Alvarado paste was broken into two basic groupings (coarse & fine) based on the density of medium sand-sized particles. Sherds presenting an estimated 3% or less of medium sand particles were classed as Fine Alvarado, while all other sherds were classed as Coarse Alvarado.

Color: Alvarado paste can range from brown to nearly cream/white, but the bulk ranges from a light brown to reddish yellow, and would be considered "buff."

Observation of partial vessels and large sherds shows that Alvarado paste color can change quite dramatically within a single vessel, especially in terms of lighter and darker shades, but also in hue. The basic color difference that was used in classing Alvarado paste was the presence of a reddish tinge to the paste. Alvarado sherds that did not present a significant reddish or yellowish tinge were classified as Pale Alvarado. Such sherds range from a very light to a medium brown. Sherds that did present a yellowish or reddish tinge were classed as Orange Alvarado. In some cases, orange is a proper description for these sherds, but in many cases a yellowish brown is more accurate. While it is possible that in some cases, vessel integrity will be violated by the differentiation of orange and pale Alvarado, some vessels show that while chroma and value may change, basic hue is somewhat more resistant. This is why subtle shifts in hue/chroma were chosen over more obvious differences in value. However, due to these uncertainties, differentiation based on color is subordinate to differentiation based on inclusion particle size and density.

Most common colors (Munsell):

- ◆ Orange: 5YR 5/6, 6/6
- ◆ Pale: 7.5YR 5/4, 6/4, 7/4; 5YR 6/4
- ◆ Brown: 5YR 4/3; 7.5YR 5/4

Types

Alvarado–Alvarado

General attributes: Self-slipped buff to orange vessels. Wide variety of forms. Red painted geometric decorations on water bottles (cántaros) and serving vessels (mostly hybrid-form plates, some bowls).

Paste: See above.

Surface treatment: Typically smoothed, burnished, or polished. Interior of water bottles are distinctively scraped. Most examples are probably self-slipped.

Decoration: Some *cántaros* (specifically, pale/buff vessels with recurve bulbous necks are decorated; a separate class of typically orange-paste "trumpet" outcurving necked *cántaros* are undecorated) and serving vessels were decorated with red (10R 3/6, 4/4) painted geometric designs. Plates and bowls most commonly have parallel lines arranged perpendicular to the rim of the vessel (vertical in bowls, pointing inward in horizontal plates). More varied designs are found in small numbers. Most bowls have a solid red rim band. *Cántaros* are divided into three zones for the purposes of decoration. The neck (if bulbous, see below) may have a diagonal set of zigzag lines surrounded by straight lines perpendicular to the zigzag. The shoulder of the vessel is covered with a field of red paint intersected by non-painted "channels" of vessel surface color that form angular abstract or scroll motifs. The lower body of the *cántaro* below the shoulder is mostly unpainted, but includes vertically descending red painted wide stripes or pennants. This decoration scheme is very similar to that of Early Postclassic Nunuapa Red-Painted–Nunuapa *cántaros* of Chalchuapa (Sharer 1978:60, Figure 30e:1-3).



Figure 7. Alvarado–Alvarado red-painted *cántaro* (with the rarer vertical stripe motif, instead of triangular pennants).

Forms: Wide variety of storage and/or cooking (incurving, straight-walled, and short-necked jars; *comal* griddles; shallow *sartén* frying pans), transport (*cántaros*), and

serving vessels (hybrid plates, bowls). *Cántaros* have vertical strap handles, but strap handles (both vertical and horizontal) are used on a wide variety of forms. One form is unique to Alvarado–Alvarado, the zoomorphic support tripod bowl.

Discussion: Based on Amaroli (1992) as well as observation and study of pottery from the Río Ceniza valley, in the Izalco region (Kathryn E. Sampeck, personal communication, 2002), both Amaroli's Cuscatlán and Teshcal groups seem to bear a similarity to the Alvarado group. Amaroli (1992:12-13) described the paste of the Cuscatlán group as, "*café rojizo a café amarillento claro ('bayo'), sin núcleos, con partículas entre rojizas a negras, redondeadas y angulares, de 1 mm o menos. Densa pero no excepcionalmente dura.*"

Amaroli's Cuscatlán group is found in the same area of central El Salvador that includes Ciudad Vieja, and other elements of the group (form, decoration) are in agreement. While the medium sand classification used in the description above ranges to 2 mm, the bulk of particles in this class in the observed ceramics are closer to 1 mm in size. Alvarado group ceramics can present lighter or less oxidized cores, but this attribute does not occur on a regular enough basis to be diagnostic. However, Amaroli's description of the paste of Teshcal group ceramics, found primarily in the Izalcos region, is difficult to segregate from that given for Cuscatlán. Teshcal paste is "*café rojizo medio hasta claro, con partículas heterogéneas oscuras, redondeadas y angulares, de 1 mm o menos*" (Amaroli 1992:15).

From this description, it would appear that Teshcal ceramics are perhaps slightly less yellowish (though still reddish) than Cuscatlán ceramics. Both are generally burnished but not slipped. Instead, the primary difference seems to be one of form (Teshcal vessels are typically bowl-shaped) and decoration (durability of paint, design motifs). Observation and study of sherds classified as Teshcal by Sampeck in the Río Ceniza valley (Kathryn E. Sampeck, personal communication, 2002) suggests that those materials show similarities to Alvarado–Alvarado. It therefore seems unfeasible, at this point, to make a differentiation.

Overall, all of these types are sixteenth-century variants of a general red on natural buff tradition in Postclassic El Salvador that includes Nunuapa Red Painted from Sharer's (1978) Early Postclassic Matzin component and Late Postclassic Marihua Red on Buff (Haberland 1964).



Figure 8. Alvarado–Alvarado sartén.

Alvarado–Castellon

Distinguishing characteristics: Similar to Alvarado–Alvarado, but show evidence of being solidly slipped red. Emphasis on hybrid plate forms.

Alvarado–Figueroa

Distinguishing characteristics: Harder variety of Alvarado group paste.

Paste: Upon visual inspection, appears identical to normal Alvarado ware paste. However, the paste is harder than that of the larger Alvarado group, and requires more force to break. When broken, does not typically fragment or crumble, instead produces clean breaks and "sharp" edges. Sherds will clink or ring when tapped with or against a hard surface.

Form: Wide variety, like Alvarado. Body is slightly thinner than that of typical Alvarado vessels.

Surface: Polished or burnished. May be particularly lustrous but may also be relatively matte. Burnishing can in some cases be sloppy, or slightly linear, but Figueroa is not characterized by linear burnishing.

Decoration: Similar to that of Alvarado–Alvarado, though less commonly decorated.

Discussion: The hardness may be due to particularly intense polishing or burnishing (but see Figueroa), or it may be due to higher firing temperatures. Found at a few other locations on site, but the bulk of the type was found in and around Structure 3D2. The occurrence of an iron forge within this structure has suggested the possibility that Figueroa vessels may result from firing at higher temperatures within the forge, but this suggestion requires additional excavation elsewhere on site, and possibly physical testing, for confirmation.

Alvarado–Peñacorba

Distinguishing characteristics: Hard paste like Figueroa. Linear burnishing. Darker color. Emphasis on utilitarian forms.

Paste: Extremely hard, even harder than Figueroa. Unlike Figueroa, Peñacorba differs from the standard Alvarado population by tending more to the brown and black, either through reduction firing or through use. Rings when struck, does not crumble, breaks with clean and sharp edges.

Form: Includes most forms in the Alvarado inventory, but with an emphasis on utilitarian cooking wares. Whether this is a primary characteristic of the type, or if this reflects the activities of the activity area within which the type is found (see Discussion), or both, is uncertain.

Surface: Some surfaces can be highly polished, but the primary distinguishing characteristic of Peñacorba is intensely burnished surfaces, usually linear burnished (with some gaps left between burnishing facets).

Decoration: Some serving vessels are decorated, but the emphasis on utilitarian vessels leaves most Peñacorba vessels plain.

Discussion: While firing may play a role in the hardness of Peñacorba paste, the intense burnishing must also play a role. With perhaps one or two exceptions (individual sherds), this type was found exclusively in Structure 6F4. Excavation of other middens

at Ciudad Vieja, have turned up cooking vessels in large quantities, but not the Peñacorba type. This suggests that, while there may be a functional element to the presence of Peñacorba as a primarily utilitarian cooking ware, the exclusive distribution of the type at Structure 6F4 may reflect either a chronological difference, and/or evidence for localized production of these vessels for the kitchen at Structure 6F4, and/or evidence for a different distribution pathway for ceramic vessels to Structure 6F4 than the other excavated areas of the site. The form of a number of Peñacorba ollas, and the linear burnishing, show strong ties to, or possibly a local variant of, the protohistoric Joateca type from Chalchuapa (Sharer 1978: 64-65).



Figure 9. Alvarado–Peñacorba rim sherd. Note darker brown color, and distinctive burnishing marks.

Alvarado–Oliveros

Distinguishing characteristics: Crumbly paste, often brown. Low quantity of inclusions, but unlike well-sorted Fine texture vessels, the lack of inclusions makes these crudely formed vessels friable. Utilitarian vessels, rarely decorated. Type classification still in process.

Alvarado–Sandy

Distinguishing characteristics: Perhaps a variant of Alvarado–Alvarado. Higher quartz sand/grit content. Surfaces erode more easily, and when handled leave substantial sand dust. Some examples of large compound sartén cooking pans have a thin red or orange wash or slip on vessel exterior. Otherwise, similar to Alvarado–Alvarado Coarse.

Possible Types Within the Alvarado Group

The following three types may be part of the Alvarado group, but some paste differences led to initial separate classification.

Salvago

Distinguishing characteristics: Similar to Alvarado–Figueroa–Coarse, typically orange in color. However, Salvago has only low quantities of medium-sized white pumice fragments, a major element of the standard Alvarado temper mix. A large number are from cántaro vessels, but the paste can occur in other forms.



Figure 10. Salvago cántaro.

Bonifacio

(Name derived from personal communication from Kathryn E. Sampeck, 2002)

Distinguishing characteristics: Likely part of Alvarado–Alvarado, some examples have Salvago-style paste, leading to initial separate classification. Otherwise, is a variant of the Alvarado–Alvarado painted cántaro described above. Decorated with a trichrome pattern large red fields on *cántaros*. In between these painted fields are channels of the underlying pale to orange paste color. Within these channels are medium to thin painted black lines that run parallel to the edge of the channel/red fields. It appears to be analogous to Early Postclassic Chamula Polychrome from Chalchuapa (Sharer 1978:60).



Figure 11. Bonifacio Polychrome sherd.

Holguín

Distinguishing characteristics: Brown-black reduced fine paste, though not friable like Alvarado–Oliveros. Utilitarian "sack" vessels, tab or small horizontal strap handles.

Paste: Finely tempered, but since most examples are burnt or reduced to a dark brown or black, classification is somewhat difficult. Lacks the medium white pumice of most Alvarado. Not friable like Alvarado–Oliveros.

Color: Typically dark brown or black on exterior (7.5YR 3/2, 5YR 4/2, 5YR 3/1). Interior can be a well smoothed pale or brown (7.5YR 4/2, 5YR 4/2).

Decoration: None

Surface treatment: Interior generally smoothed or lightly polished. Exterior usually burnished below shoulder.

Forms: Utilitarian open-mouthed cooking vessels, often with relatively straight walls ("sack" vessels). Small tab or horizontal strap handles are located below rim.

Discussion: Very similar to Pantaleón vessels at later sixteenth-century Caluco in western El Salvador (Verhagen 1997; Kathryn E. Sampeck, personal communication, 2002).

Non-Alvarado Groups

Fine Gray Ware

Distinguishing characteristics: Extremely fine gray to brown paste. Highly polished and lustrous surfaces. Incurving bowls, potentially with tripod supports.

Paste: An extremely fine gray, dark gray, or brown. Temper is completely fine in size, and in some cases virtually non-existent. Cores can take up much of clay body.

Form: Incurving or slightly incurving bowls are the only form for this group. No handles, tabs, or lugs. The most complete example has scars from tripod supports, but there is no evidence as to the size or form of the supports.

Surface treatment: Extremely well polished interior and exterior, with a slightly streaky quality when it comes to color variation in the vessel. Some examples have scorching or fire-clouding on the bottom of the interior and exterior of the vessel, but whether this is due to firing or use over a fire is unknown.

Decoration: None.

Discussion: One of the major non-Alvarado groups at Ciudad Vieja. Present in low but persistent quantities in most excavations. William Fowler and Howard Earnest (personal communication) suggest potential match to the gray bowl tradition of Oaxaca (Fowler) or possibly Puebla (Earnest). There does seem to be some general similarity in regards to form for Late Postclassic Bowls (see Markens 2004 for Chila phase grayware tripod bowls), but personal communication with archaeologists working in Oaxaca (Joyce

Marcus, personal communication, 2003) has contradicted this. At this time, potential connections to other regions of Mesoamerica must wait for further analysis. If the Fine Gray bowls are eventually tied to another region, one possible explanation for their presence may come from the presence of Mexican auxiliary troops at Ciudad Vieja. All of the vessels are medium sized bowls, somewhat incurving in most cases. A few examples suggest possible use over a fire, but the bowls would also be quite suited to serving and consumption of food. Perhaps these bowls were a form of mess kit for warriors on the move in a long-distance campaign, serving as 2-in-1 cooking and dining bowls for Mexican men cooking for themselves and with no desire to carry a larger array of food preparation vessels.



Figure 12. Fine Gray ware bowl. This is the only known tripod example.

Usagre

Distinguishing characteristics: Thick (around 1 cm) vessel walls. Gray to slightly yellowish paste (not the same as Fine Gray bowls). Primarily quartz and pumice temper. Thick loop handles. Utilitarian jars or bottles. Thick, dark gray cores.

Paste: The paste itself seems finer and denser than that of Alvarado, also more easily eroded. Tempering can be fine or coarse, but temper is primarily quartz and pumice, and not the more varied mix of the Alvarado group. Vessel walls are thick, typically around 0.75 cm, but ranging from 0.57–1.78 cm (10 examples). Roughly one-quarter (11 of 45 examples), has a thick dark gray core (10YR 4/1, 5/1). Vessel color is generally a light gray to dirty white, with some hint of yellow in a few cases (10YR 5/4, 6/3, 6/4, 6/6, 7/2, 7/3, 7/4, 7/6, 8/1, 8/2, 8/3, 8/8).

Form: Only one rim (Rim 1340) was recovered for this type, an open, nearly flat vessel with a tapering rim (Rim Form 722) with an orifice diameter of 28 cm. However, the recovered body sherds indicate that most Usagre vessels had globular incurving bodies. Five handles were recovered; two loop handles, and three strap handles. While no neck fragments have been recovered, one-quarter (11 of 45 examples) are scraped on the interior, a feature associated with *cántaro* water bottles at Ciudad Vieja, and an additional two examples have rough non-smoothed interiors.

Surface treatment: Exterior generally polished (21 examples), smoothed (12 examples), or burnished (6 examples). Interior surfaces roughly split between scraped (11 examples), polished (11 examples), and smoothed (8 examples).

Decoration: One vessel had a light orange wash applied to the interior and exterior of the vessel, and another had a remnant of red paint on the exterior, but otherwise, the surfaces are not slipped or painted.

Discussion: Preliminary analysis suggests a possible link to one of Sharer's (1978:75) special minority types, Crude-unslipped, from the Late Postclassic to Protohistoric Ahal component of Chalchuapa.



Figure 13. Usagre vessel.

Bermúdez

Distinguishing characteristics: Fine soft orange paste. Typically completely red slipped.

Paste: Finely tempered, lacking the medium sized tuff/pumice inclusions of the Alvarado Group. Paste is orange, very soft and easily eroded. In at least one case, firing core occupied nearly entire body, with a dark gray in one half of vessel, while in another paste is strongly orange.

Form: Primarily *colono* plates (Italianate, as well as two of the Morisco plates). Two examples of scalloped rim bowl, also influenced by European ceramics and glassware. Pedestal foot (possibly for cup, but may also be in imitation of footed plates and dishes of Italianate Majolica tradition). Exterior knob appliqué. Bowl. Handled vessel, likely bottle or necked jar (forms H2, H13 vertical).

Surface treatment: Usually covered interior and exterior with a thick, soft, red slip. The slip may be burnished or especially polished, but in other cases, is simply applied and not further treated. In some cases the exterior is not slipped, though after polishing, the strong orange color of the paste, after polishing or burnishing, may be difficult to distinguish upon initial observation from the interior slip.

Decoration: Typically undecorated red slip. One example with what may be a resist pattern of lines perpendicular to the interior brim of colono plate. One example with two horizontal black lines.



Figure 14. Bermúdez colono ware plate.

Discussion: Besides the Fine Gray Bowls, this is the only other major non-Alvarado ware at Ciudad Vieja. Part of the Postclassic red bowl tradition in El Salvador (Cihuatán, Izalco). Appears related to the Postclassic and possibly protohistoric Guajoyo Red-brown from Chalchuapa (Sharer 1978:62-63) and García Red from Guazapa-phase Early Postclassic central El Salvador (Fowler 1981:163-178). Classified by Sampeck (personal communication, 2002) as Teofilo (Verhagen 1997), but there are some significant paste and slip differences. Scalloped rim bowls and presence at Caluco raise the possibility that this may be a somewhat later group than Alvarado, but it is equally

plausible that both Alvarado and Bermúdez date to the entire Ciudad Vieja occupation, and Bermúdez simply thrives somewhat more either in the west, or later in time.

Catalina Red-on-White

(derived from Verhagen 1997 and Kathryn E. Sampeck, personal communication, 2002)

Distinguishing characteristics: Brick Red Paste. White, cream, or light tan slipped interior, tan slipped exterior. Broad red rim band. Geometric red designs.

Paste: Typically, though not always, brick red paste (exception is a light brown), relatively fine.

Form: Open bowls or deep dishes.

Surface treatment: Interior slipped cream/white or light tan. Exterior slipped either cream/white, or tan. The white/cream slip may be an earlier feature, becoming less common through time, especially during and after the Conquest. Usually polished on both surfaces, or well-smoothed.

Decoration: Broad, clean-edge, red band on interior and exterior of rim. From Ciudad Vieja materials, decoration is difficult to describe beyond being red geometric. However, comparison with Sampeck's materials from western El Salvador show more detailed designs, including step-frets and scrolls, than those of the Alvarado group.

Discussion: In Kathryn Sampeck's work in the Izalcos region (type defined as part of this work, Sampeck, personal communication, 2002), it seems that Catalina is the precursor of the Protohistoric Teshcal group (Amaroli 1992). Given the obvious similarities between Teshcal, the Cuscatlán group as defined by Amaroli (1992), and the Alvarado group, Catalina is presumably ancestrally related to all of these Postclassic (Haberland 1964) and Protohistoric red-on-buff traditions. However, the scarce two sherds of Catalina Red-on-White found at Ciudad Vieja suggest it may be an isolated trade/carry ware.

Early Postclassic Component

In addition to the primary Late Postclassic/Contact component, a smattering of sherds of Early Postclassic date (Cobos 1994:74-85) have been found in isolated contexts, including white-slipped Nicoya Polychromes, Las Lajas, and Tohil Plumbate, all of which are part of the Early Postclassic Guazapa ceramic complex defined by Fowler (1981:117-269) at Cihuatán, El Salvador. However, to date, no actual deposits dating to this period have been found at Ciudad Vieja.

Late or Postcolonial Component

Crudely formed massive "comma"-rimmed comales and sugar straining vessels are found primarily on the surface at Ciudad Vieja, though occasionally in excavated contexts. Further classification of these sherds is ongoing, but they are currently classified as a 19th–20th century type called Telesforo in western El Salvador (Sampeck, personal communication, 2002). The thick walls of these vessels (typically over 1 cm, double or more the average thickness of protohistoric vessel walls) make for relatively easy identification.

Type Classification: Discussion

Overall, the bulk of Ciudad Vieja pottery is not a major departure from that of the Early or Late Postclassic, with ties to groups defined at Chalchuapa, Cihuatán, and other locations in central and western El Salvador. As would be expected in a Spanish colonial town, ritual forms such as censers have all but disappeared. Gone too are any influences from the pan-Mesoamerican Mixteca Puebla art style that in some sense defines the Postclassic period as an archaeological horizon. Artwork depicting animal or human figures disappears, with the possible exception of abstractly zoomorphic supports for tripod bowls. *Molcajetes* have also vanished from the kitchen inventory, a puzzling development given the otherwise strong indigenous influence in domestic culture.

Somewhat more surprising is the importance of indigenous serving and other decorated wares in all parts of Ciudad Vieja. As noted to a lesser extent in sixteenth-century México City (Rodríguez-Alegría, Neff, and Glascock 2003), indigenous ceramics retained their importance at Ciudad Vieja, in what was considered a Spanish conquest center. This point is examined in further detail below in the section on hybrid *colono* ware plates.

Spanish Pottery at Ciudad Vieja

Olive Jars

Five hundred sixty fragments (adjusted to 475 possibly from individual vessels) of Spanish Olive Jars have been recovered from Ciudad Vieja. Though complete ceramic tallies are not finished, it is doubtful that Olive Jars make up more than 2% of the entire Ciudad Vieja ceramic assemblage, an extremely low quantity for a typical Spanish colonial site. Olive jars are considered a ubiquitous feature of Spanish colonial sites, discarded after the transport of liquids or granular solids from ship landings. With one exception, all Olive Jar rims at Ciudad Vieja belong to the Goggin's (1960) early style (see also Marken 1994: Fig. 4.1), replaced by doughnut-necked middle-style jars in the Spanish colonies by 1580, though perhaps as early as the 1560s (James 1988:59). The

one exception may be a very late Olive Jar, perhaps dating to the nineteenth-century occupation of Ciudad Vieja associated with Hacienda La Bermuda.

Olive Jar vessel walls at Ciudad Vieja average 0.65 cm in diameter, just under and in agreement with the rough 0.7 cm thickness of Goggin's (1960:Table 8) early-style jars, and in contrast with the 1.0–1.2 cm thick middle-style jars. Unfortunately, while large jar fragments were recovered, none are very informative regarding form. No Olive Jar handles have been recovered from Ciudad Vieja, and only one possible handle scar on a body sherd (and not from controlled excavation context). Goggin (1960) emphasized handles as distinctive of early-style jars, while Marken (1994) did not.

Close to half of all Olive Jar fragments were recovered from Structure 3D2, a possible marketplace located on the south edge of the main plaza, representing approximately 4% (by weight) of the total ceramic assemblage at that locus. Quantities are substantially smaller at other excavated contexts. This suggests that Olive Jars may have been discarded in some quantities near central markets or stores, but were not used for substantial transport or storage within the rest of the site.

Chronologically, the Olive Jar specimens place the main occupation of Ciudad Vieja in the early to mid-sixteenth century.

Majolica

Twenty-three majolica fragments were recovered from Ciudad Vieja. The influence of majolica on indigenous pottery traditions is detailed in the section on hybrid plates. However, the actual quantity of majolica is very small.

Five fragments of Caparra Blue, a sixteenth-century type used for medicine jars, were found at Ciudad Vieja (Deagan 1987:62-63; Goggin 1968:134-135). Also dating to early during the colonial period is the small tab handle found on a Columbia Plain *escudilla* (Goggin 1968:122-123), one of nine Columbia Plain fragments. (See [Figure 15](#).)

The other significant identified type of majolica at Ciudad Vieja is Sevilla Blue-on-White, present as two fragments of plates. As discussed in the section on hybrid plates, this type is generally associated with the later sixteenth-century, but is found in México City as early as 1530 (Lister and Lister 1982).

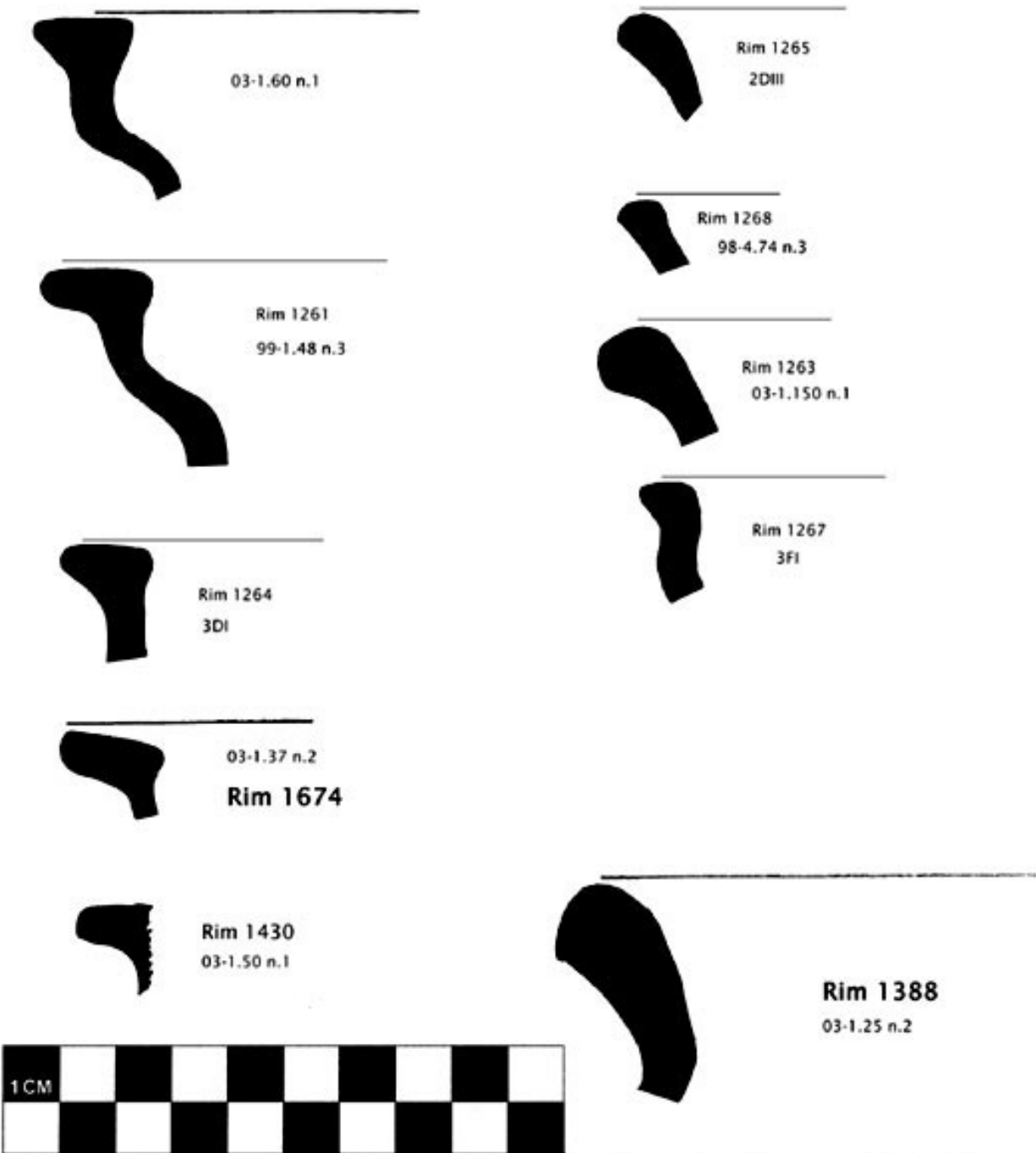


Figure 15. Olive Jar rim profiles. All pertain to Goggin's early style, except Rim 1388 (possibly a very late form and paste).



Figure 16. Sevilla Blue-on-White majolica fragment.

Locally Produced Hybrid Plates: An In-Depth Analysis of Ciudad Vieja Colono Ware

The Spanish *vecinos* of San Salvador adopted indigenous ceramics into their lives with little trouble. Pottery with clear ties to the ceramic traditions of the pre-Hispanic Postclassic period dominates all archaeological contexts at Ciudad Vieja. But in the case of serving vessels, we also see the influence of the new colonists. The primary type of serving vessel found at Ciudad Vieja is a buff- to orange-colored, low-fired, unglazed, brimmed plate, often painted in red with motifs that harken back into the Postclassic period. This form closely copies that of imported majolica plates, while preserving the technological and other aesthetic elements of pre-Columbian Pipil ceramic traditions. This phenomenon of stylistic adoption of European ceramic traits by indigenous American potters has been recorded at other colonial sites in the western hemisphere. Generally dubbed *colono* ware, the most common hypothesis concerning these vessels is that they are an indigenous response to scarcity of imported pottery desired by European settlers (Vernon 1988). A less visible and more recent approach has suggested that *colono* vessels are indicative in some way of indigenous acculturation into a European-dominated colonial society.

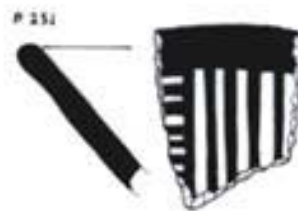
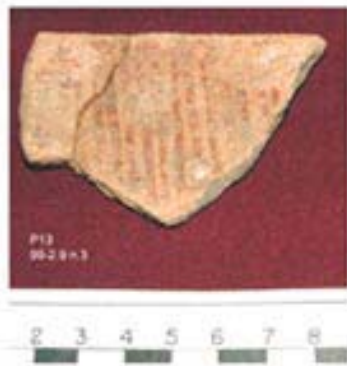


Figure 17. Colono ware plate.

Traditionally Mesoamerican women were the primary creators of pottery vessels until the adoption of the pottery wheel and other European techniques (Reina and Hill 1978). We know that at least some indigenous women moved to San Salvador from elsewhere in Mesoamerica, as part of families including Spanish men. It is conceivable that some of these women may have been the creators of hybrid brimmed plates. However, in addition to the basic assumption that most migrants to Ciudad Vieja were male auxiliary troops, and that many of the women living in San Salvador were local Pipils, the most common decorative motif (see [Figure 18](#)) painted on these hybrid plates, is similar to designs painted on Postclassic serving bowls in central and western El Salvador (Verhagen 1997:Figure 7.1). These groups of parallel lines, connected by a perpendicular line, are found on Catalina Red-on-White bowls found in the Izalcos region of western El Salvador (one example has been recovered from Ciudad Vieja), and a similar pattern of vertical stripes is painted on the inside of a number of simple bowls found at Ciudad Vieja. This would indicate that hybrid brimmed plates were classified as "serving bowls" by the first generation of colonial Pipil potters.



"Diagonal Pi" Design, Hybrid Plates, Ciudad Vieja



"Diagonal Pi Design" Bowls, Ciudad Vieja

Figure 18. "Diagonal Pi" design, plates and bowls.

This should come as no surprise, as these vessels typically outnumber simple bowls by a factor of 2:1 or 3:1 in nearly all excavated contexts at Ciudad Vieja, and are found associated with every excavated structure. Structure 3D1, located near the center of San Salvador, and remarkable for boasting two sets of floor tiles of different sizes, and a high incidence of imported Spanish pottery (including a large number of olive jar fragments, a fragment of Columbia Plain majolica, and a Caparra Blue majolica drug jar), has the highest percentage of brimmed plates associated with it, making up 29% of all vessels with an identifiable form. The second-highest percentage of hybrid brimmed plates (23%) comes from Structure 2F1, the best candidate at Ciudad Vieja for an indigenous household, located on the outskirts of town, with no Spanish architecture or ceramics, minimal iron artifacts, and strong evidence for textile production with spindle whorls (almost certainly undertaken by a Mesoamerican woman). Only in Structures 6F1 and 5E2 do serving-ware bowls outnumber hybrid plates. On average, they make up roughly 17% of all ceramic vessels in a given assemblage.

Table 1. Occurrence of hybrid *colono* ware plates in the structure assemblages of Ciudad Vieja

Structure	Plate % of Total Assemblage	Serving-ware Bowls % of Total Assemblage	Plates % of Serving Vessels	Comments on Context
3D1	29%	9%	76%	Spanish architecture (including distinct sets of floor tiles), high incidence of olive jars
2F1	23%	5%	82%	Indigenous household, no Spanish architecture or ceramics, possible textile production
6F2	22%	9%	71%	Spanish architecture, iron forge, large midden deposit
6F4	14%	5%	74%	Spanish architecture, no roof tile, kitchen and trash midden, indigenous labor
6F3	14%	6%	70%	Baked earth oven
3D2	13%	6%	68%	Spanish architecture, iron forge, kitchen midden
6F1	12%	15%	44%	Spanish architecture includes mosaic floor, carved column bases
5E2	9%	18%	33%	Spanish architecture

The bulk of ceramics at Ciudad Vieja belong to the Alvarado group and the Bermúdez groups (while Bermúdez plates are only a small portion of the entire plate population, plates are a large percentage of Bermúdez vessels) described above. While clearly related to the unpublished protohistoric Cuscatlán and Teshcal ceramic groups designated by Paul Amaroli (1992), the Ciudad Vieja ceramic assemblage provides a larger breadth of forms, especially hybrid brimmed plate serving vessels that are reported neither by Amaroli nor others studying the Protohistoric-Colonial period in El

Salvador. Alvarado ceramics appear to also be related to Haberland's (1964) Postclassic Marihua Red-on-Buff, although Marihua painted lines are much broader and sloppier than those on Alvarado ceramics.

In addition, 17 hybrid plate fragments (2.8% of all plates) belong to the red-slipped, fine orange-paste Bermúdez group.

Methodology

A total of 618 fragmented plates were classified in more detail than standard type classification, in particular through the use of four distinct zones comprising the body of the plate. For each of these zones, form, thickness, and any painted designs were recorded. In addition, orifice diameter, rim width, well diameter, and well depth were recorded when possible.

Zone A consists of the lip/rim of the vessel. 393 examples could be classified by form in Zone A (64% of all plates). Form, thickness, and painted/slipped design motif were recorded for Zone A. Form was classified into one of 22 different categories by profile (A1–A24).

Zone B consists of the area of a plate between the rim (excluding the lip as part of Zone A) and the *arista* (the "corner" where the wing meets the well, Lister and Lister 1975:18). In other words, Zone B is the brim (also known as the wing) of a brimmed plate. Form was classified into one of 13 (B1–B13) profile categories. Brim form could be classified for 482 plates (78% of all plates), making it the most commonly identified plate section.

Zone C consists of the small, somewhat vertical, zone between the arista and the base of the plate. Zone C could be classified in 247 cases (40% of all plates), using 19 form categories (C1–C19). Two additional measurements were made here. The first is of the exterior height from the interior point of the *arista* to the bottom of the plate base (labeled CHE in [Figure 19](#), shown below). The second measurement taken in this Zone was the horizontal diameter of the plate well. In most cases, this was estimated using the same orifice diameter charts used to determine vessel orifice diameter.

Zone D consists of the base of the vessel. Basal morphology could be determined for only 93 of 618 plates (15%). Plate bases were classified into only nine (D1–D9) form categories. Well depth was recorded here (the vertical distance between the top of the Zone C join and the interior of the base, labeled DHI in [Figure 19](#)).

The variables of type classification, surface treatment, and weight, applied to all ceramic sherds studied in the Ciudad Vieja collection, were recorded for each case.

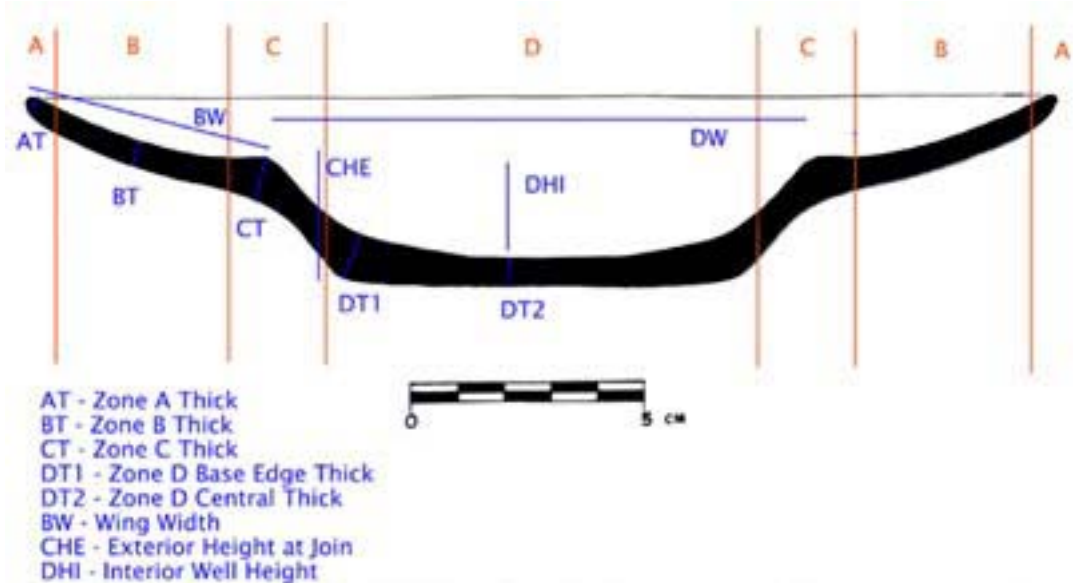


Figure 19. Schematic division for study zones and measurements of Ciudad Vieja colono ware plates.

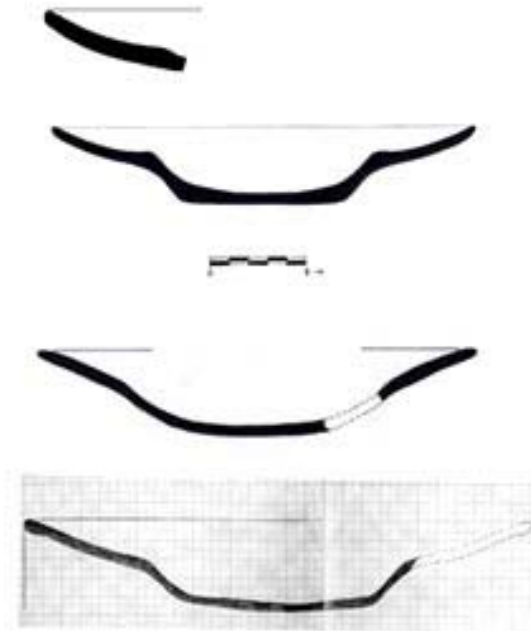
Form

The obvious defining characteristic of hybrid Alvarado group plates is form. While shallow platters and bowls, and some brimmed tripod vessels were produced in Mesoamerica prior to European contact, the brimmed plate does not seem to have an indigenous antecedent. The closest antecedents to the Alvarado plate form are Spanish and Italian majolica, tin-glazed serving vessels. Christian European potters began to appropriate this technique from Muslim potters in the thirteenth century, who themselves were copying Chinese porcelain (Carnegy 1993:12; Lister and Lister 1987; Poole 1997). (See [Figure 20](#).)

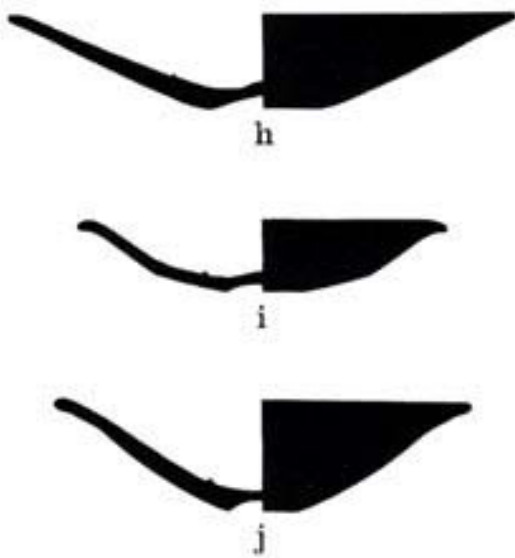
The Pipil potters who made the hybrid plates were very familiar with the original subject matter. Detailed analysis of vessel form by section, in comparison with published information on Spanish and Italian sixteenth-century majolica, reveals that the indigenous potters who made Alvarado plates had a keen eye for variation within European ceramic forms. Morisco-tradition majolica such as Columbia Plain is often the most commonly found majolica at sixteenth century Spanish colonial sites, but its form is poorly represented in the Alvarado hybrid plates. Five of the hybrid plates (0.8% of the total collection) have the distinctive thicker body, curved form, and low-ridge-like break between the "wing" and the "well" of the plate. These examples do not have the geometric designs common to Alvarado group vessels, and are instead red-slipped in part or whole. Two of the five are Bermúdez group ceramics, one of which has a mildly scalloped rim. Several small majolica fragments of the most common morisco type, Columbia Plain, have been identified at Ciudad Vieja.



a. Morisco-style hybrid plate, Ciudad Vieja

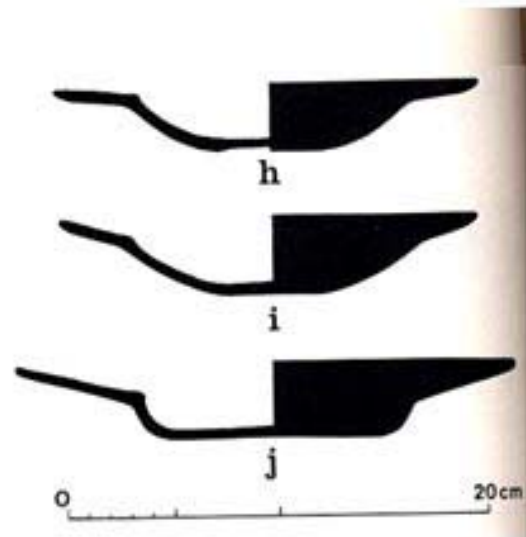


b. Morisco-style (top) and Italianate- (bottom three) hybrid plates, Ciudad Vieja



0 20cm

c.) Morisco plates (Lister & Lister 1982, Fig. 4.3 h-j)



d.) Sevilla Ware plates (Lister & Lister 1982, Fig 4.3 h-j)

Figure 20. Ciudad Vieja plate profiles vs. Majolica plate profiles. a: Hybrid Morisco-style plate, Ciudad Vieja; b: Morisco- (top) and Italianate- (bottom three) style hybrid plates, Ciudad Vieja; c: Morisco plates (Lister and Lister 1982: Fig. 4.3 h-j); d: Sevilla Ware plates (Lister and Lister 1982, Fig 4.23 h-j).

Instead, the vast majority of plates are the thinner walled, brimmed plates of the Italian tradition. Italian potters and technology began arriving in Seville in the sixteenth century, and by the middle of the century, Italian-style plates were an important product of Andalusia (Pleguezuelo and La Fuente 1995:237-240). Spanish-produced Sevillian ware plates, in the Italianate tradition, are uncommon in the Americas during the historically recorded occupation of Ciudad Vieja, but are present by roughly 1530, particularly in México City (Deagan 1987; Lister and Lister 1982).

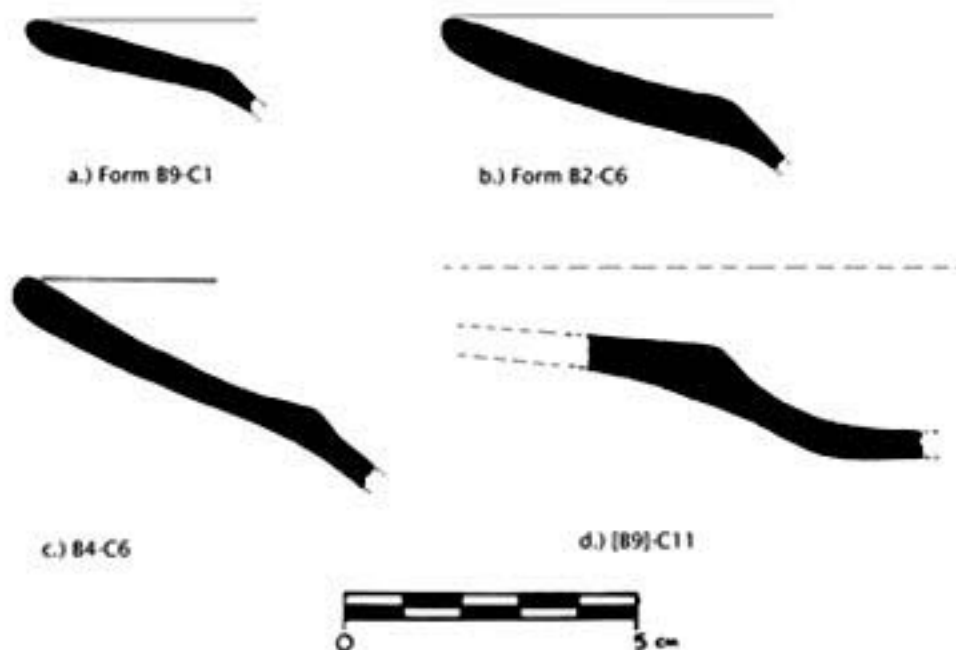


Figure 21. The four most common B-C form combinations in Ciudad Vieja hybrid plates.

An analysis of the Ciudad Vieja hybrid plates (Card 2005), in comparison with sixteenth century European majolica, shows very close similarities in form to Italian majolica contemporary with the historically documented occupation of Ciudad Vieja (Lessmann 1979; Watson 1986). Several of these forms are characterized by, in part, a horizontal flat brim. While no Italian majolica has been found at Ciudad Vieja, we have found two pieces of Italianate-style Spanish majolica, Sevilla Blue on White. It appears certain that the indigenous potters who produced the hybrid vessels were handling original majolica plates imported from Europe. Furthermore, while Morisco majolica is somewhat more common than Italianate majolica at Ciudad Vieja, over 95% of the hybrid plates have the newer and more stylish Italianate forms. Italianate, and not Morisco, forms also dominate the production of Spanish majolica potters in México City starting during the later part of the occupation of Ciudad Vieja (Lister and Lister 1982), though it should be noted we have no evidence for Mexican majolica at Ciudad Vieja.

Decoration

Alvarado Group hybrid plates are either plain or decorated with painted red geometric designs on orange to buff paste or orange to buff-self-slipped surfaces. Bermúdez group hybrid plates are by definition red slipped, and are mostly monochromatic (though one example was decorated with a two-tone "diagonal pi" motif). The most important zone for painted decoration on hybrid plates is the wide brim.

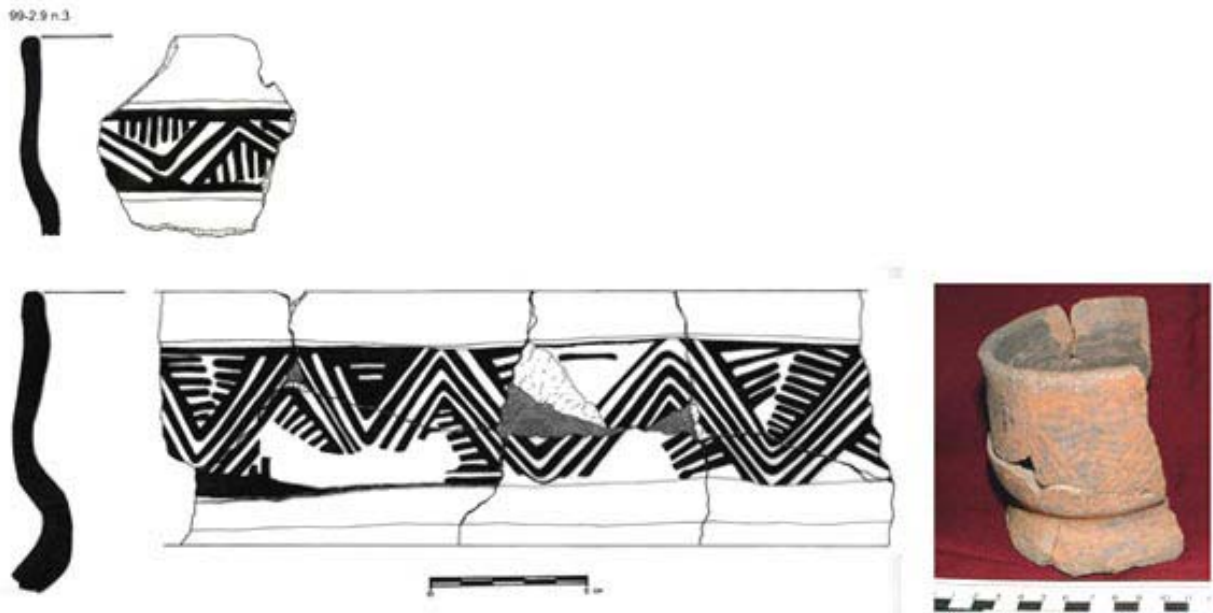
The four most common decoration motifs on the brim include:

- ◆ No decoration identified, 18% of all plates (45% of identifiable designs).
- ◆ "Diagonal pi" (see [Figure 18](#)), 12% of all plates (30% of identifiable designs). This design appears to be an adaptation of geometric designs applied to pre-contact Pipil, and contact-period Alvarado group bowls. The original "striped" design, occurring on Ciudad Vieja bowls, is found on the pre-contact, Postclassic Catalina Red-on-White type of western El Salvador (Verhagen 1998), as well as in Amaroli's unpublished protohistoric Cuscatlán group.
- ◆ Solid red slip, 8% of all plates (20% of identifiable designs). All five morisco-style hybrid plates were red slipped, and displayed no other decoration. Though the sample number is small, this difference clearly sets the morisco-style hybrid plates apart from the Italiante hybrid plates by decoration, as well as form.
- ◆ Spiked Combs or Triangles (see [Figure 22](#)), 2% of all plates (5% of identifiable designs), and also present on bulbous-necked *cántaro* water jars. Amongst plates, this design only occurs on concave brims (seven examples, two on B4 plates, five on B6 plates).

Such decoration links the hybrid plates not only to contemporary painted bowls and cántaros in the Ciudad Vieja assemblage, but to a deeper tradition represented in Postclassic El Salvador by Marihua Red on Buff, and possibly to the Pipil migrations from México (Fowler 1989:32-49). There was no attempt to adopt European painted designs or technologies, only form.



"Spiked Triangles", Hybrid Plates, Ciudad Vieja



"Spiked Triangles", Cantaro Necks, Ciudad Vieja

Figure 22. "Spiked Triangle" design, plates and cántaros.

Technology

Technologically, the Alvarado group hybrid plates are purely indigenous. There is no evidence for the use of the potter's wheel. None of the Alvarado group hybrid plates were glazed. The indigenous surface treatment techniques used to construct *colono* plates included: smoothing, burnishing, and linear burnishing (burnishing that leaves non-burnished 'streaks' between burnish facets or marks).

As mentioned above in the discussion of form, the brim is the most sensitive and useful variable for classifying hybrid plates. The table below displays the relationship between brim form and interior surface treatment. Interior surfaces are roughly divided between non-lustrous smooth, and lustrous polished, with a few burnished examples. Flat-brimmed plates (**B9** in [Figure 21](#)) were more likely than concave brimmed plates to be polished on the interior surface. This pattern is also observed for the exterior, but is less statistically reliable.

Table 2. Common plate brim forms vs. interior surface treatment (df = 8, $\chi^2 = 13.804$, p = 0.087)						
Brim Form	Smooth	Smooth %	Polished	Polished %	Burnished	Burnished %
B2	39	52.7%	31	41.9%	4	5.4%
Expected	34.38		35.63		3.99	
χ^2	0.620		0.602		0.00	
B3	13	50%	9	34.6%	4	15.4%
Expected	12.08		12.52		1.40	
χ^2	0.070		0.989		4.824	
B4	22	48.9%	22	48.9%	1	2.2%
Expected	20.91		21.67		2.42	
χ^2	0.057		0.005		0.837	
B6	34	50%	30	44.1%	4	5.9%
Expected	31.60		32.74		3.66	
χ^2	0.183		0.229		0.031	
B9	30	35.7%	51	60.7%	3	3.6%
Expected	39.03		40.44		4.53	
χ^2	2.089		2.755		0.514	
<hr/>						
Total	138	46.5%	143	48.1%	16	5.4%

The isolation of flat-brimmed plates from the rest of the hybrid-plate population also extends to paste and temper sorting.

Table 3. Common plate brim forms vs. inclusion coarseness (df = 4, $\chi^2 = 10.740$, p = 0.03)				
Brim Form	Coarse	Coarse % (all types)	Fine	Fine % (all types)
B2	68	69.4%	24	24.5%
Expected	67.2		24.8	
χ^2	0.009		0.026	
B3	29	85.3%	3	8.8%
Expected	23.37		8.63	
χ^2	1.354		3.669	
B4	33	70.2%	13	27.7%
Expected	33.6		12.4	
χ^2	0.011		0.029	
B6	65	75.6%	18	20.9%
Expected	60.63		22.37	
χ^2	0.315		0.854	
B9	76	60.3%	42	33.3%
Expected	86.19		31.81	
χ^2	1.206		3.267	
Total	271	61.9%	100	22.8%

While in all cases the bulk of plates (like the bulk of Ciudad Vieja ceramics) are coarsely tempered, flat-brimmed plates (**B9**) were better sorted than plates with other forms. Conversely, steeply-angled concave brimmed plates were rarely finely sorted. This variation is even more statistically significant than surface treatment, with a p-value of 0.03.

With the exception of morisco-style hybrid plates (all five of which are red-slipped), there are no significant surface color variations in regard to brim form, with roughly 75-85% of plates possessing a pale surface when one could be detected. Orange (10%) and brown surfaces (4%) seem to vary from pale surfaces due to firing variation or in some cases compacted and darker surfaces due to burnishing. Red slipped surfaces are found on 6.1% of the non-morisco hybrid plates.

Implications for Indigenous Occupation of San Salvador and Sixteenth-Century Culture Change

A common explanation for the adoption of European forms by indigenous potters in Spanish America is that of scarcity (Charlton and Fournier-Garcia 1993; Vernon 1988:79). Spanish settlers, hoping to replicate some elements of the home life they knew in Iberia, direct local potters to try as best they can to produce serving vessels reminiscent of hard-to-obtain European majolica. In some places, such as mission (Vernon 1988; Weisman 1992) or fort sites (Bense and Wilson 2003) in Spanish Florida, this explanation seems to work. At these sites, hybrid plates and other vessels are significantly more common in trash dumps and other contexts associated with Spanish architecture, than in nearby indigenous residential zones. However, this is not the case at Ciudad Vieja, where hybrid plates are encountered in large quantities across the site, in presumed Spanish and indigenous residential deposits. As we believe that a substantial number of inhabitants of Ciudad Vieja were indigenous to Mesoamerica, particularly those that resided in Structure 2F1, Ciudad Vieja does not support the hypothesis suggested for indigenously produced *colono* wares at other sites in the circum-Caribbean region, that such vessels were produced primarily for Spaniards hungry for familiar but unavailable material culture.

Instead, while Spanish settlers may have been the initial impetus or "market" for this new form, it seems to have been embraced by the indigenous inhabitants of San Salvador. But only within San Salvador. Elsewhere in the former Pipil kingdoms of Izalco and Cuscatlán, brimmed hybrid vessels do not appear, even in assemblages where the rest of the ceramic inventory is clearly related to that of Ciudad Vieja (Amaroli 1992). Scalloped-lip red-slipped bowls, inspired by contemporary majolica or glass vessels, were used at late-sixteenth century Caluco (Verhagen 1997: Fig 7.17). Two examples of what may be similar bowls, both red slipped, were recovered from Ciudad Vieja. Verhagen also notes a deep, brimmed bowl (Fig 7.19). But brimmed hybrid plates are not present at later Caluco.

The difference at Ciudad Vieja is the presence of large numbers of uprooted indigenous people living at a location that was not previously inhabited. Unlike México City, Santiago de los Caballeros, and other early Spanish colonial capitols including the first San Salvador of 1525 (Lardé y Larín 2000:85), Ciudad Vieja was not founded within the confines of an existing settlement (Barón Castro 1996:43). With the exception of new *indios* and *mestizos* born at Ciudad Vieja, all of the inhabitants would have moved there from their previous home. The Spanish and other European *conquistadores* were far from home, but so too were the Mesoamerican auxiliary troops and *naborías* that accompanied the Spanish colonists to Cuscatlán. The documentary record speaks of Spanish allies, native auxiliary troops, from México. Several hundreds to thousands of Tlaxcaltecs, Cholulans, Tetzocans, and other "Mexicans" took part in the conquest of Guatemala, including what is now El Salvador (Barón Castro 1996:66; Escalante Arce 2001:20-21; Lardé y Larín 2000:53). While still within the greater culture area of Mesoamerica, Mexicans and Mayas would also have been far from home, foreigners to the Pipil and Europeans alike. Foreign Mesoamericans resident in San Salvador may have realized that in their culturally isolated situation, adoption of Spanish cultural

elements may have been an important guarantor of continued recognition as *indios amigos*.

Even those originating closer to San Salvador would have been away from home, as there was no settlement at Ciudad Vieja immediately before the arrival of the Spanish. Presumably some of the thousands of Indians held to *encomienda* requirements by the *vecinos* of San Salvador worked and lived, at least on a temporary basis, on-site. Spanish laws were designed to keep such absences to "reasonable" spans of time, such as four months (Sherman 1979:314). Other roles for indigenous people in San Salvador may have included as wives (San Salvador *vecino* Francisco Castellón married the Mixtec *mestiza* Catalina Gutiérrez in 1539 or 1540 [Lardé y Larín 2000:194-195, 260-261]), concubines (Sherman 1979:305-306), clients, itinerant laborers (some Indian laborers were paid to construct the new *ciudad* de San Salvador that replaced Ciudad Vieja [Sherman 1979:96]), apprentices, craftspeople, nurses (Sherman 1979:323), servants, or slaves (Lardé y Larín 2000:67; Sherman 1979:91, 196). Throughout the sixteenth-century, wage-laborers were isolated even further from their original communities by participation in Spanish-inspired religious fraternities (Rodríguez-Alegria 2002:125-126). Even if travel to nearby Pipil towns was frequent, Pipiles would have been to some degree strangers in a foreign-dominated colony, as well as increasingly in their home communities.

Lastly, San Salvador was also a slaving colony (Sherman 1979:27). The *vecinos* of San Salvador, feeling that the Indians of their *encomiendas* were not sufficient, campaigned to the east of the Lempa with their indigenous auxiliaries, to acquire more slaves, specifically, Lencas. These lands and their inhabitants were soon redistributed after the founding of San Miguel in 1530, leading the San Salvadoreños to conquer into the mountains to the north, in the direction of Honduras-Higueras (Barón Castro 1996:135-136, 150, 165-166, 187). This situation was not unusual in the Spanish colonies. In Panama, only 27% of Indians counted in a 1550 census were locals (Cooke *et al.* 2003:22-23). Four-hundred slaves were liberated from San Salvador in 1548, only three years after the documented transfer away from Ciudad Vieja (Sherman 1979:73).

The isolation from existing cultural and social networks may have increased the pressures of acculturation and syncretism on the non-Spanish inhabitants of Ciudad Vieja, particularly the non-Pipil. The cultural reinforcements built into a society's institutions that could act to slow acculturative processes (Rogers 1993), would have been largely absent inside of the Spanish colony of San Salvador. Hybridized vessels appear to be linked not so much to the adoption of European material culture, nor to daily interaction with Europeans, but to the dissolution of traditional indigenous society through the physical removal of people from existing pre-Hispanic settlements and resettlement in new towns and cities.

In only two other cases, hybrid serving vessels, produced by indigenous potters, dominate serving vessels in a site's ceramic assemblage, making up close to 20% of the entire ceramic assemblage. One is Amelia Island, Florida, where missionized Guale Indians were resettled due to Franco-Spanish conflict (Saunders 2000:136-142). The other is Old Mobile, Alabama, where again due to Franco-Spanish conflict, missionized

Apalachee Indians from Spanish Florida resettled in a French town (Cordell 2002; Silvia 2000). In both cases, indigenous potters had begun making *colono* wares, but in small quantities, prior to resettlement. Due to their discovery primarily in Spanish architectural contexts, these cases have been cited as evidence that *colono* ware serving vessels were produced by indigenous potters for Spaniards unable to obtain sufficient quantities of majolica.

But in both cases, after migration as refugees and resettlement, the production of *colono* ware serving vessels increases dramatically to 18-20% of the ceramic assemblage. Furthermore, these vessels are found in large quantities in contexts where architectural and other evidence suggest the occupants were indigenous, and not European. As shown above, the same holds true for Ciudad Vieja, where 17% of the ceramic assemblage is *colono* ware plates. In all of these cases, indigenous households are enthusiastic consumers of *colono* wares. And in all three cases, the "indigenous" inhabitants of these communities have been uprooted as refugees, soldiers, servants, or slaves. By contrast, in colonial sites that predate European contact and conquest as previously existing communities, *colono* ware production is relatively low, and consumption in many cases is largely found in contexts believed to have been created by Spanish colonists.

The Chipped Stone Industry

Methodological and Theoretical Considerations

The chipped-stone industry of Ciudad Vieja is classified according to technological and behavioral considerations (Clark and Lee 1979; Sheets 1975, 1978; Fowler 1981, 1991a). The emphasis on technological and behavioral considerations allows a reconstruction of the nature and structure of an artifact industry. Another advantage to this method of classification is that the analyst bases the classification on inherent attributes derived from the manufacturing process, resulting in a classification that is more-or-less inherent in the artifacts themselves. "An industry refers to the artifacts, including the wastage in their manufacture, of a common raw material, which were manufactured using a common body of procedures" (Sheets 1978:3). Therefore, we are viewing inherent, not arbitrary or artificially imposed, categories of material culture.

The fundamental criteria for recognizing taxonomic units in behavioral classification are "behavioral discontinuities" (Sheets 1975:375). These are points in the sequence of artifact manufacture at which the artisan changed from one technique of production to another. The classic example of a behavioral discontinuity is the shift in a typical Mesoamerican chipped-stone industry from percussion to pressure in core reduction or in the manufacture of obsidian prismatic blades (Sheets 1975:279; Fowler 1981:278-279). The evidence indicating this shift in behavior or manufacturing technique is physically recorded on the artifacts themselves and reflected in the artifact classes "macroblade" and "small percussion blade" (removed from a polyhedral core by percussion) versus "prismatic blade" (removed from the core by pressure).

These artifact classes, while recognized and designated by the analyst, result from the behavior of the knapper who made the blades. Thus, when the analyst accurately identifies and interprets these behavioral discontinuities and uses them as a basis for ordering behavioral types, the typology becomes a model of the real structure of the industry. Typologies of the more complex Mesoamerican chipped-stone industries represent linear reduction models that reflect manufacturing behavior and production technology. It has been shown that these sequences vary considerably through time and space according to raw material, raw material availability, demand for lithic tools, functions for which the tools were designed, levels of knapper skill and specialization and skill, volume of production, and many other factors too numerous to mention (Fowler 1991a:3).

Deliberate modification of a blank or preform to produce a special-purpose object. Macroblades may be modified by unifacial retouching to produce scrapers or through bifacial retouching to produce projectile points. Another example would be the modification of a prismatic blade segment through unifacial pressure retouch to create a drill or an arrow point. The morphology of retouched or modified artifacts manifests itself in the final stage of artifact production. Therefore, morphological criteria should be used at a low taxonomic level to subdivide technological types.

Form is related to function, and functional analysis through microscopic examination of edge-wear is also an important part of behavioral and technological analysis. Many chipped-stone analyses conduct functional analysis on only a sample of the total number of artifacts. In the present analysis, functional analysis was conducted on all artifacts.

Procedure

The first step in any artifact analysis is the initial sorting based on raw material. At Ciudad Vieja, initial sorting took place in the field rather than in the laboratory, as all artifact classes were bagged or packaged separately according to raw materials. Once in the laboratory, all artifacts were carefully washed, labeled, and inventoried. Once the initial stage of classification was underway, we employed basic sorting categories derived from previous obsidian analyses from Chalchuapa (Sheets 1978) and Cihuatán (Fowler 1981), pre-Columbian Salvadoran archaeological sites with large obsidian artifact assemblages. The basic sorting categories derived from these previous researches were: debitage (waste flakes), utilized flakes, macroblades, prismatic blades, cores, unifacially retouched macroblades, unifacially retouched prismatic blades, and bifacially retouched macroblades. Nevertheless, it became immediately apparent upon first inspection that the Ciudad Vieja obsidian assemblage is far less complex than that of either of these two pre-Columbian sites used as a point of departure and a basis of comparison. Specifically, the overwhelmingly predominant type class in the Ciudad Vieja assemblage is the prismatic blade, while macroblades are absent, and cores are exceedingly rare. Bifaces are also uncommon. The implications of this truncated assemblage will be discussed below.

The next stage of the analysis was to record all metric data and non-metric attributes for every obsidian artifact. Proximal prismatic blade specimens were measured for length, width, thickness, and weight. The type and intensity of platform preparation and platform overhand removal were noted. All measurements were made with a stainless steel sliding caliper. Weights were taken with an Ohaus beam-balance scale. Edge-wear and retouch were also recorded. Microscopic edge-wear analysis was conducted on all artifacts using a Bausch and Lomb jeweler's loupe with 5X-7X-12X magnification, mostly used at 12X, and a Zeiss Stemi DV4 stereomicroscope with continuous variable magnification from 8X to 32X, mostly used at 12X to 16X. The combination of the loupe and the stereomicroscope proved to be very useful in detecting manufacturing evidence and wear patterns that were invisible to the naked eye.

The Collection

Included in the total analyzed collection are 609 obsidian artifacts from controlled surface collections and excavations of the structures described above. Based on visual inspection virtually all of these artifacts were manufactured from Ixtepeque obsidian. Ixtepeque obsidian tends to be translucent, medium to light gray in color, often with a golden hue, and sometimes with some banding or cloudiness caused by the inclusion of impurities. Located in southeastern Guatemala, Ixtepeque would have been the closest source to the site. Three prismatic blade fragments are of green obsidian, and are presumably of material from the Pachuca, Hidalgo, source (cf. Sheets 1978:13). Several artifacts are a very dark, opaque, gray obsidian and may be from a Mexican source.

Obsidian artifacts are ubiquitous at Ciudad Vieja. They are abundant on the surface of the site, and there is no excavated context in which they do not occur. There is no doubt about the contemporaneity of Ciudad Vieja obsidian artifacts with the main occupation of the site in the second quarter of the sixteenth century.

Typology

Flakes and Utilized Flakes

Frequency. 47 (7%)

A flake by definition is any lithic artifact removed from a core whose length is less than twice its width. Conversely, a blade is at least twice as long as it is wide. These flakes for the most part appear to have been removed from small, cylindrical cores (probably exhausted polyhedral cores) by percussive force. Almost all of them show evidence of use for light cutting or scraping. Table 4 summarizes the metric values.

Table 4. Ciudad Vieja obsidian flakes, metric values (n = 47)				
	Length (cm)	Width (cm)	Thickness (cm)	Weight (g)
mean	2.65	2.48	1.42	2.22
σ	0.021	0.69296465	0.16970563	0.35355339
range	0.82-3.43	0.05-2.9	0.02-2.7	0.02-6.3



Figure 23. Proximal segments of obsidian prismatic blades.

Prismatic Blades ([Figure 23](#), shown above)

Frequency. 557 (85%)

Prismatic blades are long and thin with parallel lateral edges. They were removed, probably by impulsive pressure from carefully prepared polyhedral cores. Several contrasting features distinguish prismatic blades from small percussion blades. Prismatic blade platforms tend to be smaller in area than those of percussion blades. The former do not exhibit platform crushing which does often occur on percussion blades. The bulbs of force tend to be smaller on prismatic blades, and they do not show ripple marks or compression rings which often occur on percussion blades. These characteristics indicate a shift from percussion to pressure flaking as the means for removing the blades.

The distal ends of complete specimens taper to a thin, sharp termination, but there are no complete specimens in the Ciudad Vieja collection. Prismatic blades tend to be trapezoidal in transverse section (with two dorsal ridges), and, less often, some are

triangular in transverse section (with one dorsal ridge). They are concavo-convex in longitudinal section (the ventral surface is slightly concave).

Obsidian prismatic blades were used for a multitude of tasks by ancient Mesoamerican cultures. Cutting, scraping, whittling, and shaving were probably among the most common uses. In addition, as mentioned previously, obsidian prismatic blades could be modified into special-purpose implements.

The following tables present metric values for prismatic blades and the size of platforms measured on proximal segments. Since all blades were broken or snapped, the measurement of length is incomplete.

Table 5. Ciudad Vieja prismatic blades, metric values (n = 557)				
	Length (cm)	Width (cm)	Thickness (cm)	Weight (g)
mean	2.01	1.25	0.34	1.08
σ	0.74	0.35	0.85	1.06
range	0.09-5.55	0.25-2.99	0.1-3.5	0.02-3.6

Table 6. Ciudad Vieja prismatic blade platform size (proximal segments), metric values (n = 96)		
	Length (cm)	Width (cm)
mean	0.81	0.34
σ	0.06	0.09
range	0.23-1.88	0.12-0.55

With regard to platform treatment and overhang-removal treatment, all of the 96 proximal segments had their platforms ground before being removed from the core. All were lightly to moderately ground. Grinding or abrading the platform surface increases the friction between the platform surface and the flaking tool, reducing tool slippage and flaking errors. Abrading the platform surface also breaks the surface tension of the platform, reducing the amount of force required for the removal of the blade (Sheets 1978a:12). Likewise, all 96 specimens had their platform overhang removed by light to moderate grinding or scraping around the edge of the core. Platform surface treatment and overhang removal are traits that change through time in ancient Mesoamerican industries, with light to moderate grinding becoming increasingly frequent in the Postclassic (Sheets 1978a:11-12, 73-74).

The cutting edge-to-mass (CE/M) ratio of Ciudad Vieja prismatic blades, calculated by dividing the total acute cutting edge (total length X 2) in centimeters by the total weight

in grams (Sheets and Muto 1972), is 3.74. This number was calculated on the entire collection of 557 prismatic blades. The CE/M ratio is an indicator of efficiency in blade production as well as scarcity or distance from the source of raw material. In general, knappers tended to maximize cutting edge when obsidian is scarcer (Fowler 1991a:3; Sheets 1978a:11, 1978b; Sidrys 1976:155-167, 1978:150-152). The CE/M ratio of 3.74 for Ciudad Vieja is relatively high but slightly lower than that of some Postclassic sites. For comparison, the CE/M ratio of prismatic blades from Cihuatán, an Early Postclassic Pipil site located very near Ciudad Vieja, is 4.38 (Fowler *et al.* 1987:154). If the difference between 3.74 for Ciudad Vieja and 4.38 for Cihuatán is significant, which it may not be, this could mean that the indigenous inhabitants of the villa of San Salvador had better access to obsidian, or at least to prismatic blades, than the Early Postclassic Pipils who inhabited Cihuatán roughly 400-500 years before the Conquest. It is quite possible that the Conquest changed or upset many of the socioeconomic factors that limited the exchange or acquisition of blades in pre-Hispanic times (Fowler *et al.* 1987:154-155).



Figure 24. Proximal and distal segments of small percussion blades.

Small Percussion Blades ([Figure 24](#), shown above)

Frequency. 25 (4%)

Small percussion blades are generally slightly larger and thicker than prismatic blades, although smaller examples may fall within the lower end of the range for prismatic blades. They were removed from a conical, polyhedral core by a percussion blow, as evidenced by platform crushing and larger bulbs of force at the proximal end. Otherwise, they closely resemble prismatic blades and may have been used for the same purposes. Small percussion blades could have been used for many of the same

tasks to which prismatic blades were put, and they could also have served for heavier work as well.

The following tables present metric values for small percussion blades and the size of platforms measured on proximal segments. Since all blades were broken or snapped, the measurement of length is incomplete.

Table 7. Ciudad Vieja small percussion blades, metric values (n = 25)				
	Length (cm)	Width (cm)	Thickness (cm)	Weight (g)
mean	2.96	2.19	0.68	4.21
σ	0.05	0.25	0.20	0.50
range	1.46-5.45	0.95-3.84	0.26-2.2	0.65-11.2

Table 8. Ciudad Vieja small percussion blade platform size (proximal segments), metric values (n = 13)		
	Length (cm)	Width (cm)
mean	0.81	0.34
σ	0.06	0.09
range	0.23-1.88	0.12-0.55

Polyhedral Cores

Frequency. 3 (>1%)

Polyhedral prismatic blade cores were shaped by percussion from macrocores and designed for the production of prismatic blades. They begin their lifespans with conical or cylindrical forms. As more and more blades are removed from a core, it assumes the shape of a pointed ellipsoid or a pointed paraboloid. At this point, when no more blades can be removed, the core is referred to as exhausted. All three of the polyhedral cores known from Ciudad Vieja are exhausted. In addition, all of them were smashed or broken by bipolar percussion. One of them shows signs of having been used as a reamer, with its parallel ridges worn smooth in a rotary motion.

The following table summaries metric values for these three specimens.

Table 9. Ciudad Vieja polyhedral core fragments, metric values (n = 3)			
Length (cm)	Width (cm)	Thickness (cm)	Weight (g)
2.05	1.57	0.61	2.5
2.4	1.1	1.05	1.31
2.5	1.2	1.2	1.4

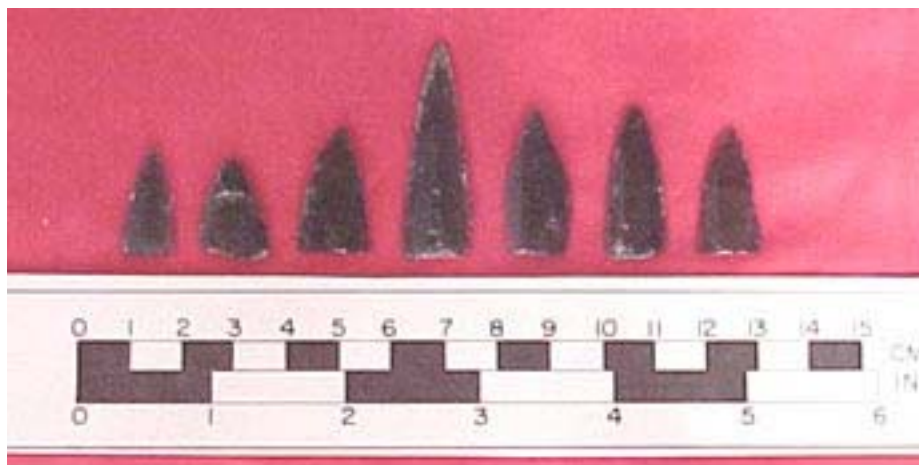


Figure 25. Laterally retouched projectile points on prismatic blades.

Laterally Retouched Implements

Triangular Points on Prismatic Blade Blanks ([Figure 25](#), shown above)

Frequency. 7 (1%)

These are small, laterally retouched projectile points made from snapped prismatic blades. They may be made from a proximal or medial segment. The prismatic blade platform may form the proximal or distal end of the point. All are triangular in outline, plano-triangular in transverse section, and concavo-convex in longitudinal section. The edges and points are formed by careful pressure unifacial retouch along both edges of both faces. Retouch is usually a bit heavier from the ventral to dorsal surface. The bases are straight, un-thinned, and slightly ground. The following table summarizes metric values for these points.

Small, triangular points made on prismatic blade segments are widespread in Mesoamerica during the Postclassic period (Fowler 1989:372-377). Some have straight bases, while others have thinned, concave bases. The similarity in morphology and technology of these points suggests that they were all made in the same place, possibly by Mexican auxiliary troops.

Table 10. Ciudad Vieja laterally retouched points on prismatic blades, metric values (n = 7)			
Length (cm)	Width (cm)	Thickness (cm)	Weight (g)
2.85	1.5	0.3	2
1.9	1.5	0.25	0.8
3	1.45	0.25	2.3
2.9	1.2	0.3	1.1
3	1	0.3	1.1
3.5	1.4	3.5	1.7
1.8	1.1	0.3	0.6



Figure 26. Ciudad Vieja bifacially retouched projectile points.

Bifacially Retouched Implements

Stemmed Projectile Points ([Figure 26](#), shown above).

Frequency. 4 (>1%)

The four bifacially retouched obsidian artifacts recorded here are projectile points or projectile point fragments made on small macroblade blanks. The three complete examples are plano-convex in transverse section and concavo-convex in longitudinal section. They have ovate blades with expanded, convex stems, and they are side notched. It is tempting to speculate that these points were weapons used by Mexican auxiliary troops.

Length (cm)	Width (cm)	Thickness (cm)	Weight (g)
2.8	3.4	1.1	11
5.41	2.57	0.66	10.8
4.68	2.43	0.65	9.3
1.23	2.62	0.46	1.45

Miscellaneous

Frequency. 14 (2%)

Fourteen artifacts or debitage fragments were classified as miscellaneous. These include three scraper-like implements made on small percussion blade segments and a drill-like tool on a small percussion blade segment. The remaining miscellaneous artifacts are unclassified.

Discussion

The existence of an indigenous obsidian industry at an early Spanish conquest town in northern Central America is not surprising. Obsidian industries persisted for decades after the Conquest in many regions of Mesoamerica. The persistence of obsidian prismatic blade manufacturing in the Valley of México after the Conquest is historically well documented (Clark 1982, 1989). Therefore, this kind of continuity in material culture

at the villa of San Salvador is to be expected. But lithic specialists familiar with traditional Mesoamerican core-blade industries will immediately recognize an important change that occurred. The Ciudad Vieja obsidian assemblage does not exhibit the full array of products of a typical core-blade reduction sequence as known for pre-Hispanic sites in southern Mesoamerica such as, for example, Chalchuapa (1978) and Cihuatán (Fowler 1981) (for other examples, see Fowler [1991:3]).

The Cihuatán obsidian assemblage will be summarized here because it is of Early Postclassic date, and it is probably very typical of a pre-Hispanic Pipil obsidian assemblage. The Cihuatán obsidian industry shows the full Mesoamerican reduction sequence in all its diversity: macroflakes, macroblades, and small percussion blades detached from macrocores; scrapers, bifaces, small percussion blades, and prismatic blade cores made from the reduction of large polyhedral cores; prismatic blades and retouched, modified prismatic blades; exhausted polyhedral cores and a wide variety of all forms of debitage from core-blade production and biface and uniface manufacture. Raw material was acquired from several Guatemalan sources (especially Ixtepeque and El Chayal) for use by Pipil obsidian craftsmen at Cihuatán (Fowler *et al.* 1987).

In contrast, the Ciudad Vieja obsidian industry is remarkable for its relative simplicity and paucity of typological composition, indicating that it was not the product of a local reduction sequence. There is little evidence that prismatic blades, or any other artifact types for that matter, were produced on site, with the exception of the bipolar bashing of exhausted prismatic blade cores to produce small percussion blades. There is no core-blade debitage and there are no blade production mistakes present in the assemblage such as hinge fractures or *outrépassé* (plunging) blades as one would expect if blades were being produced at the site (cf. Sheets 1978b). The pattern of evidence presented here indicates that prismatic blades were probably imported ready-made for sale or barter at the town. Like prismatic blades, exhausted blade cores and medium-size flakes also may have been traded or brought into the site occasionally. Exhausted polyhedral cores make very handy secondary tools such as drills and reamers, and they were probably inexpensive. The predominant source seems to have been Ixtepeque in southeastern Guatemala.

Thus, while we see strong continuity in the use of obsidian tools, especially the omnipresent prismatic blade, at the villa of San Salvador by resident Pipils and Mexican auxiliaries, a drastic change occurred in the patterns of procurement and manufacture of these implements. In less than a generation after the Conquest, a highly specialized skill was lost, and ancient trade and exchange patterns were greatly altered forever.

List of Figures

[Figure 1.](#) Map showing location of Ciudad Vieja within El Salvador.

[Figure 2.](#) Regional map indicating the location of the site of Ciudad Vieja, El Salvador. Map by Rebecca Cutler.

[Figure 3.](#) Site plan of Ciudad Vieja showing natural topography and cultural features, based on original 1998 total station mapping. Map by Conard Hamilton.

[Figure 4.](#) Projected map of Ciudad Vieja showing topography and grid-plan layout. Map by Conard Hamilton. Black lines represent structures and features visible on surface; blue lines, projected; red lines, hypothesized. The yellow rectangle at the southwest corner of the plaza mayor indicates the location of recent excavations.

[Figure 5.](#) Locations and designations of excavated structures. Map by Conard Hamilton.

[Figure 6.](#) Some examples of ceramic vessels from Ciudad Vieja, all to scale.

[Figure 7.](#) Alvarado–Alvarado red-painted *cántaro* (with the rarer vertical stripe motif, instead of triangular pennants).

[Figure 8.](#) Alvarado–Alvarado *sartén*.

[Figure 9.](#) Alvarado–Peñacorba rim sherd. Note darker brown color, and distinctive burnishing marks.

[Figure 10.](#) Salvago *cántaro*.

[Figure 11.](#) Bonifacio Polychrome sherd.

[Figure 12.](#) Fine Gray ware bowl. This is the only known tripod example.

[Figure 13.](#) Usagre vessel.

[Figure 14.](#) Bermúdez *colono* ware plate.

[Figure 15.](#) Olive Jar rim profiles. All pertain to Goggin's early style, except Rim 1388 (possibly a very late form and paste).

[Figure 16.](#) Sevilla Blue-on-White majolica fragment.

[Figure 17.](#) Colono ware plate.

[Figure 18.](#) "Diagonal Pi" design, plates and bowls.

[Figure 19](#). Schematic division for study zones and measurements of Ciudad Vieja *colono* ware plates.

[Figure 20](#). Ciudad Vieja plate profiles vs. Majolica plate profiles. a: Hybrid Morisco-style plate, Ciudad Vieja; b: Morisco- (top) and Italianate- (bottom three) style hybrid plates, Ciudad Vieja; c: Morisco plates (Lister and Lister 1982: Fig. 4.3 h-j); d: Sevilla Ware plates (Lister and Lister 1982, Fig 4.23 h-j).

[Figure 21](#). The four most common B-C form combinations in Ciudad Vieja hybrid plates.

[Figure 22](#). "Spiked Triangle" design, plates and cántaros.

[Figure 23](#). Proximal segments of obsidian prismatic blades.

[Figure 24](#). Proximal and distal segments of small percussion blades.

[Figure 25](#). Laterally retouched projectile points on prismatic blades.

[Figure 26](#). Ciudad Vieja bifacially retouched projectile points.

List of Tables

[Table 1](#). Occurrence of hybrid *colono* ware plates in the structure assemblages of Ciudad Vieja.

[Table 2](#). Common plate brim forms vs. interior surface treatment (df = 8, $\chi^2 = 13.804$, p = 0.087).

[Table 3](#). Common plate brim forms vs. inclusion coarseness (df = 4, $\chi^2 = 10.740$, p = 0.03).

[Table 4](#). Ciudad Vieja obsidian flakes, metric values (n = 47).

[Table 5](#). Ciudad Vieja prismatic blades, metric values (n = 557).

[Table 6](#). Ciudad Vieja prismatic blade platform size (proximal segments), metric values (n = 96).

[Table 7](#). Ciudad Vieja small percussion blades, metric values (n = 25).

[Table 8](#). Ciudad Vieja small percussion blade platform size (proximal segments), metric values (n = 13).

[Table 9](#). Ciudad Vieja polyhedral core fragments, metric values (n = 3).

[Table 10](#). Ciudad Vieja laterally retouched points on prismatic blades, metric values (n = 7).

[Table 11](#). Ciudad Vieja bifaces, metric values (n = 4).

Sources Cited

Amaroli, Paul E.

1986 "En la búsqueda de Cuscatlán." Unpublished manuscript, Patronato Pro-Patrimonio Cultural, San Salvador.

Amaroli, Paul

1992 "Algunos grupos cerámicos pipiles de El Salvador." Unpublished report, Consejo Nacional para la Cultura y el Arte, San Salvador.

Andrews, E. Wyllys, V

1976 *The Archaeology of Quelepa, El Salvador*. Middle American Research Institute, Publication 42. Tulane University, New Orleans.

Barón Castro, Rodolfo

1996 *Reseña histórica de la villa de San Salvador*, 2nd ed. Consejo Nacional para la Cultura y el Arte, Ministerio de Educación, San Salvador.

Beaudry, Marilyn P.

1982 "The Ceramics of the Zapotitán Valley." In *Archeology and Volcanism in Central America: The Zapotitán Valley of El Salvador*, edited by Payson D. Sheets, pp. 161-190. University of Texas Press, Austin.

Bense, Judith A, and H. James Wilson

2003 "Archaeological Remains." In *Presidio Santa María de Galve: A Struggle for Survival in Colonial Spanish Pensacola*, edited by Judith A. Bense, pp. 83-209. University Press of Florida, Gainesville.

Black, Kevin D.

1983 "The Zapotitán Valley Survey." In *Archeology and Volcanism in Central America: The Zapotitán Valley of El Salvador*, edited by Payson D. Sheets, pp. 62-97. University of Texas Press, Austin.

Bruhns, Karen Olsen

- 1980 *Cihuatán: An Early Postclassic Town of El Salvador. The 1977-1978 Excavations.* University of Missouri Monographs in Anthropology, No. 5. Department of Anthropology, University of Missouri, Columbia.

Card, Jeb J.

- 2002 "Excavaciones y arquitectura de la Estructura 6F4." In *Investigaciones arqueológicas en Ciudad Vieja, El Salvador: La primigenia villa de San Salvador*, edited by William R. Fowler and Roberto Gallardo, pp. 67-76. Consejo Nacional para la Cultura y el Arte, Ministerio de Educación, San Salvador.

- 2005 "Cultural Innovation During the Invasion and Conquest of Mesoamerica: Hybrid Ceramic Tablewares from Ciudad Vieja, El Salvador." Paper presented at the 70th Annual Meeting of the Society for American Archaeology, Salt Lake City, 1 April, 2005.

Carnegy, Daphne

- 1993 *Tin-Glazed Earthenware: From Maiolica, Faience and Delftware to the Contemporary.* A & C Black, London.

Charlton, Thomas H., and Patricia Fournier G.

- 1993 "Urban and Rural Dimensions of the Contact Period: Central México 1521-1620." In *Ethnohistory and Archaeology: Approaches to Postcontact Change in the Americas*, edited by J. Daniel Rogers and Samuel M. Wilson, pp. 201-220. Plenum Press, New York.

Charlton, Thomas H., and Deborah L. Nichols

- 1992 "Late Postclassic and Colonial Period Elites at Otumba: The Archaeological Dimensions." In *Mesoamerican Elites: An Archaeological Assessment*, edited by Dianne Z. Chase and Arlen F. Chase, pp. 242-258. University of Oklahoma Press, Norman.

Clark, John E.

- 1982 "Manufacture of Mesoamerican Prismatic Blades: An Alternative Technique." In *American Antiquity* 47:355-376.

- 1989 "Obsidian: The Primary Mesoamerican Sources." In *La obsidiana en Mesoamérica*, edited by Margarita Gaxiola G. and John E. Clark, pp. 299-319. Instituto Nacional de Antropología e Historia, México City.

Clark, John E., and Thomas A. Lee, Jr.

1979 "A Behavioral Model for the Obsidian Industry of Chiapa de Corzo." In *Estudios de Cultura Maya* 12:33-51.

Clouse, Robert Alan

1999 "Interpreting Archaeological Data Through Correspondence Analysis." In *Historical Archaeology* 33:90-107.

Cobos, Rafael

1994 *Síntesis de la arqueología de El Salvador*. Colección Antropología e Historia, No. 21. Consejo Nacional para la Cultura y el Arte, Ministerio de Educación, San Salvador.

Cooke, Richard, Luis Alberto Sánchez Herrera, Diana Rocío Caravajal, John Griggs, and Ilean Isaza Aizpurúa

2003 "Los pueblos indígenas de Panamá durante el siglo XVI: Transformaciones sociales y culturales desde una perspectiva arqueológicas y paleoecológica." In *Mesoamérica* 45:1-34.

Cordell, Ann S.

2002 "Continuity and Change in Apalachee Pottery Manufacture." In *Historical Archaeology* 36:36-54.

Deagan, Kathleen

1987 *Artifacts of the Spanish Colonies of Florida and the Caribbean 1500-1800. Volume 1: Ceramics, Glassware, and Beads*. Smithsonian Institution Press, Washington, D.C.

Deagan, Kathleen, and José María Cruxent

2002 *Archaeology at La Isabella: America's First European Town*. Yale University Press, New Haven.

Drennan, Robert D.

1996 *Statistics for Archaeologists: A Commonsense Approach*. Interdisciplinary Contributions to Archaeology. Plenum Press, New York.

Escalante Arce, Pedro Antonio

2001 *Los tlaxcaltecas en Centro América*. Consejo Nacional para la Cultura y el Arte, San Salvador.

Ewen, Charles R.

1991 *From Spaniard to Creole: The Archaeology of Cultural Formation at Puerto Real, Haiti*. The University of Alabama Press, Tuscaloosa.

Fowler, William R., Jr.

1981 *The Pipil-Nicarao of Central America*. Unpublished Ph.D. dissertation, Department of Archaeology, University of Calgary.

1989 *The Cultural Evolution of Ancient Nahua Civilizations: The Pipil-Nicarao of Central America*. University of Oklahoma Press, Norman.

1991a "Lithic Analysis as a Means of Processual Inference in Southern Mesoamerica: A Review of Recent Research." In *Maya Stone Tools*, edited by Thomas R. Hester and Harry J. Shafer, pp. 1-19. Prehistory Press, Madison.

1991b "The Formation of Complex Society among the Nahua Groups of Southeastern Mesoamerica: A Comparison of Two Approaches." In *The Formation of Complex Society in Southeastern Mesoamerica*, edited by William R. Fowler, pp. 193-213. CRC Press, Boca Raton.

Fowler, William R., Jr., and Howard H. Earnest, Jr.

1985 "Settlement Patterns and Prehistory of the Paraíso Basin of El Salvador." In *Journal of Field Archaeology* 12:19-32.

Fowler, William R., and Roberto Gallardo, eds.

2002 *Investigaciones arqueológicas en Ciudad Vieja, El Salvador: La primigenia villa de San Salvador*. Consejo Nacional para la Cultura y el Arte, Ministerio de Educación, San Salvador.

Fowler, William R., Jr., Jane H. Kelley, Frank Asaro, Helen V. Michel, and Fred H. Stross

1987 "The Chipped Stone Industry of Cihuatán and Santa María, El Salvador, and Sources of Obsidian from Cihuatán." In *American Antiquity* 52:151-160.

Fry, Robert E.

1979 "The Economics of Pottery at Tikal, Guatemala: Models of Exchange for Serving Vessels." In *American Antiquity* 44:494-512.

Garraty, Christopher P.

2000 "Ceramic Indices of Aztec Eliteness." In *Ancient Mesoamerica* 11:323-340.

Goggin, John M.

1960 *The Spanish Olive Jar: An Introductory Study*. Yale University Publications in Anthropology, No. 62. Department of Anthropology, Yale University, New Haven.

1968 *Spanish Majolica in the New World: Types of the Sixteenth to Eighteenth Centuries*. Yale University Publications in Anthropology, No. 72. Department of Anthropology, Yale University, New Haven.

Hally, David J.

1986 "The identification of vessel function: A case study from northwest Georgia." In *American Antiquity* 51:267-295.

Haberland, Wolfgang

1964 "Marihua Red-on-Buff and the Pipil Question." In *Ethnos* 1-12:73-186.

Hamilton, Conard C.

2002 "Excavaciones y arquitectura de la Estructura 2F1." In *Investigaciones arqueológicas en Ciudad Vieja, El Salvador: La primigenia villa de San Salvador*, edited by William R. Fowler and Roberto Gallardo, pp. 121-129. Consejo Nacional para la Cultura y el Arte, Ministerio de Educación, San Salvador.

Hendon, Julia Ann

1991 "Status and Power in Classic Maya Society: An Archaeological Study." In *American Anthropologist* 93:894-918.

1987 *The Uses of Maya Structures: A Study of Architecture and Artifact Distribution at Sepulturas, Copan, Honduras*. Unpublished Ph.D. dissertation, Harvard University, Cambridge.

James, Stephen R., Jr.

1988 "A Reassessment of the Chronological and Typological Framework of the Spanish Olive Jar." In *Historical Archaeology* 22(1):43-66.

Kelley, Jane H.

1988 *Cihuatán, El Salvador: A Study in Intrasite Variability*. Vanderbilt University Publications in Anthropology, No. 35. Department of Anthropology, Vanderbilt University, Nashville.

Lessman, Johanna

- 1979 *Italienische Majolika: Katalog der Sammlung*. Herzong Anton Ulrich-Museum Braunschweig, Braunschweig.

Lind, Michael

- 1987 *The Sociocultural Dimensions of Mixtec Ceramics*. Vanderbilt University Publications in Anthropology, No. 33. Department of Anthropology, Vanderbilt University, Nashville.

Lischka, Joseph J.

- 1978 "A functional analysis of Middle Classic ceramics at Kaminaljuyú." In *The Ceramics of Kaminaljuyú, Guatemala*, edited by Ronald K. Wetherington, pp. 223-278. Pennsylvania State University Press, University Park.

Lister, Florence C., and Robert H. Lister

- 1975 *A Descriptive Dictionary for Five Hundred Years of Spanish-Tradition Ceramics [13th Through 18th Centuries]*. Special Publication, No. 1, Society for Historical Archaeology.

- 1982 *Sixteenth-Century Maiolica Pottery in the Valley of México*. Anthropological Papers of the University of Arizona, Vol. 39. The University of Arizona Press, Tucson.

- 1987 *Andalusian Ceramics in Spain and New Spain: A Cultural Register from the Third Century B.C. to 1700*. University of Arizona Press, Tucson.

Longyear, John M., III

- 1966 "Archaeological Survey of El Salvador." In *Handbook of Middle American Indians*, edited by Robert Wauchope, Vol. 4: *Archaeological Frontiers and External Connections*, edited by Gordon F. Ekholm and Gordon R. Willey, pp. 132-156. University of Texas Press, Austin.

Marken, Mitchell W.

- 1994 *Pottery From Spanish Shipwrecks 1500-1800*. University Press of Florida, Gainesville.

Markens, Robert Joel

- 2004 *Ceramic Chronology in the Valley of Oaxaca, México During the Late Classic and Postclassic Periods and the Organization of Ceramic Production*. Unpublished Ph.D. dissertation, Department of Archaeology, Brandeis University.

Pleguezuelo, Alfonso, and M. Pilar LaFuente

1995 "Cerámicas de Andalucía occidental (1200-1600)." In *Spanish Medieval Ceramics in Spain and the British Isles/Cerámica medieval española en España y en las Islas Británicas*, edited by C.M. Gerrard, A. Gutiérrez and A.G. Vince, pp. 217-244. BAR International Series 610. Tempvs Reparatum, Oxford.

Poole, Julia E.

1997 *Italian Maiolica*. Cambridge University Press, Cambridge.

Reina, Ruben E., and Robert M. Hill, II

1978 *The Traditional Pottery of Guatemala*. University of Texas Press, Austin.

Rice, Prudence M.

1987 *Pottery Analysis: A Sourcebook*. University of Chicago Press, Chicago.

Rodríguez-Alegría, Enrique, Hector Neff, and Michael D. Glascock

2003 "Indigenous Ware or Spanish Import? The Case of Indígena Ware and Approaches to Power in Colonial México." In *Latin American Antiquity* 14(1):67-81.

Rogers, J. Daniel

1993 "The Social and Material Implications of Culture Contact on the Northern Plains." In *Ethnohistory and Archaeology: Approaches to Postcontact Change in the Americas*, edited by J. Daniel Rogers and Samuel M. Wilson, pp. 73-88. Plenum Press, New York.

Rouse, Irving

1960 "The Classification of Artifacts in Archaeology." In *American Antiquity* 25:313-323.

Saunders, Rebecca

2000 *Stability & Change in Guale Indian Pottery, A.D. 1300-1702*. University of Alabama Press, Tuscaloosa.

Scott, Elizabeth M.

2002 "Observaciones preliminares sobre los restos fáunicos de la Operación 99-2." In *Investigaciones arqueológicas en Ciudad Vieja, El Salvador: La primigenia villa de San Salvador*, edited by William R. Fowler and Roberto Gallardo, Consejo Nacional para la Cultura y el Arte, Ministerio de Educación, San Salvador.

Sharer, Robert J.

1978 "Pottery and Conclusions." In *The Prehistory of Chalchuapa, El Salvador*, edited by Robert J. Sharer, vol. 3. University of Pennsylvania Press, Philadelphia.

Sheets, Payson D.

1975 "Behavioral Analysis and the Structure of an Industry." In *Current Anthropology* 16:369-391.

1978a "Artifacts." In *The Prehistory of Chalchuapa, El Salvador*, edited by Robert J. Sharer, vol. 2, pp. 1-131. University of Pennsylvania Press, Philadelphia.

1978b "From Craftsman to Cog: Qualitative Views of Mesoamerican Lithic Technology." In *Papers on the Economy and Architecture of the Ancient Maya*, edited by Raymond V. Sidrys, pp. 40-71. University of California, Los Angeles, Institute of Archaeology, Monograph 8.

1984 "The Prehistory of El Salvador: An Interpretive Summary." In *The Archaeology of Lower Central America*, edited by Frederick W. Lange and Doris Z. Stone, pp. 85-112. University of New Mexico Press, Albuquerque.

Sheets, Payson D., and Guy Muto

1972 "Pressure Blades and Total Cutting Edge: An Experiment in Lithic Technology." In *Science* 175:632-634.

Shennan, Stephen

1997 *Quantifying Archaeology*, 2nd ed. University of Iowa Press, Iowa City.

Sherman, William L.

1979 *Forced Native Labor in Sixteenth-Century Central America*. University of Nebraska Press, Lincoln.

Sidrys, Raymond V.

1976 *Mesoamerica: An Archaeological Analysis of a Low-Energy Civilization*. Ph.D. dissertation, University of California, Los Angeles. University Microfilms, Ann Arbor.

1978 "Notes on the Obsidian Prismatic Blades at Seibal and Altar de Sacrificios." In *Excavations at Seibal: Artifacts*, edited by Gordon R. Willey, pp. 146-152. *Memoirs of the Peabody Museum of Archaeology and Ethnology*, vol. 14, no. 1. Harvard University, Cambridge.

Silvia, Diane E.

2000 *Indian and French Interaction in Colonial Louisiana During the Early Eighteenth Century*. Unpublished doctoral dissertation, Tulane University, New Orleans, Louisiana.

2002 "Native American and French Cultural Dynamics on the Gulf Coast." In *Historical Archaeology* 36(1):26-35.

Thompson, Raymond H.

1958 *Modern Yucatecan Pottery Making*. Memoirs of the Society for American Archaeology, Vol. 23 (no. 4, part 2). Society for American Archaeology, Salt Lake City.

Underhill, Anne P.

1991 "Pottery Production in Chiefdoms: The Longshan Period in Northern China." In *World Archaeology* 23:12-27.

van Buren, Mary

1999 "Tarapaya: An Elite Spanish Residence Near Colonial Potosí in Comparative Perspective." In *Historical Archaeology* 33:101-115.

Verhagen, Inez Leontine

1997 *Caluco, El Salvador: The Archaeology of a Colonial Indian Town in Comparative Perspective*. Unpublished Ph.D. dissertation, Department of Anthropology, Vanderbilt University, Nashville.

Vernon, Richard

1988 "17th-Century Apalachee Colono Ware as a Reflection of Demography, Economics, and Acculturation." In *Historical Archaeology* 22:76-82.

Watson, Wendy M.

1986 *Italian Renaissance Maiolica from the William A. Clark Collection*. Scala Books, London.

Weisman, Brent Richards

1992 *Excavations on the Franciscan Frontier: Archaeology at the Fig Springs Mission*. University Press of Florida, Gainesville.