

# Petrography, Production, and Provenance of Pottery Sherds from La Blanca, Guatemala

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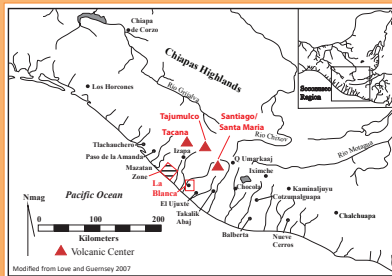
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## 1) Abstract (slightly modified from original)

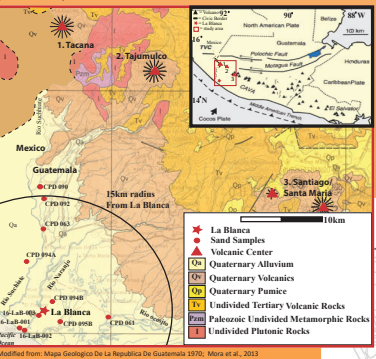
The Middle Preclassic (900-600 B.C.E.) was a critical time of political and social centralization in the Guatemalan Pacific coastal plain. Of particular interest is the site of La Blanca, which had an influx of peoples from the site of Ojo de Agua in the Mazatan zone subsequently making La Blanca one of the largest communities to rise in the region and possibly develop urbanization. To reconstruct elements of everyday life we use excavated ceramic refuse to observe dynamics surrounding three households. This, in turn, elucidates components of La Blanca's domestic economy associated with the manufacturing of ceramics. To observe the manufacturing dynamics around ceramic production, we have adapted William Dickinson's methods of mapping regional interaction spheres using petrography. The adapted Dickinson method entails a review of local geologic terrain and the collection of 90 mostly diagnostic sherds of determinable vessel form from excavations at La Blanca. Petrographic examination of sherd thin sections has shown three distinct compositional groups: Mineralic, Volcanic, and Vitric. From these groups, representative samples were selected, and point counted using the Gazzi-Dickinson method. To correlate sherd samples to potential sources, we sampled three modern sands and received seven additional sands from Dr. Neff at California State University Long Beach. These samples were analyzed using the same methods as the sherds; the results suggest a local geologic provenance for raw materials and the use of open sources among each of the households. Due to the variability of composition and material characteristics among each of the households, it appears that each household was producing their own pottery.

## 2) Introduction

The focus of this pilot study is the Soconusco region of the Guatemalan Pacific coastal plain during the Middle Preclassic (900-600 B.C.E.) period in which the region experienced fundamental social, political, and economic development. The development of socio-political and economic centralization during the Preclassic has been linked with the rise of La Blanca, one of the region's largest communities at this time (Coe 1961; Fauvelle 2010; Love 1989, 1993, 2002, 2007; Love and Guernsey 2007, 2011). Urbanization is thought to have occurred in tandem with political and economic centralization, associated with social stratification, and is the current focus of investigations at La Blanca (Love 2014).



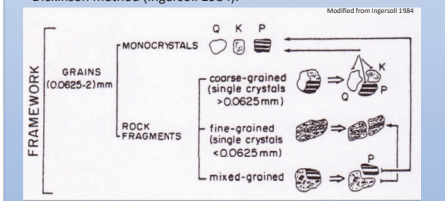
It is the goal of this pilot study to contribute to the current investigations in delineating the occurrence of urbanization at La Blanca by looking at the use of raw material in the manufacturing of ceramics. By identifying the raw materials used in ceramics, I hope to gain insight into production dynamics and the domestic economy at La Blanca. These insights will contribute to our understanding of the Middle Preclassic in the Soconusco region, and development and potential urbanization at La Blanca.



Photographs depicting sherd fragments sampled in this study. A. Representative photo of Alamo ware sherd (LB-A32-002). B. Representative photo of Cuca ware sherd (LB-C32-015). C. Representative photo of Melendez ware sherd (LB-MJ32-027).

## 3) Methods

- Review of potential geologic sources, e.g. volcanic centers and rivers from the C.A.M.A. within 15km of La Blanca.
- 90 sherds total from three households (30 each) and 10 modern sand samples.
- Three ware types selected: **Melendez**, used for daily serving, consisting of bowl (5per) and jar (5per) forms; **Alamo**, used for cooking or storage, consisting of jar (10per) forms; **Cuca**, used for feasting, consisting of bowl (10per) forms (Love 1989, 2002).
- To increase resolution to a site level, predominantly diagnostic sherds (determinable vessel forms) were selected; care was also taken that no one vessel was sampled twice during selection.
- All Sherds and sand samples have been thin sectioned and stained for feldspar identification using methods outlined in Marsaglia and Tazaki (1992). Sherds have been oriented perpendicular to vessel walls to better observe microstructures.
- All samples were grouped based on petrographic description, focusing on major mineral and lithic fragments, and diagnostic microstructures (Dickinson 2006; Pavia et al 2013; Lawrence et al 2016).
- Based on descriptive temper groups representatives of each group (sherds and sands) were statistically analyzed. A total of 300 points (grains) were counted for each representative sample using the Gazzi-Dickinson method (Ingersoll 1984).

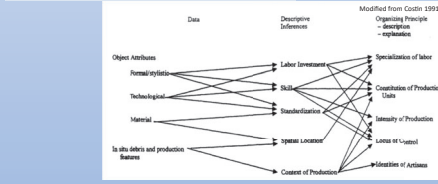
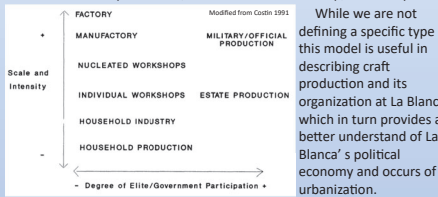


## 4) Theory

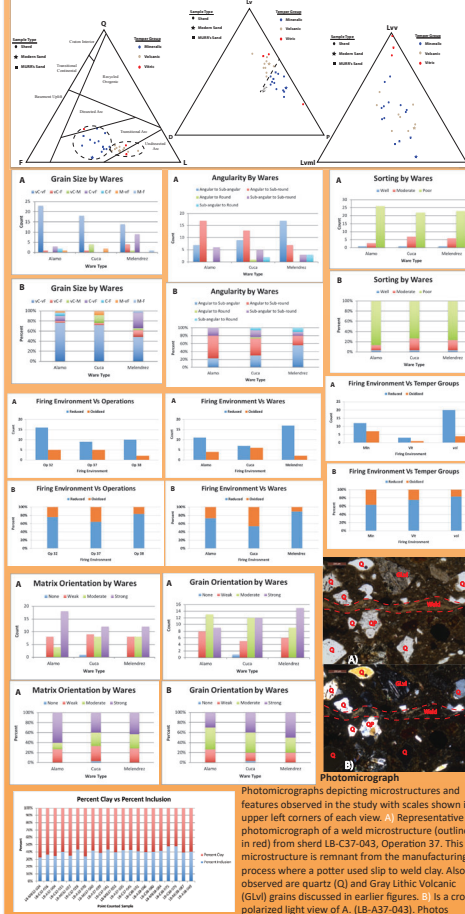
**Craft Production**  
By observing dynamics surrounding raw materials and their use in ceramics, we are contributing to the investigation of urbanization at La Blanca (Wells 2012; Hirth 1996). To communicate these dynamics we use terminology from Costin's (1991, 2000, 2005) craft production model to discuss the organization of production.

Costin's craft production model examines four elements of production: **Intensity**, part vs full time production; **Scale**, the size and recruitment of the production unit; **Concentration**, the geographical distribution of craft; **Context**, the affiliation of producers with sociopolitical components of demand (Independent vs Attached).

These four elements are used to define the craft production types: such as household production, individual work workshop, or Factory.



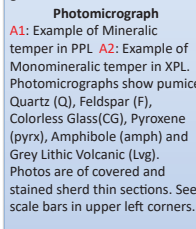
## 5) Results: Continued



## 5) Results: Temper Groups

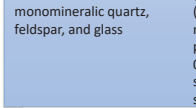
### A) Temper group 1

- Mineralic**
- Predominantly composed of monomineralic quartz and feldspar
- Common lithic volcanics and glass.



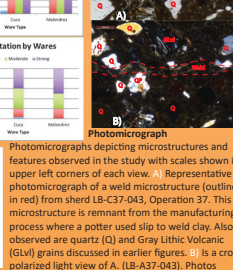
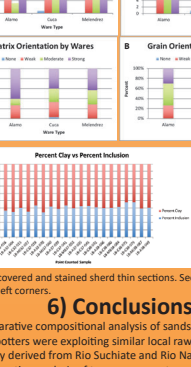
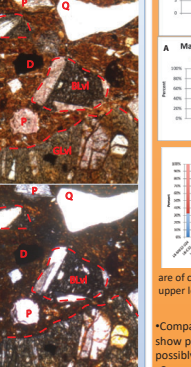
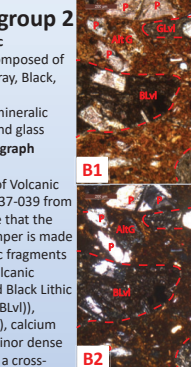
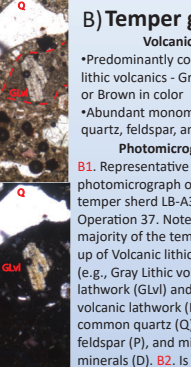
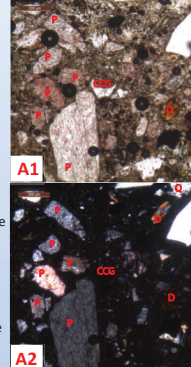
### B) Temper group 2

- Volcanic**
- Predominantly composed of lithic volcanics - Gray, Black, or Brown in color
- Abundant monomineralic quartz, feldspar, and glass



### C) Temper group 3

- Vitric**
- Predominantly composed of clear colorless glass.
- Abundant to common monomineralic quartz, feldspar, and glass



are of covered and stained sherd thin sections. See scale bars in upper left corners.

## 6) Conclusions

- Comparative compositional analysis of sands and sherds show potters were exploiting similar raw materials possibly derived from Rio Suchiate and Rio Naranjo.
- Comparative analysis of temper groups to wares, shows a preference of volcanic temper in Melendez wares. No other wares appear to have standardized or preferred composition; this is true for temper groups across operations.
- Material analysis suggests paste processing was done because of manually added temper.
- Differences in manufacturing technique and or a lack of control in manufacturing are observed across temper groups; with varied paste orientation, microstructures, and firing environments.
- Raw material acquisition, paste processing, and manufacturing techniques do not appear to be standardized across Alamo, Cuca, and Melendez wares, nor across the three sampled operations.
- Each household appears to be producing their own pottery for consumption or trading and consuming pottery amongst the community because of the proximity of the operations.

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