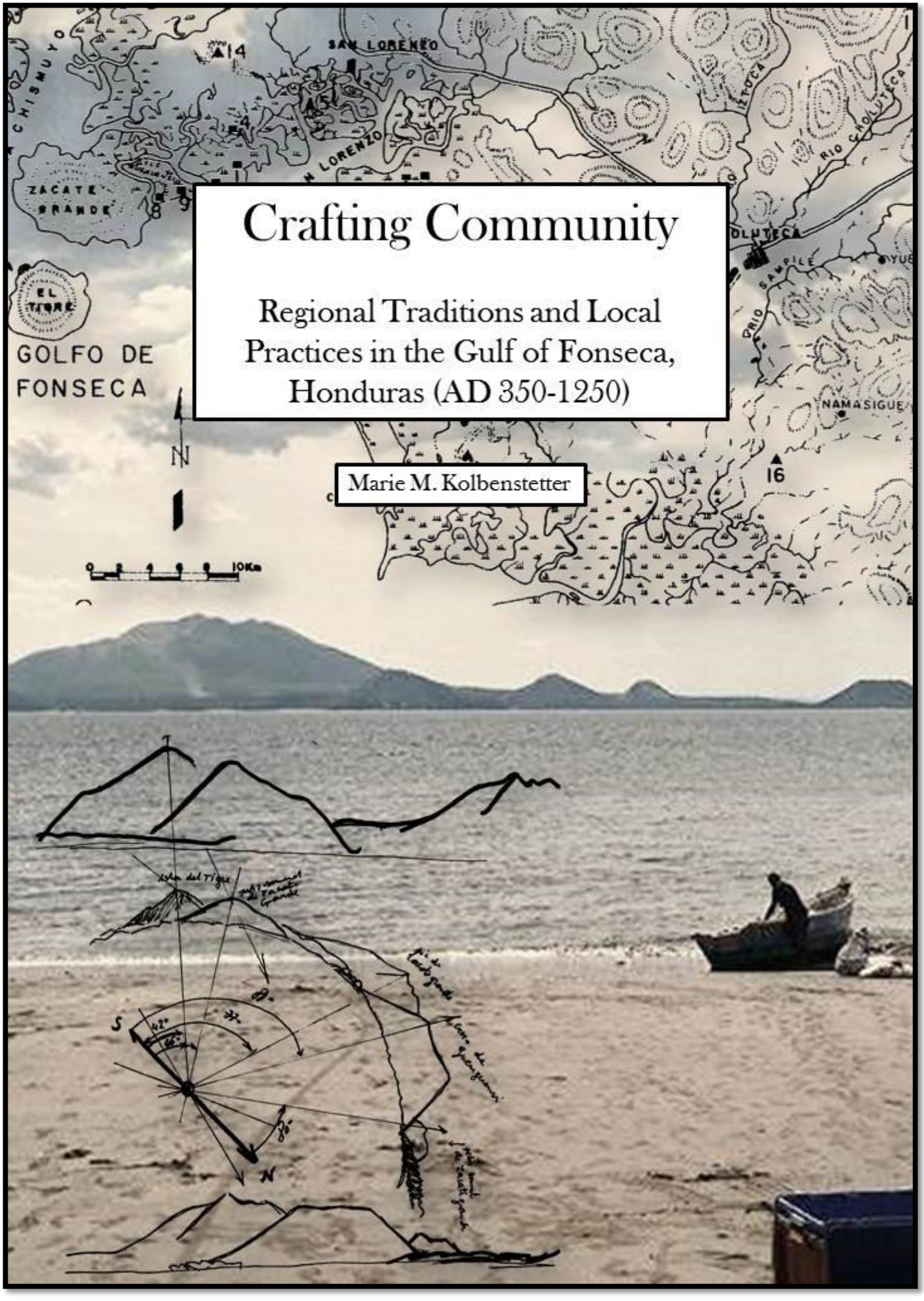

Crafting Community

Regional Traditions and Local Practices in the Gulf of Fonseca, Honduras (AD 350-1250)

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Cover:
Design: Marie Kolbenstetter.
Map from the Gulf of Fonseca, by Claude Baudez (unpublished manuscript), sketch of the layout of Zacate Grande by Claude Baudez (personal notes).
Background: Picture by author of Fisherman in the Bay of San Lorenzo, Gulf of Fonseca

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Religion and Society in Native American Cultures
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1 Introduction

> "*La hermosa bahía reposaba en calma a la luz solar de la mañana. Sus islas cónicas clavábanse en el cielo despejado. Con sus laderas forestadas escudaba las velas de algodón de unos bongos cargados que se esforzaban en vano por aprovechar las últimas brisas que llegaban del sudeste en perezosas bocanadas. Algunos de los marinos bronceados y desnudos plegaron las velas, y parándose en los espacios que quedaban entre las esteras redondas que servían de protección a los pasajeros y a la carga que pudiera estar en peligro, hundían al unísono sus remos de madera en el agua salada azul. Los bongos eran embarcaciones robustas confeccionadas cada una de un solo tronco macizo, pero respondían a los golpes de remo como una bestia cachazuda al primer chasquido del látigo. Sus puntiagudas proas se elevaban, quedaban suspendidas un momento, y luego caían hasta encontrar el lecho móvil de las olas que rodaban mansamente a través*
>
> (Stone 1954, 66)[1]

Ceramic material has often been put at the center of archaeological studies. It is in itself not surprising as it is the material class that is on average the most represented in archaeological assemblages in the Americas. In the archaeological narrative -especially so in Central America- ceramic material has served many purposes: from constructing chronological sequences (e.g. Abel-Vidor et al. 1987; Andrews 1976; Baudez 1967; Baudez and Becquelin 1973; Coe and Baudez 1961; Healy 1981), to extrapolating culture and appurtenance to an ethnolinguistic group (e.g. Hoopes and Fonseca 2003; Lothrop 1926; McCafferty 2005, 2011; Steinbrenner 2002; Strong 1948; Strong et al. 1936; Yde 1935), to reconstructing mobility and exchange (e.g. Dennett 2016; Hoopes and McCafferty 1989; McCafferty et al. 2009; McCafferty and Dennett 2013; Steinbrenner 2010), amongst others. There is also a risk in ascribing too much meaning and giving this artefact class such a reaching power over the archaeological narrative.

Ceramics are also where this thesis project starts. Any archaeological work has the greater aim of unravelling past peoples' lives. It is true that this aim rarely ever reaches completion: at best, the material we find can give us snapshots of past lives, brief moments in time. The potential is even more reduced considering that the ceramic material we often recover is not always the full assemblage. Human life should, however, always stay at the center of a project. How do people behave and how are behaviors related to their experienced identity? This is a question that many have focused their

[1] In the book *Estampas de Honduras* (1954), Doris Stone writes in a fictional style about the pre-Colombian past of Honduras.

research around answering (e.g. Dennett 2016; Dennett and McCafferty 2011; Joyce 2017).

Ceramic assemblages do contribute, in that sense, in giving us insights into the lives of the people who made them: on their decision-making, their conceptualization, the ways they transfer knowledge of their craft or the way they protect it, their bodily gestures, and their trademark habits and recipes. It also has the power to inform us about the consumer these were produced for: what product corresponds to tastes or cultural norms. The pot, to the owner, can possess a certain ideological or ritual embeddedness, as well as being a symbol of local culture and craft (e.g. Joyce 2017). The product carries multi-vocal, layered, meaning which ties it to both producers and consumers, and all observers throughout its existence. Even on a laboratory table or a museum shelf, meanings are constantly ascribed: the archaeological work sometimes corresponds to untangling and exposing this network of meanings ascribed by different actors taking part in this ceramic economy (Joyce 2013).

Context is essential in understanding those entanglements: in fact, all of those meanings can only be understood if examining the social context in which an object comes into being and later exists. As a "social animal", an individual's identity only exists in his relationship with others and the world around him. This identity is constantly modelled, renewed, and negotiated through these relationships and interactions (e.g. Hodder 2011). This observation is valid for cultural identities as much as for local ones. The definition of identity paradoxically seems to become more narrow in the face of otherness (Loomba 2005, 64).

How did these considerations on identity-making manifest themselves in the Gulf of Fonseca? And how much can materials reveal to us in this respect? The pedigree of the material assemblage subject of this thesis also defined the pedigree of the research *per se*. In fact, the material stems from survey, surface collections, test pitting and excavations done during the 1964–1965 field season by French archaeologist Claude Baudez. Herewith, an additional layer of ascribed meaning comes to light, and the material can only be understood if one is aware of the filter of personal subjectivity that was applied to it by the person who originally collected them. This work has therefore a double archaeological mission: to create an "archaeological" narrative of someone else's work to keep it separate while creating a separate body of work, and reconstruct to the best ability certain moments of past peoples' lives in the Gulf of Fonseca.

1.1 The Gulf of Fonseca: A Liminal Area?

1.1.1 The Gulf of Fonseca in Archaeological Research

The Gulf of Fonseca has from early on been identified as a problematic area of research. Many publications on Lower Central America[2], Greater Nicoya[3], Honduras, the Southern Mesoamerican frontier[4] or El Salvador (e.g. Henderson and Beaudry-Corbett 1993; Healy 1984 ; Lange 1984, 1994; Lange et al. 1992; Lange and Stone 1984; Stone 1957) have commented on the lack of research in the Gulf of Fonseca area. In recent years, it has been postulated that the Gulf of Fonseca may have held a key position in the trade of style and ideas between El Salvador, Honduras and Pacific Nicaragua, particularly in the dispersion of white slipped ceramics (e.g. Dennett 2016).

The first exhaustive archaeological description of the Honduran part of the Gulf of Fonseca is Doris Stone's monograph *The Archaeology of Central and Southern Honduras* (1957). Prior work that mentioned the Gulf of Fonseca only mentioned it marginally to other research focuses, such as the works of Squier (1860), Vallejo (1893), Brinton (1895), Lehmann (1920), Lothrop (1926), Mason (1940) and Lunardi (1945, 1948). Pictured by some as being on the southwestern frontier of the Maya world and as being well anchored within Mesoamerica, the region has rarely received scholarly attention as an independent entity and questions of local tradition and culture has been largely ignored. The most extensive work to this day has been done by Claude Baudez during a field season in 1964-65 (Baudez 1965, 1966, 1973, 1976). It is this marginal position within the discipline that has proven problematic in the history of investigations and has left the Gulf's pre-Hispanic narrative in the shadows. The lack of homogeneity in the archaeological material found in the region, as well as the lack of apparent monumental structures, certainly contributed to that poor understanding of its archaeology.

Scholars agree that more extensive research is needed in the area. In recent years, however, the area has become progressively more difficult to work in due to political and social unrest and security issues in both El Salvador and Honduras. Work has been done in the Nicaraguan and Salvadoran parts of the Gulf of Fonseca in the last two decades (e.g. Amador n.d.; Brown 2013; Brown et al. 2014; Escamilla and Shibata 2006; Gomez 2010; Ito et al. 2011; Valdivieso et al. 2006). In Honduras, the area of Choluteca is

[2] Lower Central America qualifies the area whose northern boundary bisects Honduras to the north and whose southern boundary is situated in southern Panama.
[3] Greater Nicoya is an archaeological area encompassing Pacific Nicaragua and the Nicoya Peninsula in Costa Rica.
[4] Depending on the definition, the southern Mesoamerican frontier either runs through Honduras from the Gulf of Fonseca to the Sula Plain or runs through Costa Rica and Nicaragua as to encompass Greater Nicoya.

currently getting some attention through survey projects from the Universidad Autónoma de Honduras, and a petroglyph survey project by Alejandro Figueroa. Yet, the archaeological knowledge of the Gulf of Fonseca remains vague, and research is often limited to previously disturbed context such as rescue excavations.

1.1.2 Geography of the Gulf of Fonseca

The country of Honduras covers 112,067 km^2 and is the second largest country in Central America. It is delimited by the Caribbean to the north, by the Pacific Ocean around the Gulf of Fonseca to the south; to the east it shares a border to Nicaragua and to the west, Honduras shares a border with Guatemala; in the southwest, the country borders El Salvador (fig. 1).

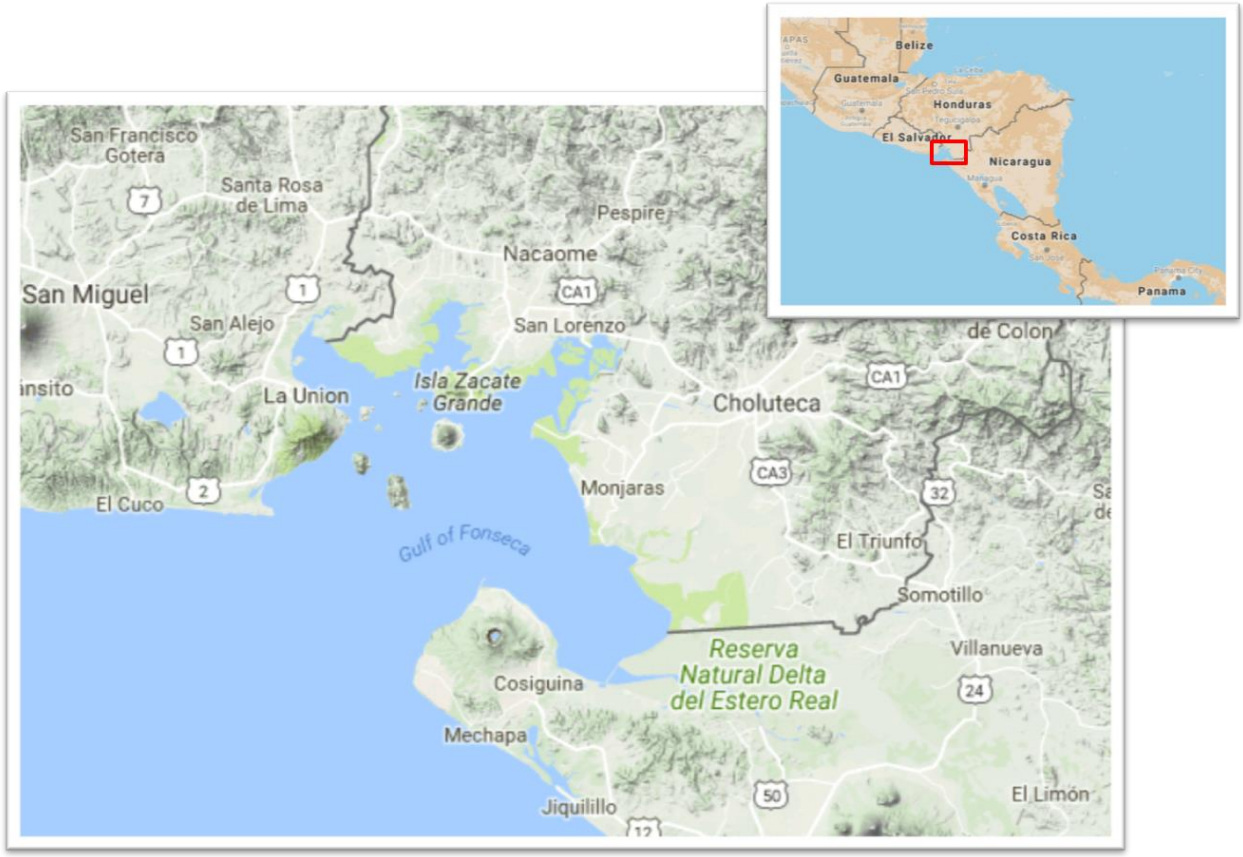


Figure 1-Map of the Gulf of Fonseca within Central America (made by author in Google Maps).

Geographically, the region is characterized by its mountainous interior and coastal plains. The ecological environment within Honduras varies tremendously; from mangrove swamps to tropical forests and from savannas to fertile river valleys. Volcanoes are only found in the most southern tip of Honduras. Some volcanic islands remain off the coast in the Gulf of Fonseca. The highlands of the interior constitute several distinct east-west

oriented mountain ranges, covered in pine and oak forests. The areas thought of as the most densely populated in the past are the river valleys, such as the Valleys of Ulúa, Aguan, Otoro, Sensenti and Comayagua (Healy 1984, 115). These valley floors, covered by rich alluvium, are some of the most fertile in the Honduras.

The western Pacific coast, the Gulf of Fonseca, is partially covered by a semi-deciduous tropical forest, maintained through seasonal heavy rainfall. Around the city of Choluteca, savanna is more common (Healy 1984, 114). Patches of mangrove swamps are spread out along the different bays that make up the Pacific Coast (Baudez 1973, 506; West and Augelli 1976, 428). The Gulf of Fonseca's coast consists of two ecologically distinct zones. At the foot of the highlands in El Salvador, a network of rivers creates a fertile alluvial plain. This plain then transitions into mangrove forests, home to a complex riverine system of narrow salt water estuaries providing a fertile environment for a variety of mollusks (Baudez 1973, 509). On the Nicaraguan side, the plain is dominated by the Cosigüina volcano. There are three major rivers which end their course in the Gulf of Fonseca: the Goascorán, the Nacaome and the Río Grande de Choluteca. This diverse environment certainly offered advantages to dwellers: the different sources of water and the diverse environment provided access to a variety of wildlife for hunting and fishing; and the volcanic activity produced fertile soils for horticulture and agriculture. The Gulf itself offers a natural harbor, and the numerous estuaries and rivers provide an inland connection. However, the Gulf is situated in the impact area of the Ilopango volcano in El Salvador. The ash falls from the volcano may have at times impacted visibility and ability to navigate the waters of the Gulf.

1.1.3 A Short Ethnohistory

The accounts about the Gulf's ethnohistory vary according to what source is consulted. There seems to be a general agreement among scholars, however, that the Gulf was as ethnically and culturally diverse as its environment. Historical accounts and linguistic work have come up with many denominations for linguistic groups which need to be situated in the Gulf of Fonseca. The three main historical sources are a 1576 letter by Diego García de Palacio for the King of Spain, a travel log by Fray Alonso Ponce in 1584 and a history by Francisco Vásquez (Stone 1957, 83). There are other stories in which there are brief accounts on the area of the Gulf of Fonseca by Gómara, Herrera, Oviedo and Juarros. Later additions to Stone's reconstruction of archival and archaeological

nature (Brown and Vásquez 2014; Dennett 2018; Steinbrenner 2010; Werner 2000, 2008, 2009) have allowed for a better idea of the linguistic composition of the Gulf.

The Honduran coasts of the Gulf were referred to, in historical documents, as Chorotega Malalacá or Choluteca Malalacá. The boundaries to that territory were the same as today, delimited by rivers (Stone 1957, 82). At the time of conquest, the Mangue-speakers were a majority in the Gulf area. Second in numbers were the Ulúa-speakers (or Ulva). Finally, a group who were designated as the Potón was a minority in the Choluteca region. Additionally, Vásquez (1944, vol.4, 63-64, in Stone 1957) documents the presence of Lenca and Nahua speakers around the convent of Nacaome (Stone 1957, 83). Additional Nahua speakers seem to have settled around the Cosigüina in Nicaragua (Dennett 2008). An additional, lesser known group is the Maribios (also called Subtiaba) that settled exclusively in the territory that is now the Department of León and Chinandega. They too spoke an Oto-manguean language. A small group relocated shortly before conquest to the modern Department of New Segovia (Steinbrenner 2010:81). They have recently been at the center of investigations in Chinandega (Brown and Vasquez 2014). García de Palacio, however, documents only two tongues in Choluteca: Mangue and Chontal.

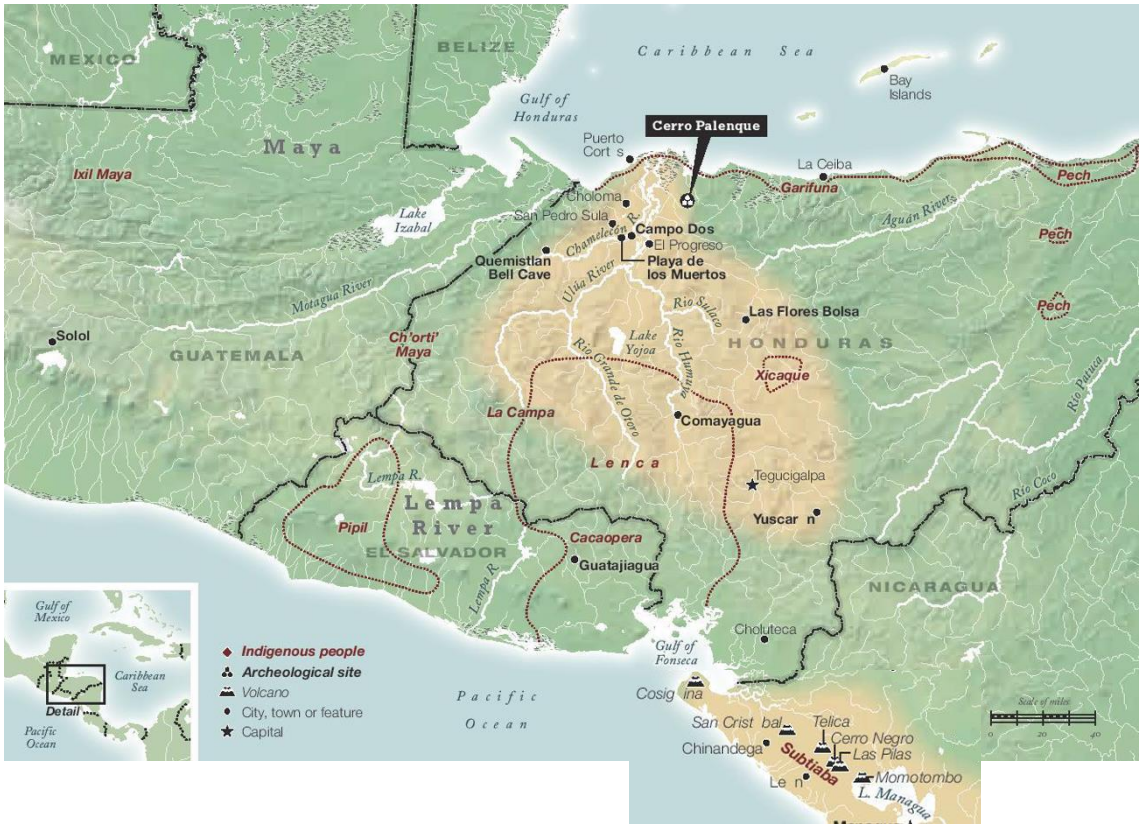


Figure 2- Location of historically documented language groups around the Gulf of Fonseca at time of conquest (adapted from

http://www.latino.si.edu/exhibitions/centralamericarevealed/CACPR_gallery/maps_PDF/_NicoyaFINAL_LWRZ.pdf).

The Chorotega-Mangue speakers would have occupied the western half of the modern department of Choluteca and Western Nicaragua. The Ulva-speakers would have appeared in the region earlier than the Mangue, and belong to the Cacaopera-Matagalpa family. They occupied the territory corresponding to the modern province of San Miguel in El Salvador, the eastern half of Choluteca and partly western Nicaragua (fig. 2). Records concerning this group are very sparse (Healy 1984b, 116). There is also a possible presence of further Matagalpan speakers in the Northeast of Choluteca, however it is unclear how long their presence lasted and to where it stretched. They were, however, more securely documented in western Nicaragua and Eastern El Salvador (Stone 1957).

The term Potón is the most problematic to elucidate. Palacio speaks of the Potón for Eastern El Salvador, whereas Ponce places them in the Gulf of Fonseca, however exclusively on the islands of the Bay of Fonseca. It is now clear that the term Potón in reality corresponds to Lenca speakers (Gomez 2010). These Lenca speakers have also been sporadically assigned to the mainland, mainly the northern portion of Choluteca (Stone 1957, 86). However, due to the variation in denomination, it is possible to this that the spoken dialect was different.

The pre-Hispanic composition of the Gulf remains unknown, and as the assemblages discussed in this thesis mostly date to 500 years before conquest, it seems to be an futile project to try and match up archaeological assemblages to speakers of a particular language group. In this subdivision, ideas of local dialects, *lingua franca* and plurilingualism have, in the area of the Gulf, mostly been ignored. Maps have, in this wider project, not been of great help. Appurtenance to the same language family certainly did not reflect appurtenance to the same culture or similar practices.

I reason that the use of maps and artificial boundaries has, in reality, been counterproductive to assessing the ethnolinguistic situation in the Gulf of Fonseca: with the aforementioned diversity, it is unlikely that the ethnic boundaries -*if* they existed- were envisioned as we do today (c.f. Dennett 2018). The grouping of settlements would not have been related to the travel proximity by land: rather, settlements from different linguistic groups likely used waterways to stay in contact. This would support the theory - as advanced by Hoopes (2005, 4) for Greater Nicoya- that a unified cultural area is not what we are looking at.

The Gulf of Fonseca has been argued as "historiographical void" (Gomez 2010, 5). As we have seen before, the Gulf of Fonseca has only been really considered marginally to different neighboring areas without attracting much focus. This observation is also valid for ethnolinguistic, ethnohistory and general historical work. This liminality in research, I argue, stems partly from the conceptions of identity which have been promulgated in past archaeological writings about Central America.

1.2 Problems, Objectives and Research Question

1.2.1 Problem and Aims

The problem that arose in European archaeology in the 19th century with the idea of "archaeological cultures" –which implied a direct correspondence between material assemblages and ethnic groups (Trigger 1981, 161) - survived somewhat longer in Latin American archaeology, and more particularly Central America. Idea that ethnic groups would be then delimited by boundaries in *cultural areas* became the foundation for the culture-historical approach that became widespread in American archaeology in the 20th century (Childe 1956, 28; Trigger 1989, 163-74). This mental image of a one-to-one correspondence between material assemblages and ethnicity was, on paper, abandoned after World War II. However, the idea survived in approaches to identity in Central American archaeology. This is partly due to the poor research resolution in Central America, where areas, regions, and ethnic markers have been mobilized as heuristic devices to create the regional narrative. These ideas, perpetuated over time, became recognized as facts (Geurds, personal communication). However, as argued in relational realist archaeology, "while we can study relationship, change, artefact, bodies, materials, places, and landscapes, it does not make sense to seek singular principles organizing these, such as the presence of a specific culture, belief system, or social structure" (Fowler 2013, 2).

In areas as culturally diverse and heterogeneous as the Gulf of Fonseca, this correspondence is difficult to establish, as valid comparisons are not always available. The relationship between ethnicity and material culture has continuously proven problematic in Central America. This is linked in part to the history of archaeological research in region, where archaeologists continue to struggle to understand and interpret change in the archaeological record. Investigations, in the past decade, have started to use an approach based on social identity of potters within a community, according attention to variations in production, following a "constellation of practice" approach (e.g. Dennett

2016; Joyce 2012, 2017; Steinbrenner 2010). These approaches have started to become progressively more technological based rather than purely art historic, which has led to an improved understanding of regional networks, especially between Honduras and Nicaragua . I argue in this thesis that some aspect of culture may well have been mirrored in the production of ceramics: these would have represented other non-ethnic forms of belonging within a locality and within local communities. In this thesis I propose an approach to this problem based on practices and technology combined with environmental factors as an alternative.

The previous sections have lightly sketched the problems being faced when investigating the Gulf of Fonseca: a light archaeological background anchored in a poorly understood socio-cultural and natural environment. However, they have also shown the potential and need for further investigative work in the area.

Approaches have, so far, struggled with addressing the everyday life of past peoples. Generally speaking, local cultures are too often seen as "cultures removed from space and time" (Wendrich 2016, 8). Therefore, this research will be focused around craft as a way to inform on everyday life: *how* people lived and *what* they did (and *how* they did it). The identities I am looking for are social identities: the community's identity *vis-à-vis* the local population, the local groups' identity towards foreign groups, and the local communities' identity based on their relationship to the landscape and environment.

Through analyzing the ceramic material from a technological point of view, I aim to identify parallel local potting traditions that developed independently at different sites. Furthermore, I would like to examine to what extent different local identities in potting communities can be inferred from different potting practices. I will then observe how the ceramic material reflects the relationship between the potters and their surrounding environment. Finally, I aim to show how the sites relate to each other, and further, how they relate to sites from the surrounding region.

The material that this thesis will be based on has its origins in twenty different sites surveyed by Claude Baudez in 1964 and 1965 in the region of the Gulf of Fonseca. The material represents the time span between A.D. 370 (+/-100) until shortly before contact period. The pedigree of the material is problematic: while about 31,000 sherds were originally collected, and used by Claude Baudez to create his preliminary typology, he only sampled 776 to be exported back to Europe. Three sites in particular have a higher

number of sherds attributed to them: El Espino, Monte Libano and La Danta. These three sites will be the focus of this study.

The *chaîne opératoire* analysis seemed to fit the assemblage best. In fact, as a partial typology was already brought in existence by Claude Baudez, the operational sequence analysis seemed to complement those observations well. Finally, this research aims to tell and inform about the people who lived in the Gulf of Fonseca, about their traditions, the sociality of their technology and about their crafting practices. There will be an emphasis on attempting to define the local identity, and to observe how those fit in their contemporary regional identities and practices.

1.2.2 Research Questions

For the aims which have been outlined for this research, the following questions are relevant:

- What technological choices can be recognized for each studied locality?
  - Can these technological markers be observed regionally or locally?
  - Is there a continuity of potting traditions in the Gulf of Fonseca?
  - How can technological markers and communities of practices be associated?
  - How permeable is the tradition to innovation?
- How are crafting communities –in particular potter communities- constructed?
  - How is craft and production used to recreate and maintain tradition?
  - How is craft used to negotiate identities?
  - How do different crafting communities interact?
- What was the role of the different sites on a regional and interregional scale?
  - How can resilience or permeability be identified?
  - How are pan-regional traditions adapted locally?
  - How can the choices of the integration or rejection of certain styles inform us over the local position of foreign goods?
  - How can liminality be discussed in the context of the Gulf of Fonseca?
- What interpretations can be drawn from the ceramics in context about questions of social, political, religious and crafting identities?
  - What non-ethnic form of belonging can be identified in the Gulf of Fonseca?

1.3 Conceptual Approach

1.3.1 Concept Definitions

In this research, I will use following concept. I order to clarify their use in this particular research context; I will use them with the following definitions:

- *Identity*- When writing about identity, I am writing about the plural identities that make up an individual: the social, political, religious, cultural identities both chosen and born into. Except when explicitly stipulated, I will not be referring to ethnic identity. The identities that are at the center of this research are the ones through which an individual reflects on his or her belonging to a certain community — either related to the settlements or to groups of craftspeople. When using cultural identity, I refer to a form of belonging manifested through normalized actions within a local community.
- *Locality*- Willey and Philips (1958, 18) define locality the following way:

> *site to a district of uncertain dimensions; it is generally not larger than the space that might be occupied by a single community or local group. It is hardly necessary to add that such limits as are implied in this qualification have the variability found in the size and settlement patterns of local groups from one sort of society to another. In strictly archaeological terms, the locality is a geographical space small enough to permit the working assumption of complete cultural homogeneity at any given time. This is not to say that two or more discrete archaeological units might not, under special conditions, simultaneously occupy the same locality, or*

I will be using this definition with the following adjustment: (1) a locality extends as far as its inhabitants travel on a regular basis through the landscape. It therefore overlaps with the concept of *taskscape* suggested by Ingold (1993). This means a locality is not only land-based but can include part of the maritime and riverine system if used for subsistence activities for example. On land, this includes hunting grounds, travel to clay sources and unconstructed ritual spaces. (2) Appurtenance to a locality, like a community, is self-assigned and part of the local identity (where the concept of locality differs with *taskscape).* This self-assigned appurtenance will be conceived as *local identity*. The "cultural homogeneity" which is mentioned by Willey and Philips depends on the definition of culture. "Culture" as material representation of non-ethnic forms of belonging may seem homogeneous stylistically but will also show technological variation according to what community of practice produced it.

However, this stylistic homogeneity will be considered a product of a *local culture.* This term will be understood as shared culture amongst the inhabitants of a locality as a social environment they evolve in.

- *Craft*- Craft is used for all activity related to skilled material production. It can be used to qualify the skill, the final product, or the process by which raw materials are assembled and worked to create a final product. It corresponds to modern ideas of craftsmanship and artisanship. However, a craft is not necessarily organized and can be household-based for personal consumption.
- *Tradition*- In the context of this thesis, it will be applied to ceramic material. The technological tradition consists of a way to make pottery (different stages of the operational sequence or embodied gestures) which are actively maintained over several generations in a locality or region. Tradition can also refer to a stylistic tradition, generally pan-regional, which corresponds to a standard conceptualization of the final product (what a pot should look like) around which local variations are added. This standard conceptualization is maintained across time and space in undetermined ways: it is no longer observed in terms of generations, but in terms of long-standing tradition.
- *Impermeability*- The definition for impermeability partially overlaps with the definition for social closure. Culturally, it is seen as the rejection of traditions foreign to a locality or region. Impermeability of a tradition, on the other hand, is the rejection of innovations within this particular standard.
- *Environment*- Environment is used in this thesis in relation to the people who inhabit it. When writing about the relationship with people and their environment, this includes the landscape but also environmental knowledge –e.g. clay sources, tide information, understanding of ecosystems and volcanic events-. The environment is therefore not seen as a fixed landscape but a fluctuating agent.
- *Pluricultural*- Pluricultural is used to qualify an individual with plural cultural identities. Multicultural is used to qualify a community that integrates individuals with different cultural identities. Similarly, plurilingual refers to one individual speaking several languages, while multilingual refers to a community whose members speak different languages.

1.3.2 The Technological Approach and its Application

As previously outlined in this introduction, the region of the Gulf of Fonseca is, archaeologically seen, a problematic area. It is certainly poorly understood. From the early stages of this research, it became evident that assemblages from different sites around the Gulf of Fonseca (which were dated to the same period), did not appear comparable. This seemed to indicate cultures and traditions that were highly localized, and relatively impermeable to outside pressure or influences. This observation, of course, did not match up with what had been previously written on the Gulf of Fonseca, which had often been presented as a boundary area or buffer-zone to the Maya world (Sampeck 2014).

I decided to focus my analysis on morphological and technological attributes in order to gain comprehension of how these three selected sites interacted amongst themselves and with sites further away. For the analysis of technological attributes, I focused on the *chaîne opératoire* approach. Instead of focusing on the whole sequence, I decided to focus on the operational steps that seemed to show the most variation across the three sites, and could be understood as carrying most interpretational value. These were surface treatment and finish as well as decoration. For the paste, I considered firing and use of specific temper that was macroscopically identifiable. The results were then presented in the forms of frequencies and statistical clusters. From the visual analysis of the assemblage, the frequencies and the clustering, I was able to draw certain implications related to local culture, potting traditions, and others aspects related to the sociality of the potting craft.

1.4 Thesis Structure and Outline

The following chapter will be giving an introduction to the state of archaeological investigations in the Gulf of Fonseca and neighboring regions. For the sites from neighboring regions, I privileged sites where I was able to identify potential similitudes in assemblages. The third chapter of this thesis will provide a detailed background on Baudez's archaeological work in the Gulf of Fonseca, and the provenience of the materials I have analyzed. It also provides an insight on the analytical work Baudez had himself produced relative to these materials. The fourth chapter will outline the theoretical approach, posing the problem of ethnicity and boundaries, discussing concepts of identity as related to craft and community, and finally discuss the social aspect of craft. Chapter 5 will expand on the concept of operational sequence and my

methodological approaches to the assemblages. Chapter 7 provides the results of the analysis, both in terms of frequencies and statistical clustering. Chapter 8 discusses the findings and will address the answers to the research questions by using the results presented in the previous chapter. First, it will introduce technological traditions site by site. Second, it will discuss inferences about communities in the Gulf of Fonseca. Finally, it will examine how relationships (or lack thereof) with areas outside of the Gulf of Fonseca were shaped, as manifested in the ceramic material. In the final chapter, I will summarize and add to the finding of the thesis in an attempt to recreate how the Gulf of Fonseca may have been culturally organized.

2 Archaeological Investigations in the Gulf of Fonseca and the Surrounding Regions

2.1 Introduction

The region of the Gulf of Fonseca has been equally under-investigated in the three countries that it is part of: El Salvador, Honduras and Nicaragua. In El Salvador, information on archaeological investigations mainly originates from field reports issued by CONCULTURA (Consejo Nacional para la Cultura y el Arte), which are difficult to access. In Honduras, since Claude Baudez's project in 1964-65, no widely accessible archaeological investigations have been published for the provinces of Valle and Choluteca, except for a short published survey of the Porterillos site (Cruz Castillo 2009). In Nicaragua, the Proyecto Arqueológico Chinandega is the first published archaeological project concerned with the region surrounding the Gulf. Generally speaking, archaeology in the Gulf has been largely overshadowed by the archaeology of Maya sites in El Salvador and Honduras, and by archaeological investigations around its two lakes (Lake Managua and Lake Nicaragua) and the Central Pacific coast in Nicaragua.

This chapter will initially present contemporary investigations into the Gulf of Fonseca before offering an overview of ceramics sequences from El Salvador, Honduras and Nicaragua, which will be used to build a comparative analysis of the materials in each of these locations. Ceramics from excavations around the Gulf will generally not be included in the comparative analysis, as these are not sufficiently presented nor illustrated in the published material.

For the purpose of this comparative literature review, only sites for which dates and materials are comparable to the sites studied by Claude Baudez in the Honduran departments of Choluteca and Valle will be taken into consideration.

While the sites in El Salvador presented below continue to make use of the periods associated with the Mesoamerican culture area, some other site chronologies are synonymous with their ceramic sequences phases. The phases/periods that are of main interest for this research are the Early and Late Classic in Mesoamerican chronology, the Chismuyo, San Lorenzo, Fonseca and Amapala Phases in the Gulf of Fonseca chronology, the Shila I and II as well as the Lepa phase in Quelepa, Lo de Vaca II and III and Las Vegas in the Comayagua Valley and the Bagaces and Sapóa periods in the Greater Nicoya chronology (tab. 1). Roughly, the time period covered by the three case study sites is AD 350-1200.

Table 1- Equivalences in Ceramic Sequences (based on Andrews 1976; Baudez 1870; Henderson and Beaudry-Corbett 1993; Steinbrenner 2010).

Maya World	Quelepa	Comayagua Valley	Choluteca	Pacific Nicaragua	Dates
Late Post-Classic			Malalaca	Ometepe	1500
					1400
				Sapoa	1300
					1200
Early Post-Classic	Lepa	Las Vegas	Amapala		1100
					1000
Terminal Classic		Tenampua	Fonseca		900
Late Classic					800
		Comayagua	San Lorenzo	Bagaces	700
	Shila II				600
		Maradiaga			500
Early Classic	Shila I		Chismuyo		400
					300
Late Pre-Classic	Uapala	Miravalle		Tempisque	200
					100
					0
					100
					200

All of the boundaries between these periods are arbitrary, with evolution between them certainly having occurred gradually. This table of equivalence effectively demonstrates the impact of Mesoamerican studies over the way chronology in Central America has been conceived, as the artificial separation of periods all appear around the same date. These divisions can seldom be observed as such in the archaeological record, and can never be dated this narrowly.

It is however argued in relational realist theory that "[…] chronologies exist so that we can make effective descriptions of changing communities, worlds, and ultimately understand how reality has unfolded in a very specific way" (Fowler 2013, 4)

Additionally these chronologies do appear in all literature similarly offering comparative analysis. This literature will be used throughout this thesis to assign comparative material to timeframes in its respective region. This reference will also be of value to argue the fluidity between time periods in the Gulf of Fonseca, and the need for building site-based chronologies instead of region-wide sequences.

2.2 Investigating the Gulf of Fonseca

2.2.1 Early Accounts

The Spanish first crossed the Gulf of Fonseca in 1522 as part of an expedition lead by Gil González Dávila and Andrés Niño departing from Panama and stopping in the Gulf of Nicoya, Costa Rica, from which Andrés Niño pursued his travels north with two ships towards the Gulf of Tehuantepec, Mexico (Stone 1957). He disembarked on several islands in the Gulf of Fonseca and identified (and named) the largest bays (Escalante Arce 2006, 7). In his *Relación breve y verdadera*, Ciudad Real describes his return voyage from Granada, Nicaragua, and his stop in 1586 on the island of Conchagüita and later in Amapala (in present day El Salvador). He describes Amapala as an Indigenous harbor in the Gulf, from which canoes and small boats would leave towards the Nicaraguan side of the Gulf, further continuing their voyage in the Estero Real and Estero del Viejo (idem, 8). Ciudad Real describes how, at the time of writing in 1586, the insular population in the Gulf was limited to the islands of Conchagüita and Meanguera, with other settlements having been transferred to the mainland and others having died out (idem, 9).

The main colonial source regarding the Gulf of Fonseca region is Fernández de Oviedo y Valdés whose writings (1855, 1859), have often served as the main source on the region's ethnohistory. Oviedo visited Nicaragua between 1526 and 1530, where he described the existing indigenous cultures before the Spanish had spread, notably staying in indigenous villages and talking with the cacique in Tezoatega (Brown et al. 2013, 14). The settlement of El Viejo takes a central position in his description. He discusses two main ethnic groups in the region of Chinandega: the Nicaraos and Maribios. While his writings describe ceremonies, architectural features and urban organization, along with some aspects of material culture in the village of Tezoatega, his account barely mentions the rest of the region of Chinandega.

Padre Alonso Ponce's visit to Chinandega in 1586 resulted in a description of the ethnic distribution within the region (Ciudad Real 1873) and on spoken languages (Brown et al. 2013,15). Padre Alonso Ponce travelled from Choluteca to Nicaragua, and while his route is uncertain, he describes passing a settlement on his way where Ulúa was spoken, probably around the modern town of Somotillo, close to the Honduran border (Brown et al. 2013, 17). In taxation documents of 1581 (Werner 2000, 192-193), the Chontales villages are mentioned. There are therefore accounts of three different language groups coexisting in the Nicaraguan part of the Gulf of Fonseca during the colonial era: Maribio speakers, Ulúa (Lenca) speakers and Nahuatl speakers. Moreover, Ciudad Real (1873,

355) also mentions significant differences in attire between the indigenous peoples of these individual linguistic communities. These accounts of linguistic groups differ widely from what is mentioned on the Honduran side of the Gulf in the modern region of Choluteca, where Mangue/Chorotega and Lenca were supposedly widespread, whereas in El Salvador, Lenca and Cacaopera/Matagalpa were mainly spoken in the Gulf region (Amador et al. 2007).

Beside appurtenance, taxation records (Werner 2000, 192-193) also inform of local subsistence and production: in fact, the taxes were to be paid in fowls, corn and in salt. There is also mention of agriculture, and growing of plantain, pineapple, tobacco, sweet potato and yam bean. The documents further mention the observation of salt-making via the *sal cocido* method on the coast of the Gulf: a letter from Lara de Cordoba also reveals the importance of salt production around the area of the Gulf, compared to the lake region in Nicaragua, and describes in further detail its production through the cooking and evaporation of salt water, particularly from estuaries or lagoons. Maps from the 18th century attest to the presence of salt production all around the Gulf of Fonseca (Bellin 1764), production that continued well into the 20th century (Baudez 1973).

2.2.2 Early Archaeological Interest

In 1853, Ephraim G. Squier visited the Gulf of Fonseca region. His account is the first account mentioning the archaeological potential of the Gulf of Fonseca. He mentions how the islands of the Gulf and the coasts used to be densely populated by indigenous peoples during colonial times, but that they had to retreat further inland as a result of blossoming piracy (Squier 1854). Squier equally noted that the ecological richness of the Gulf would have had attracted both peoples and trade in precolonial times. The next report mentioning precolonial occupation of the Gulf region is from the Honduran researcher Pedro Rivas (1933), which notes the abundance of archaeological remains on the Island of Zacate Grande, including ceramic objects, stone figurines and architecture (Rivas 1933 in Erquicia 2006).

Only in the 20th century did the fascination for archaeology grow in Central America, when efforts began to be made to catalogue archaeological sites. In El Salvador, Jorge Lardé published a preliminary register of sites (Lardé y Larín 1975). Samuel K. Lothrop also mentions archaeological sites from his visit to the Gulf, located on Conchagüita (Lothrop 1926). Finally, the report of archaeologist John M. Longyear III (1944) provides a more exhaustive list of eastern Salvadoran sites, some of which are located on the islands

of the Gulf. As for Honduras, the only attention paid to this region of the Gulf prior to Claude Baudez's work is a mention of surface finds in Doris Stone's *Archaeology of Central and Southern Honduras* (1957) which lacked in-detail description of materials site location and methods by which these sites could potentially be dated. That being said, two of the sites Stone mentions by name associated to historical records (Ponce 1872) are worth noting: La Ola and Colámal. The latter Stone describes as being part of the Mesoamerican tradition with Ulúa polychromes, while the former is described as clearly following Central American tradition (Stone 1957).

As for the Nicaragua side of the Gulf, its archaeology its first mention in 20th century literature can be found in Lothrop's *Pottery of Costa Rica and Nicaragua* (1926) where two known sites in the region of Chinandega are briefly described. One of the sites presented, Tanque Cañon, had already been touched upon by Crawford (1895) thirty years prior, without having been widely published. None of these sites were excavated, and it wasn't until 1974 that Chinandega saw its first archaeological investigations (Brown et al. 2013).

2.2.3 Recent Archaeological Investigations

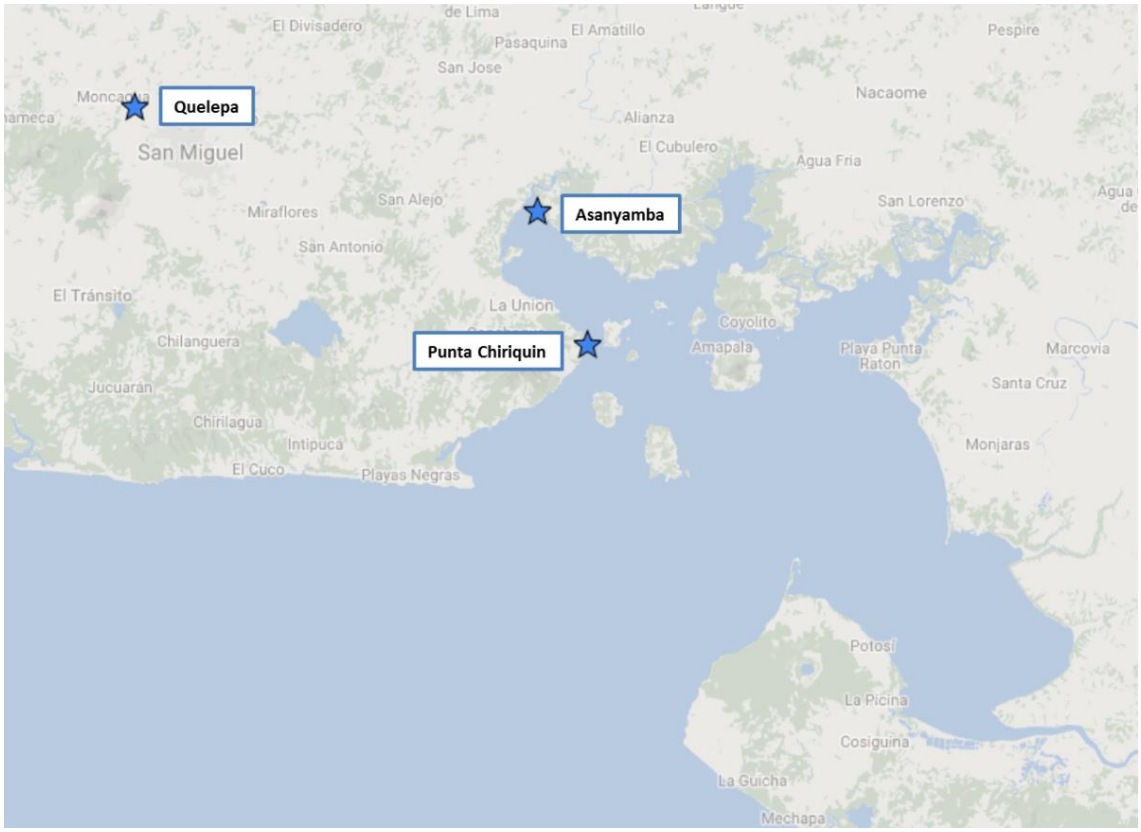


Figure 3- Location of the Sites discussed in El Salvador (map by author via Google MyMaps).

2.2.3.1 Asanyamba

Asanyamba is located in the eastern part of El Salvador, in the Gulf of Fonseca and northwest of the Bay of La Union (fig. 3). The environment of the site is characterized by salt-water inlets, marshes, and estuaries (Beaudry 1982). The area is currently known for the major salt production in its tidal flats. It was first identified and named by Stanley Boggs in 1977, however, his notes on the test pits were unfortunately lost (Valdivieso 2006, 126). The site is mainly composed of shell mounds, in which large quantities of burials and precolonial material culture can be found (idem, 119). While the site was never systematically excavated, CONCULTURA conducted several archaeological salvage operations when the middens were under threat of being destroyed due to commercial land use. As a result, there are no maps showing the extent of the site.

However, what is known is that the site is composed of more than twenty mounds up to three meters in height, some of which are organized in concentric circles (ibid.). Others mounds stand by themselves outside of any identifiable pattern (idem, 120). Some of the mounds are also constructed from basaltic rocks (ibid.).

According to the different modes of construction for the mounds found at this site –with shell used either to fill gaps in basaltic rock walls or as a principle building material in burial mounds - this site could have been used both for habitation and for burial. More information about the site is difficult to obtain, as the site has fallen victim to looters and to progressive intentional destruction of mounds. In fact, in recent times, shell mounds were destroyed to collect shells to turn into chicken food (ibid.). It is the report of such activities that motivated CONCULTURA to send archaeologists to assess the damage and to document the site (Valdivieso 2006: 126-127).

Asanyamba was from early on recognized as a salt production site (Andrews 1991), and it would seem that many pre-Hispanic *concheros* in the region were associated to a certain degree with salt production (Valdivieso 2006, 121). Shell mounds sites are widespread in El Salvador and the Gulf of Fonseca area: they are prevalent at the sites of Las Tunas and Huiscoyolate along with the islands of Zacatillo, Meanguera, Conchaguita, Perico, and in Pueblo Viejo (the Indigenous harbor of Amapala) and in several Honduran estuaries (Valdivieso 2006, 121). It would therefore seem that malacological material was a popular construction material in precolonial times in the Gulf of Fonseca, and that precolonial inhabitants of the Gulf region relied significantly on marine products - including salt.

According to the ceramic classification done by Beaudry (1982), this site can be compared to Quelepa's Late Classic Lepa Phase (corresponding to the San Lorenzo and Fonseca phases in Baudez's chronology). The artefacts collected during the original 1978-1980 period of excavation served as basis for her analysis (Beaudry 1982). In this analysis, she notes these artefacts' resemblance to the ceramics Quelepa's Lepa Phase (Andrews 1976), the ceramics of Los Llanitos (Longyear 1944) and to the Ulúa Polychromes from Los Naranjos (Baudez and Becquelin 1977). However, Beaudry did not note similarities with south-eastern Maya sites, such as Kaminaljuyu.

The main canons of the ceramic industry discussed by Beaudry (1982) are: broad line incisions with or without punctate (in five paint combinations and different paste sorting sizes); modal redundancies such as flat-based dishes with outcurving walls and conical high tetrapod supports; and round-based open bowls with basal ridges or angles and modified mammiform support (ibid., 8). Miniature vessels in the collection echo the form and decoration styles of the large ones (ibid). Additionally, redundancies are found in the motifs used to decorate painted wares, such as stylized human faces in triangular, rectangular or round shapes (ibid). Faces modelled onto slipped and unslipped jars are common, as are zoomorphic supports (ibid). The presence of the decoration modes suggests a "symbolic interest in the natural environment" (idem, 9).

2.2.3.2 Punta Chiquirín

The site of Punta Chiquirín is another one of the 24 shell-midden sites documented around the Gulf of Fonseca. It is located in the department of La Union, eastern El Salvador, in the lowlands off the coast of the Gulf of Fonseca. It was discovered in 2002 during construction on private land, when the shell middens were partially excavated, revealing burial plots and ceramic materials (Escamilla and Shibata 2006, 90). The archaeological salvage project, managed by CONCULTURA archaeologists Shione Shibata and Marlon Escamilla, aimed to document and map the construction of the shell mounds, analyze the malacological material, and date the site in the relative chronology through the analysis of ceramics (idem).

One of the excavated units revealed a secondary burial that contained poorly preserved human bone fragments associated with nine ceramic vessels organized in a semi-circular fashion, a mass of red pigment and fragments of basalt (Escamilla and Shibata 2006, 97). The excavation of the large shell mound revealed an outside stone wall delineating a rectangular space of 6 by 3 meters, incorporating the burial plot along with more than 50 ceramic vessels that were recovered (ibid.). Based on the ceramic materials found, the

site can be dated to the Late Classic period, corresponding with the Lepa Phase in Quelepa, which was corroborated by C14 dating to 520±70 A.D. (Escamilla and Shibata 2006, 98). This site was therefore probably contemporary to Asanyamba. An analysis of a sample of malacological material collected revealed that is consisted of 90% oyster shell (ibid.), which also provides insight into the heavily marine-based subsistence strategies of the past inhabitants of the Gulf of Fonseca.

A second project focusing on the *conchero* of Punta Chiquirín, a cooperation between CONCULTURA and the University of Nagoya, Japan, took place between 2006 and 2008. This project aimed to provide insight into the daily life of pre-Hispanic populations in the Gulf of Fonseca. The initial survey revealed eleven concentrations of shell and archaeological material (Ito et al. 2011, 23).

The archaeological assemblage of the site is composed of ceramic vessels and objects, shell objects, obsidian and diverse lithic material. The excavation of Trenches 1 and 2 revealed 5,258 sherds (Ito et al. 2011, 29). The ceramic sherds show the following surface treatment: red, brown, orange or white slip, and no slip. Ceramics without slip and with orange slip have red painted geometric motifs. The stratigraphy from the trenches reveals a continuous occupation of that part of the site, starting in the Late Classic and continuing into the early Postclassic. The diagnostic pottery for the early Postclassic shows signs of similarity to the Papagayo pottery of Pacific Nicaragua (Ito et al. 2011, 31). The shapes associated with the ceramic material at this site are: restricted neck jars with simple contours, unrestricted bowls with outflaring walls, restricted bowls and jars with globular walls, cylindrical unrestricted bowls and jars and unrestricted dishes (ibid.). The shapes can be associated with handles and/or supports (Ito et al. 2011, 40-57). On the basis of the ceramics, it was possible to determine three phases, all of which feature a majority of polychromes and all of which correspond to the Late Classic, Terminal Classic and early Postclassic eras. Further ceramic analysis was conducted by Michelle Toledo as part of her thesis (Toledo 2011).

2.2.3.3 Potrerillos

The site of Potrerillos is a temporary island located in canals formed by mangrove forests in the Bay of San Lorenzo, Honduras. Depending on the season and on the level of rainfall, the island can disappear entirely, submerged by rising waters (Cruz Castillo 2009). As part of the survey, ceramic evidence was collected, and a stone figurine is documented. Some of the ceramic evidence was identified as Ulúa Polychrome, while a

resemblance was noted between the figurine and the idols of Zapatera Island in Nicaragua (Cruz Castillo 2009, 58).

The archaeological site consists of an area of about 80m^2, signaled by the presence of shell middens. As with many sites around the Gulf of Fonseca, it is thought that the precolonial inhabitants found sustenance mainly from mollusks and other sea products. Moreover, the shells are interpreted as building materials for architecture (Cruz Castillo 2009, 59), similar to the Salvadoran *concheros*. Associated with the malacological material, obsidian prismatic blades were also documented. These blades would have most likely been used for the collection and consumption of marine resources (Cruz Castillo 2009, 59). Furthermore, *metates* and quartz graters were documented, as well as many fragments of small volcanic rock sculptures. Further exploration of the site revealed a rectangular structure with cobblestone walls, containing more malacological, ceramic and lithic material (Cruz Castillo 2009, 61).

Ceramic material from surface collections was identified as mostly monochrome or unpainted and unslipped vessels, associated with shapes such as simple restricted globular jars with handles. Other shapes were identified as being typically associated with salt producing sites, as described by Baudez on Güegüensi Island (Baudez 1973). A bichrome type was interpreted as a local variation on Managua Polychrome, and led to the relative dating of the site to the Late Postclassic, or Malalaca phase (Cruz Castillo 2009, 62).

2.2.3.4 Chinandega

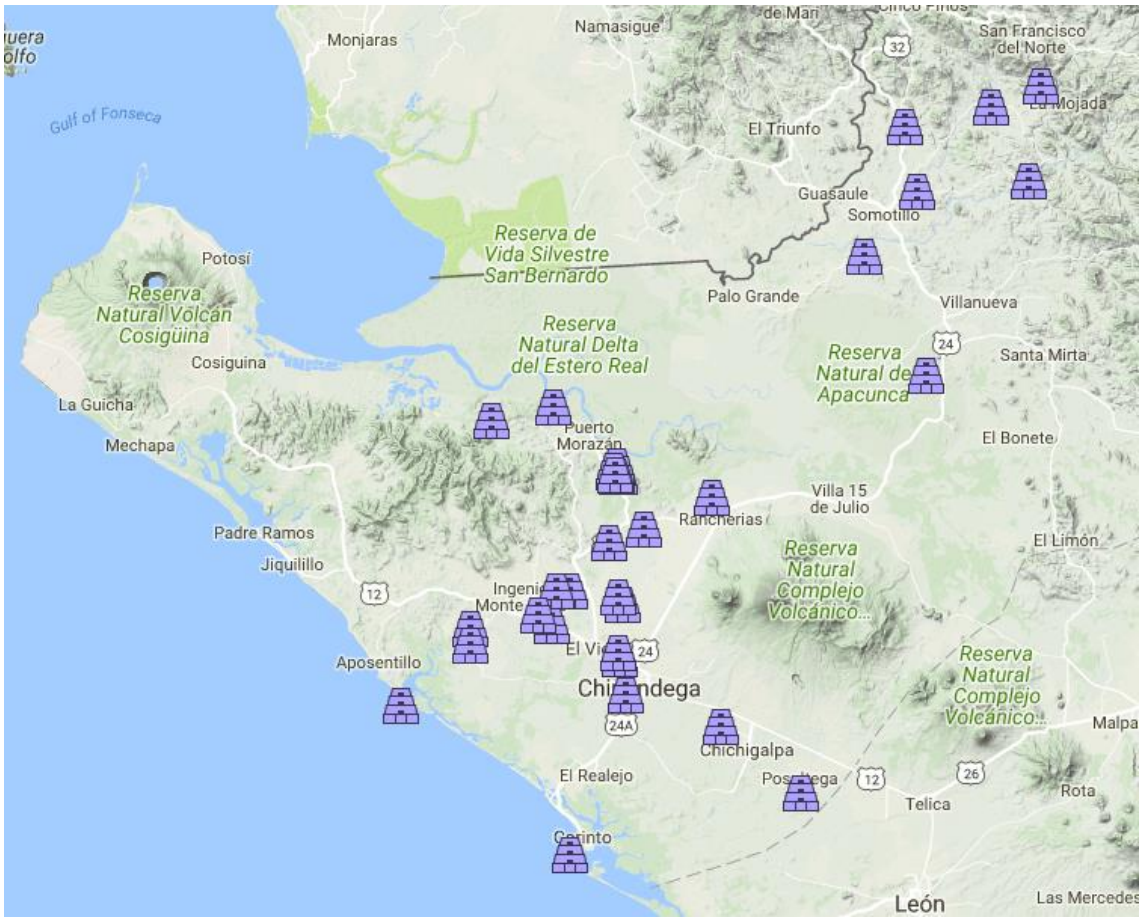


Figure 4- Sites documented by Brown during the 2012-2013 field season of the PADC (map by author via Google MyMaps, based on Brown 2013).

Since 2009, Clifford Brown has been conducting a project in the Nicaraguan department of Chinandega, bordering the Gulf of Fonseca. The three main objectives of the project are: to document previously undocumented sites, to understand the ceramic sequence in its macroregional context, and (where possible) to describe settlement patterns (fig. 4). As part of the framework of this project, surface collecting was performed and test pits were placed at certain sites (Brown 2013). In 2009, 14 sites were identified, three of which were subjected to further testing (Brown 2013). Between 2009 and 2013, eight further sites were documented, and in 2013, 18 further sites were added to the list (ibid.). Four sites were subjected to further study: Cosmapa Oriental, Dulce Nombre de Jesús, Santa Teresa 2, and La Trinidad.

After the analysis of the ceramics both alone and in comparison to those pertaining to the surrounding regions, it was possible to approximately date most of the material to the Middle and Late Classic (Brown 2013, 162). A regional chronology for the Chinandega region was set up, mainly represented by two phases: the Agateyte Period (A.D. 200-600) and the Chonco Period (A.D. 600-900). Brown notes that the assemblage shows strong

ties to Salvadoran (Andrews 1986) and Honduran (Baudez and Becquelin 1976; Hirth et al. 1989) potting traditions, as well as with the Segovias region of northern Nicaragua (Espinoza et al. 1996). However, he also contends that his assemblage is 99% different from the Pacific Nicaraguan tradition (Brown et al. 2013, 161).

The Ageyte Priod includes the following: monochrome types, incised or punctuated types, zone bichromes and negative painting techniques (Brown et al. 2013, 162). Vessels from the types Platanal utilitario, Morales utlitario, Aquespalapa punzonado, Tonalá atoya and Guarumo rojo sobre naranja show one or more of these attributes. The Chonco period comprises bichromes-on-natural types. It is possible to observe, for this period, a progressive disappearance of monochrome ceramics and plastic decorations, as well as an increase in trichrome and polychrome ceramics, and a rise in popularity of a grooving decoration technique (Brown et al. 2013, 162). The orange slipping tradition continues during this period, with a diverse repertoire of motifs painted on top of it (ibid.). Some examples of these types include: Tonalá red banded, Cayanlipe Ceramic (in its combed, incised, and appliqué version). Most recently, this initial chronology was substituted with a revised version, better linked to chronologies from the surrounding regions.

Finally, observation of the materials from the Chinandega Archaeological Project allowed me to assess the resemblance of Baudez's assemblage to the Nicaraguan one. Surprisingly, few types overlapped, which is notable considering the geographical proximity to Baudez's sites. However, Baudez does note the presence of utilitarian type Estrella Ondulé at the site of Morales. Polychromes at his Late Classic sites are present in weaker frequencies than on the Honduran side of the Gulf, generally bearing a greater resemblance to Salvadoran polychromes rather that Pacific Nicaraguan types.

2.2.3.5 Further Projects

In 2008, a petroglyph survey project was conducted by Alejandro Figueroa, who documented a heavy presence of petroglyphs along the Río Grande de Choluteca (Figueroa 2018). He observed a large diversity of styles and iconographies in the petroglyphs within a very limited spatial scale. He suggests that their locations, around hilltops, caves and waterways were assigned a multi-layered meaning by local populations (ibid). He further notes "strong symbolic connections with Mesoamerican groups to the north and Lower Central American groups to the south" (ibid).

For the last two years, the area of Choluteca has also been surveyed for sites by the Universidad Autónoma de Tegucigalpa as a training program for their archaeology students under the name of Proyecto Arqueológico El Paraíso y Choluteca (PAPCH). Additionally, material has been collected on the surface. This material has been analysed and pre-classified, however, as of yet, remains unpublished (Morales 2018) besides a report to the IHAH.

2.3 Comparative Ceramic Sequences

The ties that had been identified by Baudez in his preliminary study of the sequence (1967) were to Quelepa, the Comayagua Valley and Pacific Nicaragua. Relevant parts of the ceramic sequences of these areas will be presented in this section.

As for comparisons to other sites, very few types are present with significant frequency at the sites described by Baudez in Choluteca: Usulután from the Usulután Valley, Uluá Polychrome in its diverse classes from the Honduran regions as well as other polychrome types such as Copador. Segovias paste ceramics originating in the Segovias mountains may be related to some extent to some types present at Baudez's sites. As Usulután, Segovias paste is more typical for Late Preclassic/Early Classic. It is however still sporadically present in Baudez's assemblages associated in the Chismuyo and San Lorenzo Phases. While there are certainly interesting comparisons to be drawn concerning utilitarian ceramics in this region with the rest of Honduras, this ceramic is unfortunately not documented well enough in terms of paste and appearance (Henderson and Beaudry-Corbett 1993) to be recognizable in the assemblage.

2.3.1 Quelepa

Quelepa, in El Salvador, is one of the sites Claude Baudez originally sought comparison to after his ceramic collection in the Gulf of Fonseca (Baudez, unpublished manuscript). He found, in agreement with Andrews, that there were only few similarities between the ceramic assemblages from both regions, even though Quelepa is only about 100km from the closest site documented by Baudez (ibid).

Andrews' dissertation on Quelepa analyses the ceramic he collected from his excavations at the site (Andrews 1971, 17-85). He defines four ceramic complexes: Uapala (500B.C.-A.D. 100-200), Shila I and II, and the Lepa complex. Andrews (1971, 230) splits the Uapala complex into three main ceramic groups: an unslipped coarseware (29.9% of the

assemblage), the red painted version of this ware (9.2% of the assemblage) and Usulután resist decorated pottery (59.9% of the assemblage). The plastic decoration techniques are, in the two first groups: simple coarse incision (hatched, crosshatched, parallel vertical lines); impressed appliqué fillets (digital or tubular impressions); simple punctuation; and incised zoned punctuation, appliqué anthropomorphic or zoomorphic features (Andrews 1971, 230). Red paint is only applied to certain areas of the vessel: rims, handles or shoulders of jars, or in zoned painting. In the second group, Izalco Usulután is hard, fine and thin, and highly burnished with resist decoration. Wide everted rims can be decorated with grooving and can bear flanges. Most bowls are quadripods with nubbin supports. Izalco has coarse, coarse incised, modelled, impressed fillet and red painted varieties (ibid., 232).

The Shila I and II ceramic complex can be dated to between A.D. 100/200-650/700, corresponding to an overlap between the Preclassic and Early Classic eras in Maya chronology. This period is the one weakest represented at Quelepa, and the complex is defined as a "transitional one" (ibid., 236) as it shares Usulután with the Uapala phase and a red painted unslipped group with the Lepa Phase. Andrews (1971) divided the ceramics from this complex into two wares and three groups with the first two groups more represented than the third. The first ware is divided into two groups: the unslipped and roughly smoothed group (27.3%), and the red painted group with similar pastes and surface finishes (4.4%) (ibid. , 236). The second is the continuation of the Usulután group (62.2%) which has a friable brown to pinkish paste and a heavy pumice temper (ibid., 236). Resist lines disappear as a decoration mode, and alternate with blotchy orange traces on the surface. Usulután appears in a double slipped variant and a red-painted variant in this complex (4.5%). Plastic decorations are, in the two first groups, similar to the ones observed in the previous complex, but appear with less frequency. The only abandoned plastic decoration is the punctuation, except on rims from one single type (ibid., 237). Andrews (1971) combines the Shila II complex with his Lepa complex and dates the ensemble to A.D. 550-950.

A large variety of trade materials are available for this phase. The beginning of this phase is marked by the appearance of a higher diversity in polychrome pottery, the disappearance of Usulután resist, and the replacement of plastic decoration with elaborated painting methods. Andrews (1971, 244) splits the material into four main groups for this phase: a plain group (38.1% of the assemblage), a red group (9.2%), the spiked *incensarios* which is coarser than the plain group (5.3%), and Quelepa polychomes

and its bichrome and monochrome variations in fine paste ceramic (39.6%) (Andrews 1971, 243). Plastic decorations in this phase are mostly limited to the plain and red groups: modeling, zoomorphic or anthropomorphic effigy features, appliqué fillets (finger impressed), broad curvilinear incisions and a few punctuated, reed-impressed or fine incised decorations can be documented (ibid. 1971, 245). Quelepa polychromes are identifiable by white slipping combined with an orange wash and red or black paint. Delirio Red-on-white is the most popular fine pasted bichrome for this time period.

2.3.2 Comayagua Valley

In Honduras, it is difficult to find sites containing material comparable to those in the Gulf of Fonseca. In fact, the closest extensively excavated and documented area is the Valley of Comayagua, located more than 100km from the closest site (fig. 5). However, this comparison had already been drawn by Doris Stone (1957) and Claude Baudez (1966), who extended his stay in Honduras to look for a comparative ceramic sequence for the Gulf materials in the Valley of Comayagua, at the site of Lo de Vaca.

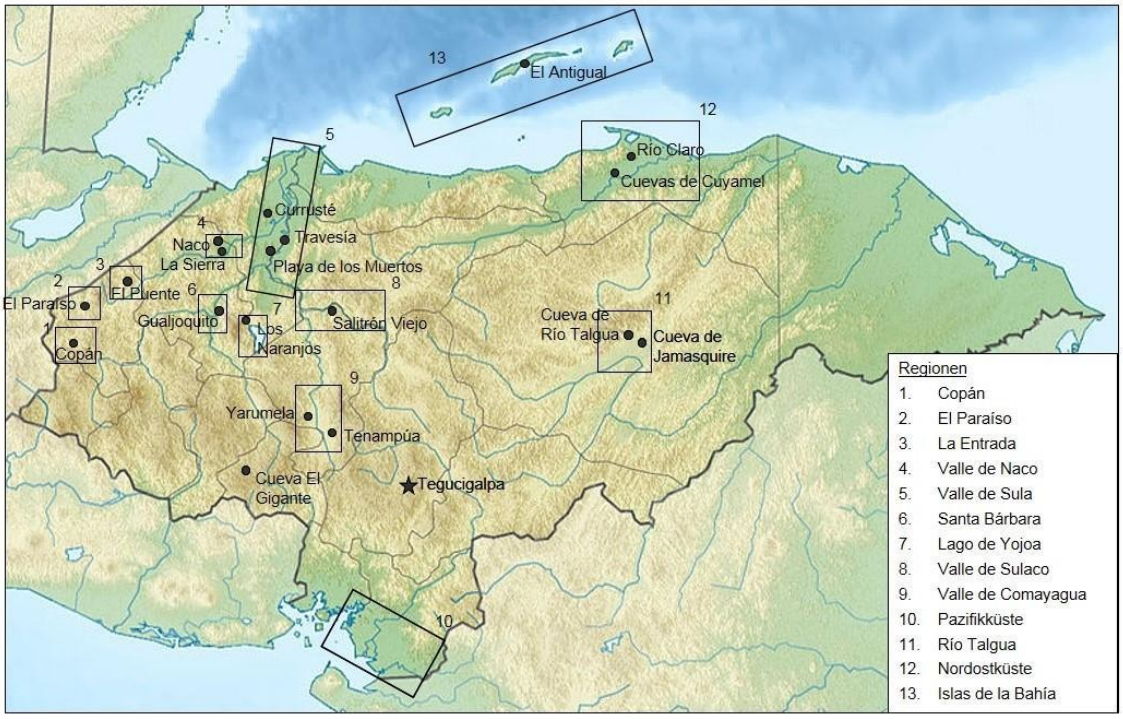


Figure 5- Published Archaeological Investigations in Honduras (Fecher 2013, 22).

His visit, combined with additional data available at the time for the site, resulted in an updated ceramic sequence for the region. The main types, between which Baudez identified a strong similarity, are the types related to (in chronological order) Usulután, Ulúa Polychrome and Las Vegas Polychrome. Joyce (2016) groups the Comayagua Valley

with the Lower Ulúa Valley, as well as with the Lake Yojoa region as main the main production area for Ulúa Polychrome. The Comayagua Valley also has long been considered to be the point of origin for Las Vegas polychrome, a diagnostic type of white slipped, which possibly originated from the Ulúa tradition (Joyce 2017, 2).

Baudez notes a significant diversity among the ceramics of the same phase at Lo de Vaca (Baudez 1966). Accordingly, he separates them into three complexes: Lo de Vaca I, Lo de Vaca II and Lo de Vaca III (ibid.). Lo de Vaca I, corresponding to the deeper levels, has a weak presence of decorated sherds (ibid.). The diagnostic traits that can be used as discriminatory to categorize the decorated sherds are: "pattern burnishing" as surface treatment; phalange appliqué with tubular impression as decoration; hematite slipping; bright red slipping or white slipping as further surface treatment; red-on-natural painting (as non-plastic decoration); and zoned incising as plastic decoration (Baudez 1966, 305).

Lo de Vaca II, the subsequent level in the stratigraphy, exhibits a stronger percentage of decorations. Utilitarian ceramics are often red slipped, while bichrome ceramic remains sparse, limited to painting in bands on natural and black-on-red. The plastic decorations in this level are: zoned slash incising on the neck of restricted neck jars; shallow incision on a burnished surface; grooving (a variation of the previous decoration); zoned plain rocker stamping on a smoothed surface; shell impressions frieze, zoned punctuating; zoned scraping/raking; and incised appliqué phalanges (Baudez 1966, 306). Additional decorations are: zoned bichrome (red on buff, incised) and zoned trichrome (black and red zoning on natural). This level also presented abundant Usulután resist. Moreover, a highly polished, undecorated ware also appears in high frequency, with the bowl and open dishes incised at the bottom (ibid.). Finally, undecorated ceramics with no surface treatment remain the most frequently found artefact at this level (Baudez 1966, 305-311).

Lo de Vaca III is characterized by the pronounced introduction of polychrome pottery, with a change in the highest frequencies shifting from undecorated untreated ceramics in the lower levels to polychrome pottery in this level (Baudez 1966, 312), with plummeting numbers of plastic decorations. The material in this layer was heavily eroded, prohibiting an assessment of the diversity of the polychrome decorations present. Nonetheless, it was possible to assess that this material as related to the Ulúa tradition, mainly to the Santa Rita class. Incisions sporadically separate the painted panels or zones, or constitute hatched or crosshatched zones. Another popular decoration is perforation,

corresponding to colander shapes. The utilitarian red slipped ware differs from the one in the previous complexes by its associated shapes and paste. The undecorated, untreated ceramics remain similar to the ones in the previous layers. Judging by the ceramic sequence, Baudez dated Lo de Vaca I to the Preclassic, Lo de Vaca II to the Early Classic, and Lo de Vaca III to the Late Classic eras (Baudez 1966, 315).

The diagnostic pottery at this site is the white slipped pottery, today defined as Las Vegas Polychrome (Joyce 2017). This was associated with Tohil Plumbate sherds, which led Baudez to date the site to the Early Postclassic era. Revisiting this site and dates, Joyce (2015, 15) suggests the dates for the production of Las Vegas Polychrome to be AD 850-1100. Joyce also argues that Las Vegas would have been the primary production center for Las Vegas Polychrome (Joyce 2017, 14).

2.3.3 Pacific Nicaragua

The archaeology of Pacific Nicaragua is certainly the most developed in the region and is one of the regions still undergoing various excavations. Of relevance to this thesis is information relating to the updating of the ceramic sequence (Dennett 2016; Steinbrenner 2010), as the white slipped ceramic industry in Pacific Nicaragua will be central to understanding the white slipped polychrome industry of the Gulf of Fonseca.

The C14 dates obtained for the Santa Isabel site questions the regional chronology, especially for the types generally attributed to the Ometepe Period: Vallejo Polychrome, Madeira Polychrome, El Menco Polychrome and Castillo Engraved. In fact, the layers dated associated with this material point towards a Late Sapoá appearance of these types (Steinbrenner 2010, 67). Along with the white slipped types, the most frequent types at this site are: Rivas Red (red slipped and striated), Sacasa Striated, Castillo Engraved, Granada Polychrome, Murillo appliqué, Castillo Monochrome, and Tolemaida Fine Black (see Steinbrenner 2010, appendix A).

The sites of El Rayo, Tepetate, Santa Isabel and La Arenera further proved useful for understanding precolonial large-scale ceramic economies (Dennett 2016). The stratigraphy at Ayala reveals a great diversity in types: in addition to the standard types for the Bagaces period, it reveals several unidentified local types and trades wares such as Delirio, Uluá and Tenampua Polychromes (Dennett 2016, 115). The main ceramic components for the El Rayo site are white slipped polychromes (Papagayo, Las Vegas, Pataky and Vallejo), Granada Redwares, and red-rimmed/slipped utilitarian wares.

2.4 Conclusion: Current Thinking on the Gulf of Fonseca and Surrounding Regions

The models applied to archaeological evidence in Central America have started to evolve away from the cultural-historical approach, as scholars develop new perspectives and considerations in which to situate their research. The community of practice approach has certainly contributed to the understanding of a pan-regional economy away from diffusionist perspectives (e.g. Dennett 2016; Joyce 2017). Investigating practice has also supported continuity in cases of innovations that were originally assigned to cultural replacement or outside pressures (e.g. Steinbrenner 2010). New materialism has further contributed to the understanding of sacred landscapes and liminal spaces. Finally, reflection on what characterizes life on a boundary and frontier-spaces has shed light on the resilience of people who were long thought to be living in the shadow of the Mayan empire (e.g. Sampeck 2014). Since the 1970s, Lange has argued for this resilience of local regional culture. In fact, he contends that "local Central American peoples maintained strong indigenous traditions despite, and within the framework of, […] repeated external pressures" (Lange et al. 1976, 180). This has since become a more widely accepted idea (c.f. Dennett 2016).

More importantly, however, scholarly research is moving away of the idea of Lower Central America both as a homogeneous cultural space and as cultural area. Ibarra (in Dennett 2018) instead suggests the denomination of *pluricultural confluence space* for Greater Nicoya. Although this area is not included in her study, I would argue that this space could extend to El Salvador, and encompass the Gulf of Fonseca. Building on Ibarra's research, Dennett (2018) has also argued for the acknowledgement of multicultural societies as well as cultural, linguistic and religious pluralism to be applied to the current understanding of the past in this region. This implies that material monoculture would not have existed, either regionally or in settlements.

In conclusion, we are currently experiencing a time of change in the discipline, allowing us to acknowledge and present the Gulf of Fonseca as something different than a "buffer-zone" or purely resulting from cultural hybridity. Instead, this research opens the potential both to examine the role of technology in situating the Gulf of Fonseca into a regional context and in negotiating multicultural identities, and to study the area as a liminal space and examine its resilience to outside influences. The reflection on *pluricultural confluence space* has also permitted the starting assumption of localities that

may have developed independent cultures from each other. This will further be explored in the following chapters.

3 Baudez in Southern Honduras

3.1 Archaeological Context

3.1.1 Regional Overview

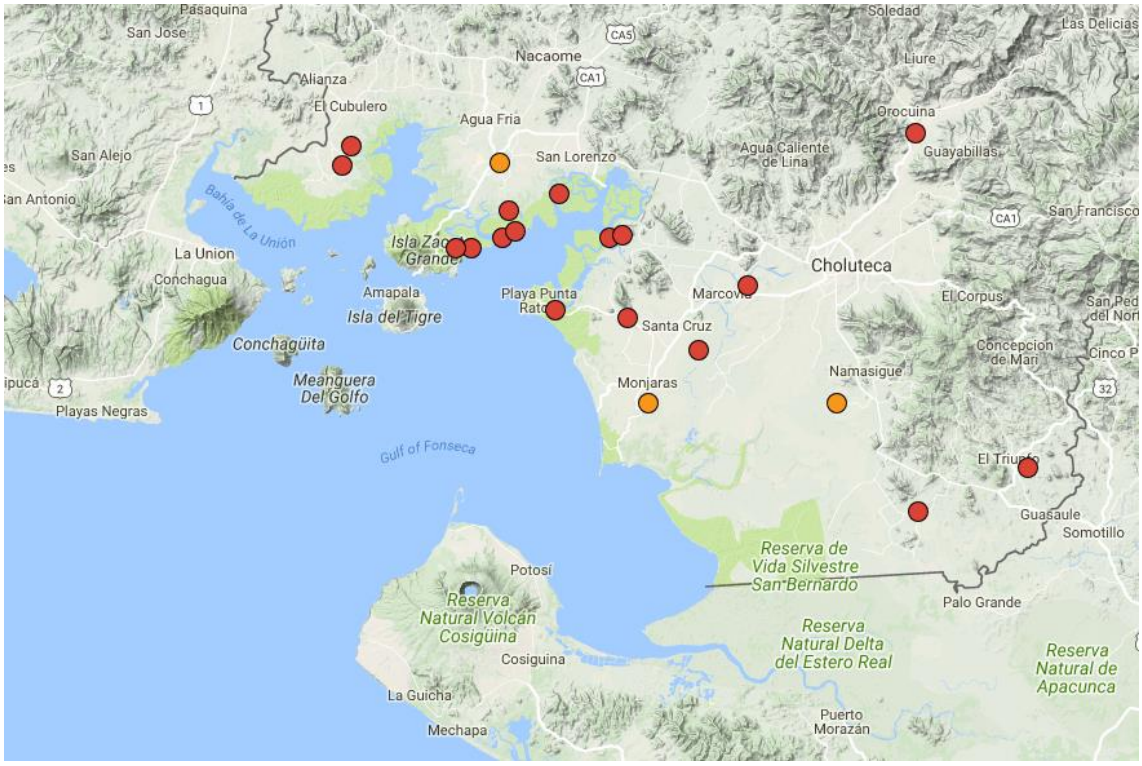


Figure 6- Sites documented by Claude Baudez during his 1964-65 field season in Southern Honduras. The orange sites are the focus of this thesis (map by author via Google MyMaps).

Claude Baudez initiated his work in the Honduran part of the Gulf of Fonseca in 1964, focusing on the department of Choluteca and the western part of the Valle department. He visited twenty sites of differing time periods, two of which were subjected to more detailed excavations. These two sites constitute two of this thesis's case studies, while a third site—with extensive additional material—has been added as a third case study (Baudez, 1966).

Baudez's first weeks of fieldwork were dedicated surveying the area of interest by boat, on foot, or by car, using informants. During this time, 20 sites were identified (fig. 6). Some sites of larger importance were then further documented later that year. Baudez divided the sites in two types: permanent settlements—featuring houses built using perishable materials on top of mound—and seasonal settlements associated with fishing, mollusk-collecting or salt-making (Baudez, unpublished manuscript). His research question revolved around how the Gulf of Fonseca could be considered within the south-eastern Mesoamerican frontier debate, what relationship to the neighboring Maya the inhabitants of the area maintained, and how the region's marginality could be defined.

With those questions in mind that Baudez excavated these sites and sampled the ceramics found therein. Yet, he himself noted the strong "regionalism" of the area of the Gulf of Fonseca in pre-Hispanic times. For example, he recognized the lack of resemblance of the material to what was found in Quelepa, less than 100km away (Baudez, unpublished manuscript).

Among the 20 sites recognized, two were excavated (La Danta and Monte Libano), and twelve were subjected to test pits. Four out of these fourteen sites are to be considered seasonal camps (La Pegajosa, Playa Lisa, Cogollo de Palo Seco and Cogollo del Burro). The rest of the sites are considered permanent settlements (Baudez, unpublished manuscript). As part of this introduction, I will provide a summary of the mounded permanent settlements, as the ceramic sequence in the seasonal camps do not match up with the materials of the presented case studies. All information presented below originates from Baudez's partially finished, unpublished manuscript and from his field notes on his work in the Gulf of Fonseca.

The ceramic sequence at Los Calpules dates the site to between the Chismuyo and San Lorenzo phase. This site is located 5km from the Nicaraguan border at Guasaule, next to the Guale River. It covers 300m in diameter, where twelve mounds between 0.3m and 2m height were discernible during Baudez's visit, seven of which were still identifiable during the author's visit. The mounds are about 20m in average diameter. A central plaza can be identified, measuring 180m in length and 140m in width. No distinct organization was identified in the settlement pattern (Baudez, unpublished manuscript).

La Barranca is another site dating to the same period. At this site, about one fourth of the mounds had been destroyed at the time of Baudez's visit. An area of 200m by 170m with seventeen mounds was still identifiable. The mounds are between 0.2m and 1.6m high, and 10 to 20m wide. The mounds are organized in a circular shape around a group of three higher, central mounds (Baudez, unpublished manuscript). Buena Vista is a San Lorenzo Period site, spread out on a 300m by 200m oval area, with 25 identified structures. The structures are also organized in a circular manner. In the center, two large oval mounds, 25m and 40m wide, 2.20m and 1.70m respectively, dominate the plaza (Baudez, unpublished manuscript).

La Venadona is a further site with a main San Lorenzo ceramic component. Situated within the loop of a meandering river, the site covers about 300m by 200m. There lie

thirteen mounds, between 0.2m and 2.4m, 20m wide on average (Baudez, unpublished manuscript).

The site of Las Cabezas was found by Baudez in a poorly preserved state. Yet, archaeological remains could still be identified on a surface area of 300m^2, where fifteen mounds (20m diameter on average) could still be seen at the surface. Finally, one site can be dated to the Malalaca phase.

Pasaquina, which is located on a volcanic plateau, is of little depth and shows very brief occupation and no mounds could be identified. The other sites either did not include architectural traces, or did not provide enough cultural material to be dated or linked to a particular kind of activity (Baudez, unpublished manuscript).

3.1.2 Sites

3.1.2.1 Monte Libano

Monte Libano is situated in the south part of the alluvial plain of the department of Choluteca, between a hill chain to the east, and a mangrove swamp to the west. The plain is traversed by many narrow brooks—"quebradas"—oriented towards the Gulf of Fonseca, where they feed into estuaries. The site is equidistant from the swamps and hills, both at 6-7km distance. The site may have occupied an area as large as 9ha (Baudez, unpublished manuscript). Today, the area is occupied by a melon farm, and archaeological remains are no longer identifiable on the surface. In 1964, Baudez identified 6 mounds higher than 0.5m, and 22 additional structures of less than 0.5m, all which are interpreted as rises for habitations or as trash middens. The mounds are organized in a double oval design, with a northeast-southeast orientation, and a 200m axis (Baudez, unpublished manuscript). Most of the ceramic sherds available from this site come from one mound excavated during field season. This particular mound shows three distinct phases of occupation, with the first associated with not only a burial, but also holding traces of habitation (Baudez, unpublished manuscript). This occupation was interrupted by the flooding of the plain, as witnessed by an alluvial layer, and has a hearth that can be radiocarbon dated to the Chismuyo Phase. A new elevation was artificially constructed on the top of the first occupation, showing a subsequent habitational layer. During his excavations, Baudez encountered ceramics from both Chismuyo and San Lorenzo phase in this layer. The last layer—delineated by a stone wall—was added to give the platform a rectangular shape. This layer dates to the San Lorenzo phase (Baudez, unpublished manuscript).

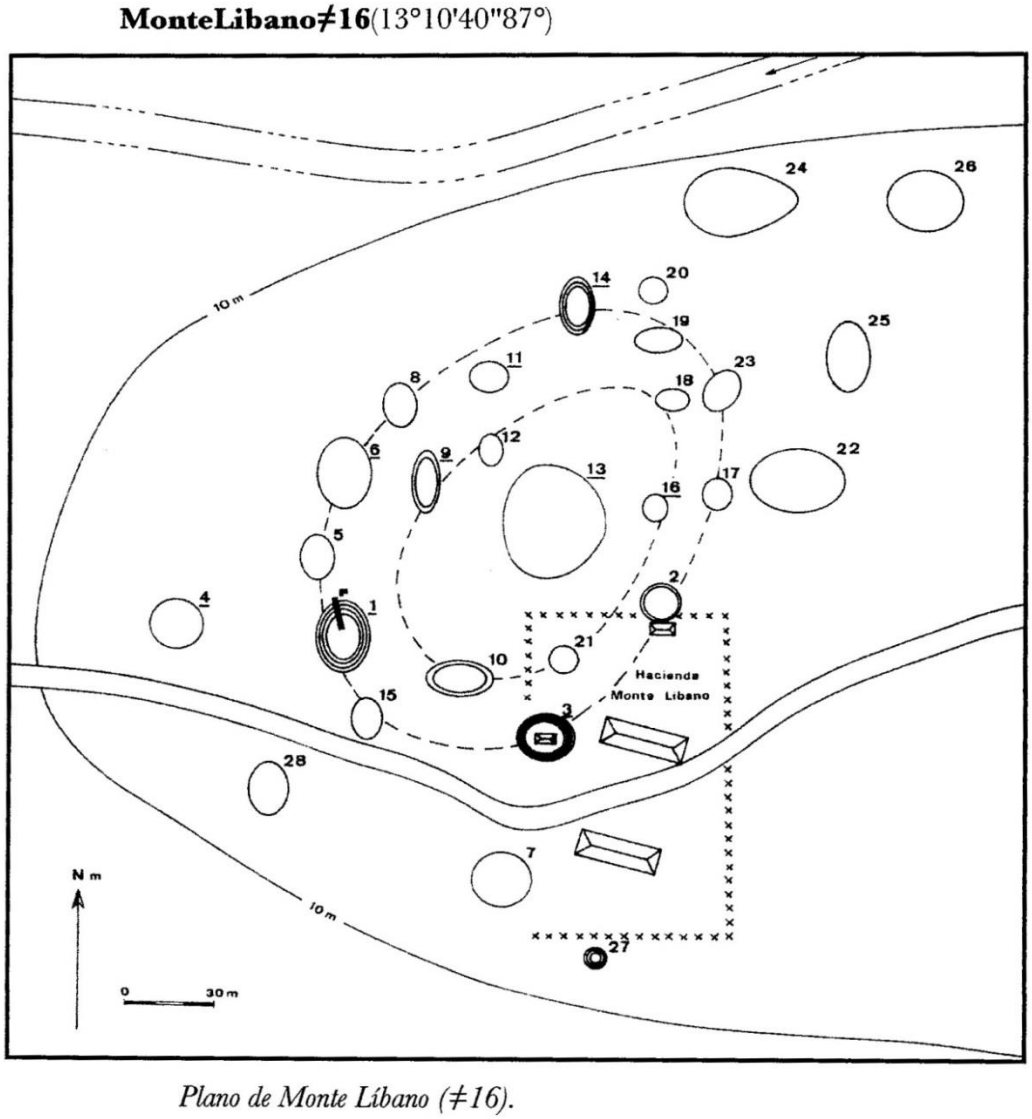


Figure 7-Map of Monte Libano. The squared area is the location of the farm as in existed in 1966. Dotted lines show the two concentric shapes of mounds. Lines delimiting the mounds indicate elevation (Baudez, unpublished manuscript)

Mound 1 is located in the southwestern part of the site (fig. 7). The structure is rectangular, with a north-west oriented axis, and measures 25m by 20m. The top of the mound—11m long and 4m wide—is 1.2m above the ground level at the site. A test pit (1.5m x 1m), dug at the top of the mound, reached a depth of 2.6m (fig. 8). The test pit (revealing stratigraphic layers corresponding to the different phases of construction of the mound), three burials, and strong changes in ceramic material indicated at least two occupations of the site. Another $1m^2$ test pit, dug north of the mound, reached sterile soil at 90cm depth. This pit was later extended by $2m^2$ on the first 0.2m in order to improve sampling (Baudez, unpublished manuscript). The results from both test pits being conclusive; a 7.8m x 1.4m trench was dug following the axis of the mound, terminating in

the first test pit. This trench was excavated in arbitrary levels of 20cm. Eight natural layers were identified in the profile of the trench, Layer 1 being the most recent (Baudez, unpublished manuscript).

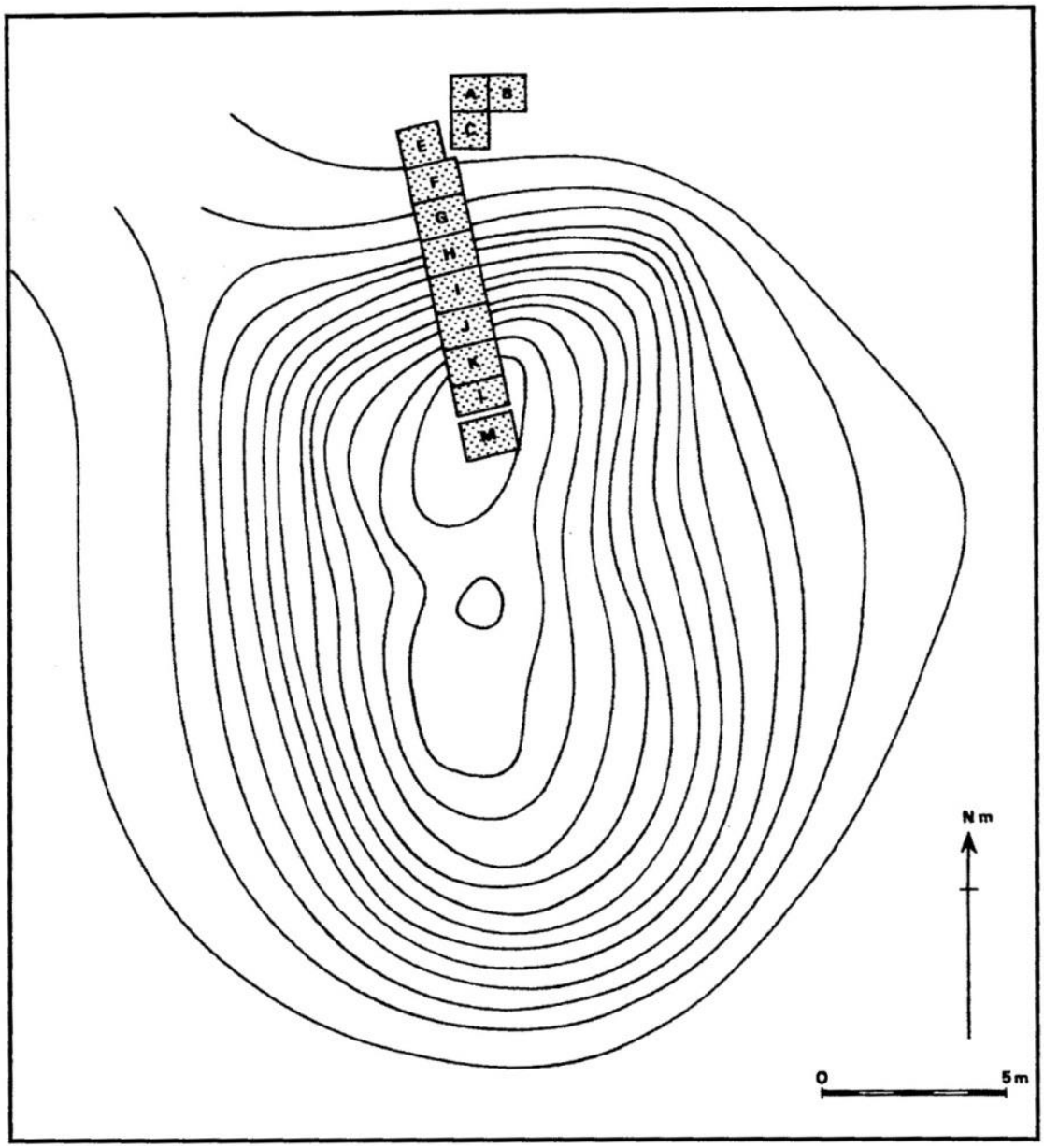


Figure 8-Excavations of Structure 1 of Monte Libano (Baudez, unpublished manuscript).

Layer 8 corresponds to the first level of occupation of the site, and is comprised of a house floor, a small refuse area, and a hearth (ibid) (fig. 9). Stratigraphy indicates contemporaneity between all three elements. All ceramics from this layer are from the Chismuyo Phase. Additional to the sherds, jade pearls and a fragment of a polished hand axe and a *mano* fragment were collected. The charcoal collected from the hearth was dated to [cal AD 387: cal AD 589] (one sigma range).

Layer 7 corresponds to the edge of an artificial platform, whose top would have been 0.6m above the first previous layer and 120cm below the surface level. This platform contained several burials: a secondary child burial in an urn associated with adult teeth, two primary burials disturbed by a third one. In the backfill of this platform, a concentration of Chismuyo sherds was found associated with a jadeite disk.

Layer 6 corresponds to a natural deposition of alluvial soil, probably corresponding to a flooding event. Layer 5 corresponds to the second level of occupation of the mound, with remains indicating occupation starting immediately after the flood. In fact, a charcoal-rich floor covered in cobblestones and ceramic fragments, with the presence of a small hearth, indicate another house floor.

Layer 4 corresponds to the backfill -a mix of clay soil and alluvium- of the second mound. The top of this second mound would have laid 0.7m above the current ground level. Sherds found in the backfill are from the Chismuyo Phase.

Layer 3 corresponds to a third level of occupation, represented by a hearth at the foot of the mound. This hearth is 30cm deep and measures 0.6m in diameter. This hearth, filled with charcoal-rich soil and with cooked walls, is associated with an important number of Chismuyo phase ceramics.

Layer 2 can be followed throughout the trench: it is the backfill of the current mound with its containment walls. Finally, Layer 1 corresponds to the last pre-Hispanic level of occupation. At the surface of the backfill, a 0.15m cobblestone floor was built. On top of this floor, a large number of sherds were found which could mainly be dated to the San Lorenzo phase. This agglomeration of sherds among with the presence of charcoal can point towards a disposal system where the waste was discarded on the side of the mound (Baudez, unpublished manuscript).

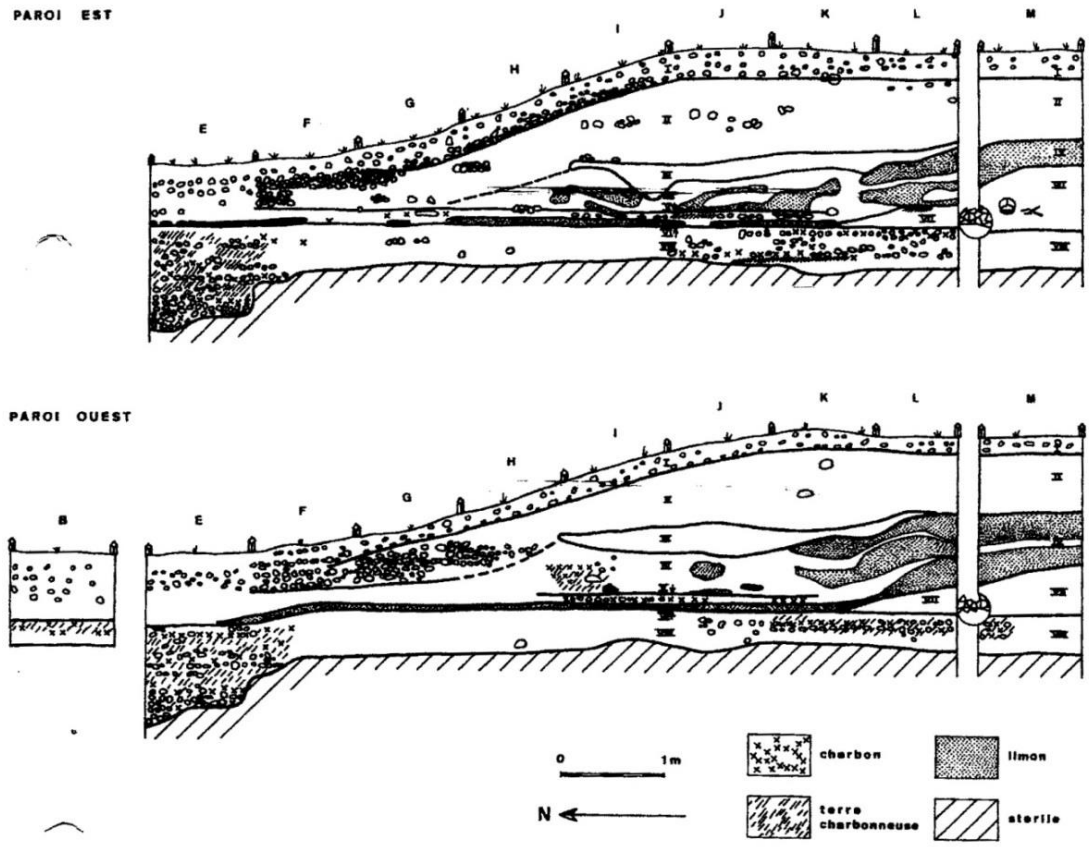


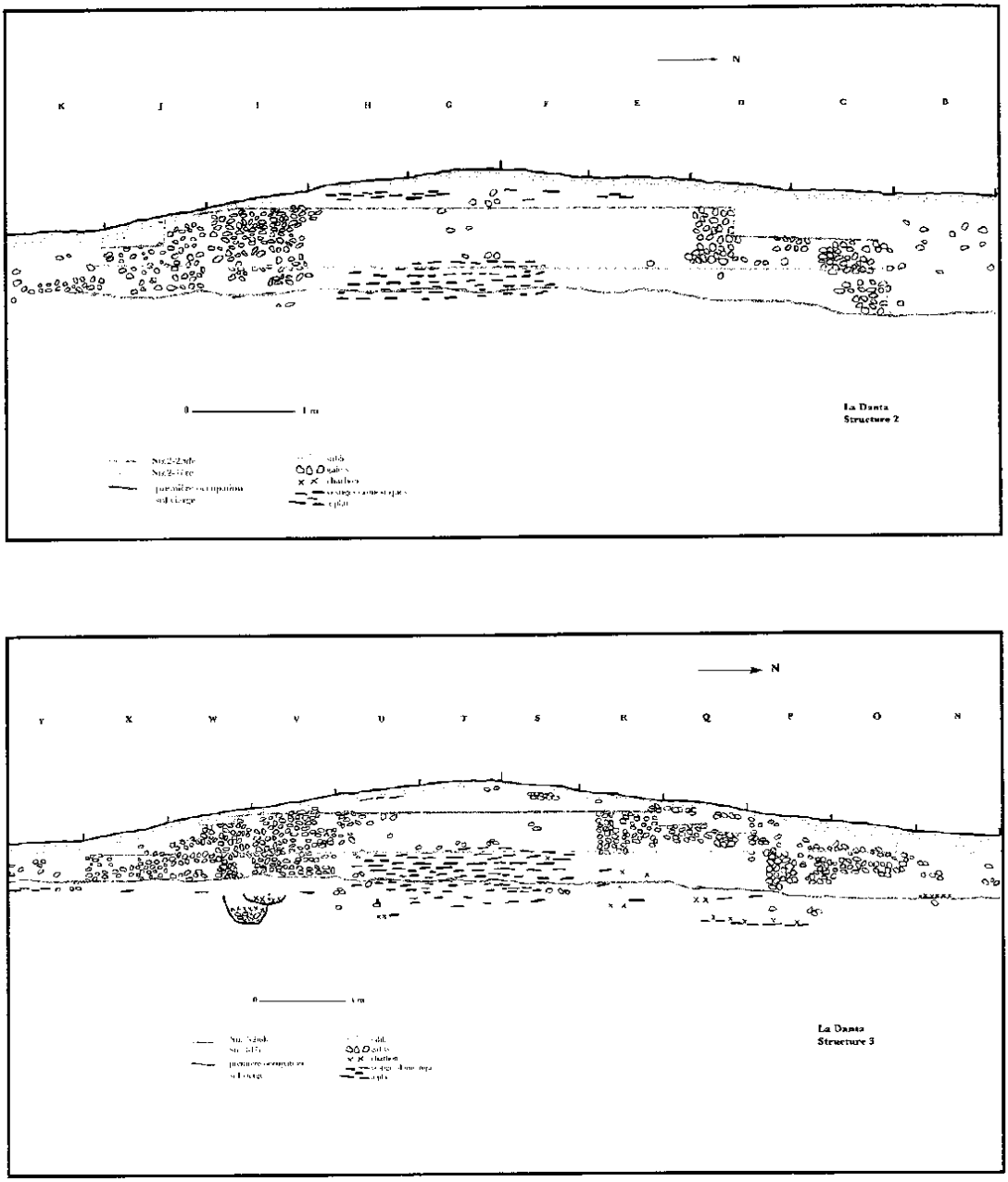
Figure 9- Monte Libano, Stratigraphy of Structure 1 (Baudez, unpublished manuscript).

3.1.2.2 La Danta

La Danta is located in the southern part of the plain of Choluteca, 6km from the coast. At the time of Baudez's visit, the plain was traversed by a tributary of the Choluteca River. This riverbed, which floods seasonally, used to be the riverbed of the Choluteca River before it was artificially diverted. Low mounds are dispersed over an area of 7ha. While the dispersion of the mounds seems random in the landscape at first glance, two groupings stand out. The first is composed of five structures: two elongated parallel platforms with three circular mounds. To the east, the second comprises two mounds of 1.2m height with an elongated platform. Other structures are arranged in pairs, while the final five are isolated (Baudez, unpublished manuscript). Baudez (unpublished manuscript) hypothesized that this site map was not as much random as incomplete, as some structures may not have been elevated or may have been destroyed by future processes. This was certainly the case for many sites in the region, where site peripheries are generally damaged and only site "cores" remain identifiable. All the ceramic material of La Danta corresponds to the Amapala Phase.

Group A is a group of structure of diverse sizes and shapes, all located in the same 400m^2 area. Structures 2 and 3 are parallel elongated platforms, 4m apart. The length of the elevations (measured at the top) is respectively 28m and 34m. The height of those platforms is below 1m, while the width at the top is around 9m. Structure 1 is a narrow oval, 4x3m mound which is attached to Structure 2. Structure 4 is a 1.2m high mound, of 25m diameter. Structure 5 is the furthest away from the concentration: 8m to the northeast of Platform 2. The structure is oval, and measures 20m in length, 15m in width and 0.8m in height (Baudez, unpublished manuscript).

Excavation 1 consisted in a north-south oriented trench through Structure 2, ending at the edge of Structure 3 (fig.10). The trench measured 1.2m by 27m long, and got divided into units of 1.20x1m. The trench was excavated in arbitrary levels of 20cm, parallel to the natural inclination of the mound. Archaeological material was collected by layers and units (Baudez, unpublished manuscript). The first layer containing cultural material corresponds to the occupation layer of the platforms, and measures less than 20cm in depth. Deeper, the trench revealed four walls made of cobblestone embedded in clay, following an east-west orientation (fig. 11). Each platform appears as having been built on a backfill maintained in place by at least two walls. As the excavation progressed, it exposed a 5m wide and 0.8m high rise under each platform. This rise was covered in shells, mammal bones, pieces of wood charcoal, obsidian pieces, and fragments of rammed earth as well as large pottery sherds. This deposition was between 40 and 50cm thick. Baudez interprets these rises as habitation floors that would have accumulated, and not as artificially made, the zones of concentrations corresponding to kitchen areas. Except for these rises, this layer is 20-40cm thick. Associated with this period are: a floor, large ceramic sherds, charcoal, laid out stones and a small hearth. At the 70cm depth mark, two further hearths, 0.6m wide, were identified. Sterile soil was met at 165cm depth from the highest point, and at 70cm at the lowest. The first settlers that inhabited this site are therefore not associated with artificial mounds (Baudez, unpublished manuscript).



La Danta: Perfiles de la Estr.2 y de la Fstr.3 en la Excavación I. Se nota la primera ocupación (piso coloreado café) arriba del suelo virgen (amarillo), seguida por la construcción de las primeras plataformas (rojo), luego de las segundas (azul).

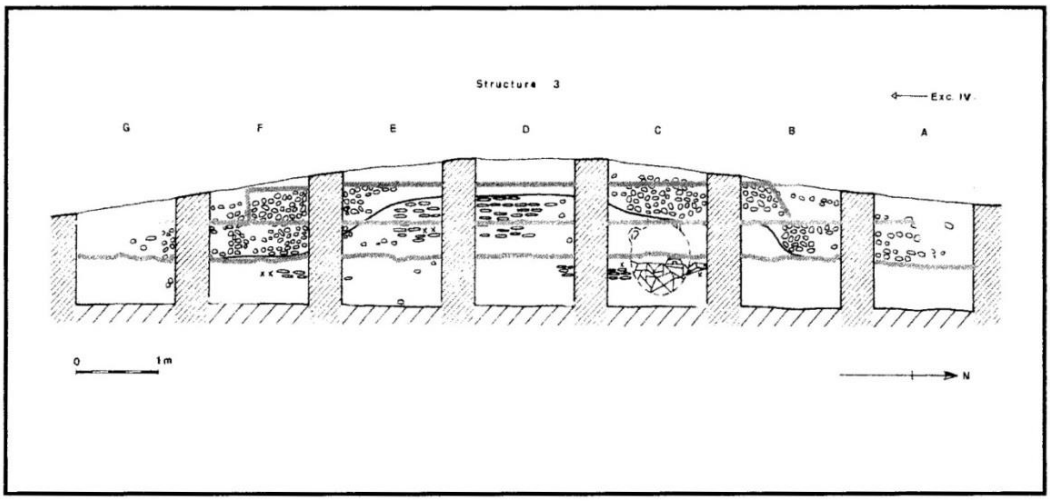
Figure 10- Profiles of Structures 2 and 3 from Excavation 1 (Baudez, unpublished manuscript).

Excavation 3 corresponds to the extension of one of the units from Excavation 1, and aimed to reveal a burial located at 145cm depth. This excavation was composed of two 1.6m by 1m units. This excavation revealed the same natural layers as Excavation 1, as well as the continuation of the wall exposed in Excavation 1. The remains of the burial were minimal, composed only of a phalange, tarsals, vertebrae, and bone splinters. The associated offering was a single pearl of jadeite. The partial destruction of the burial has been identified by Baudez as a result of a trench dug during the second level of occupation to stabilize poles, as evidenced by three postholes uncovered below the

remains. These postholes align with the edge of the rise, and probably point towards a wall having stood there during the second occupation phase (Baudez, unpublished manuscript).

Figure 11- Southern view of Structure 3 at La Danta (Baudez, unpublished manuscripts).

As Excavation 1 revealed the construction sequence of both platforms to have been similar, both being built on older house floors, Excavation 4 limited itself to Platform 3 and the data was extrapolated to Platform 2 (fig. 12). This excavation was composed of seven 1.2x1m pits, aligned north-south and separated by 0.4m, aimed to control and complement the stratigraphy uncovered in Excavation 1. In these pits, the archaeological layer corresponds to the first occupation, prior to the construction of platforms, which is here thicker than what was revealed in the trench. In the rise, two distinct floors were identified. The first corresponds to floors of rammed earth, between 110cm and 120cm below the surface, covered in kitchen waste (bones, shell and charcoal), large ceramic sherds and fragments of adobe. A large storage jar, 75cm in diameter, was found on this floor, on which a turned-over grinding stone was found. The second floor is also interpreted to be a kitchen floor, 40 to 50cm deep, starting 40cm below the surface. It is mainly composed of large rammed earth pieces, covering kitchen waste (Baudez, unpublished manuscript).



La Danta: Perfil de la Estr.3 en la Excavación IV.

Figure 12- Profile of Structure 3 from Excavation 4 (Baudez, unpublished manuscript).

Excavation 2 aimed to explore the western part of Structure 3, following one of the walls that were uncovered in excavation 1. The wall was followed throughout five 1.2x1m pits, in a west-east alignment, 1m apart, and continued until the end of the platform. At the edge of the platform, Baudez and his team exposed 32m^2 -or 27 units of 1x1.2m- in order to understand the construction of the western wall. The exposed area confirmed the original stratigraphy: below the western wall, corresponding to the first phase of occupation, was a 30cm thick floor, covered in more kitchen waste as well as painted rammed earth fragments (Baudez, unpublished manuscript).

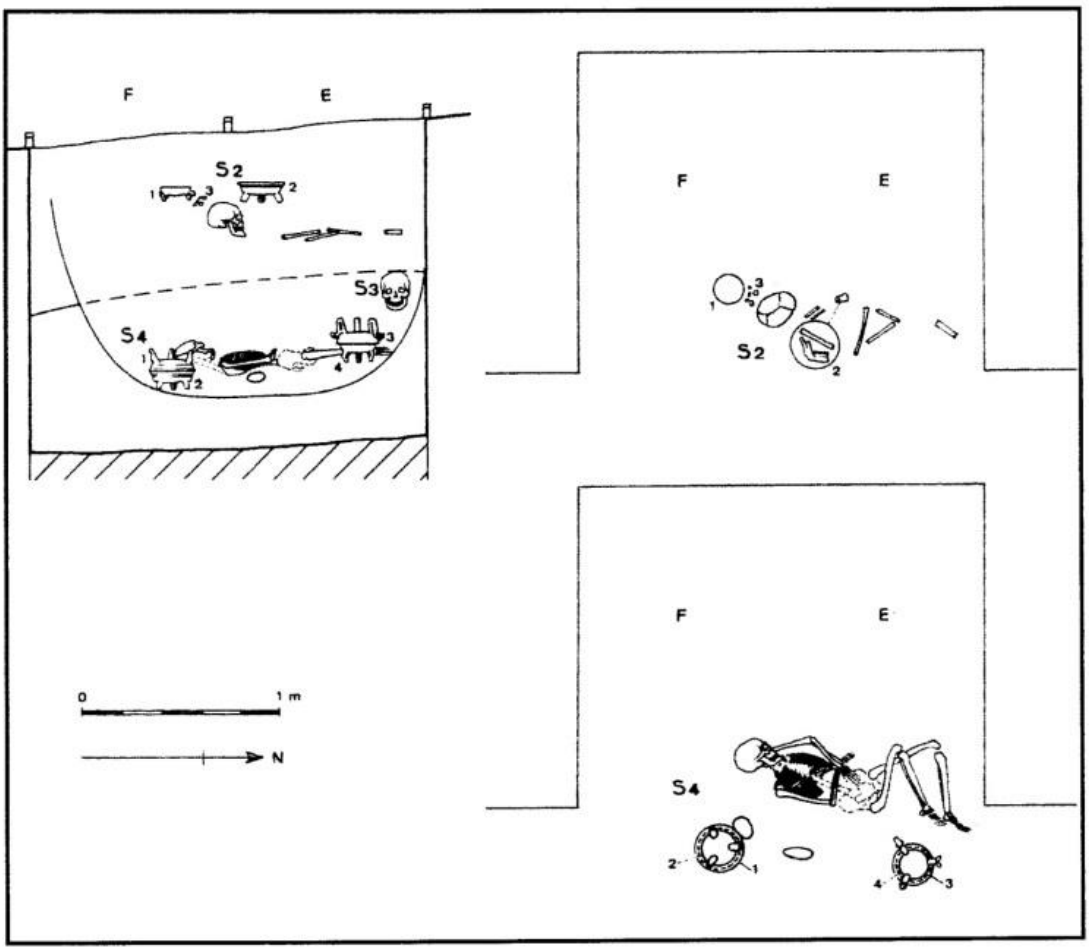


Figure 13- La Danta, Burials 2-4 (Baudez, unpublished manuscript).

The final Excavation 5 was an extension of the first trench 4m towards the north, aimed at exploring Structure 1. At first, this excavation did not show any sign of the structure's occupation. However, a wall, which would have formed the foundation to this mound, containing backfill was revealed. Only three vessels were found deposited against the wall. This artificial construction was built on another, older house floor, 80cm above ground level. Again, this older floor was covered in large pot sherds and rammed earth fragments. In the eastern side of the trench, two concentrations of pottery were found, 0.75m apart. Each concentration was composed of a bowl containing unidentified bird bones, covered by another upside-down bowl (fig. 13). The trench was subsequently enlarged, revealing a burial, accompanied by jadeite pearls (fig. 14). An additional cranium appeared at the bottom of one of the trench's wall. Finally, a subsequent burial was uncovered at a depth of 110cm to 120cm. According to Baudez's comments, all these burials can be dated to the last period of occupation of the site (Baudez, unpublished manuscript).

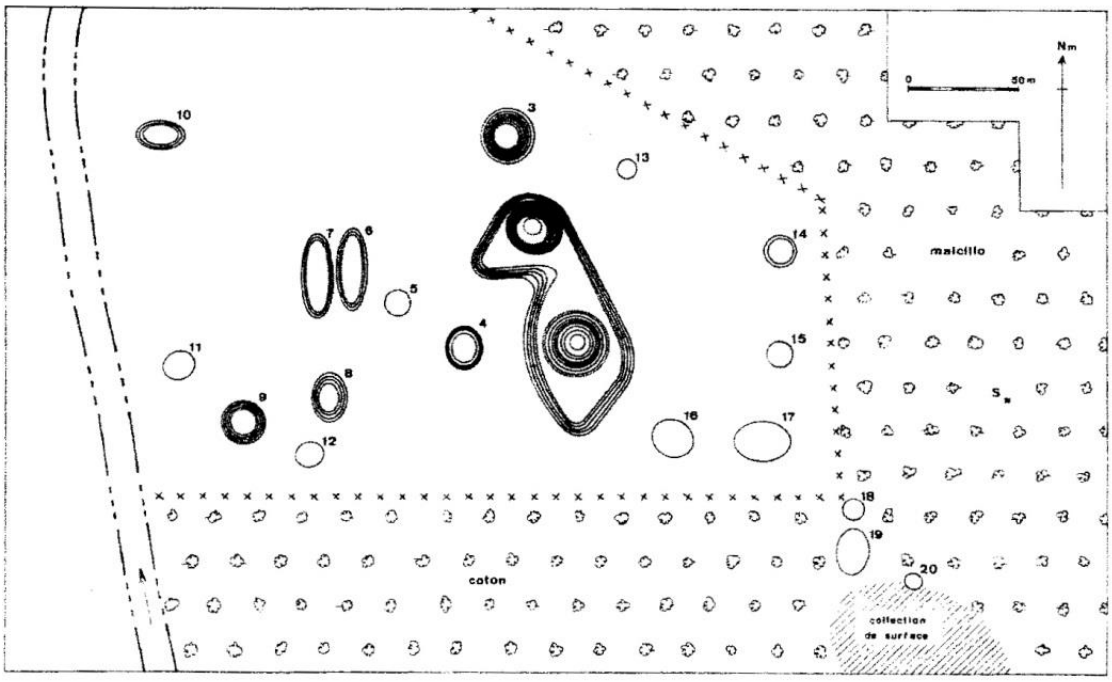
Figure 14- La Danta, Burial 4 (Baudez, unpublished manuscript)

3.1.2.3 El Espino

The lower course of the Nacaome River crosses the peninsula situated between the bay of Chismuyo and the bay of San Lorenzo. The peninsula is continued further in the Gulf by the Zacate Grande Island. During the dry season, the river is reduced to a small stream, while in the rainy season, the river can become up to 2km wide. This phenomenon leads to the creation of small lagoons, marshes and parallel occasional streams. One of these streams, at the time of Baudez's visit, started 2km away from the main Nacaome river bed, meandered parallel to it, and then flowed into the estuary of El Espino (Baudez, unpublished manuscript). It is in one of the loops of this meander where the essential part of the El Espino site is located. The site is thought to have covered an area measuring 1500m in the east-west axis, and 1000m in the north-south axis. When Baudez visited the site, it was situated in the middle of fields of cotton and gamagrass (*tripsacum*) fields. Parts of the site had been deliberately destroyed by farmers who had removed stones that prevented them from plowing their fields. Cobblestones from old mounds had been reused in the paving of a path to access the fields (Baudez, unpublished manuscript).

At that time, a group of structures—located in a 6ha area used for grazing cattle—to the west had not yet been destroyed. The first task performed by Claude Baudez and his team was to do a surface collection of sherds in the surrounding cotton fields. To document the extent of the site, the team inspected the walls of the streambank where

archaeological material was visible in a 30cm thick layer. Two mounds were still identifiable in the cotton fields: one 400m to the southeast of the main group, the other 200m to the south. The test pit was made east of the cotton field, in a small *tripsacum* field, outside of the mounded area (Baudez, unpublished manuscript).



Plano de El Espino (≠14).

Figure 15- Map of El Espino (Baudez, unpublished manuscript).

Twenty structures were identified, ten of which are mounds higher than 0.6m (fig. 15). Mounds 1 and 2 are 3m high and were built on a platform. The platform itself is 1.5m high and has a diameter of 30m at its base and 6m at the top. Baudez interpreted the indentation in the structure on the west side as means of access to the top. Another mound, aligned with the ones situated on the platform, has a diameter of 23m and a height of 2.5m. Because of the size of the monumental structures, Baudez argued this site as a ceremonial center (Baudez, unpublished manuscript). While there is a lack of evidence to support this claim, these structures may have had a public function. Additionally, Mounds 6 and 7 are situated 50m to the west of the platform, their axis parallel to one another, with 3m between them. They are 1m in height, 11.5m wide and between 37 and 38m long. These have a clear east-west orientation. A similar combination of mounds of the same dimensions was observed at the site of La Danta, dating to the same period (Baudez, unpublished manuscript). Finally, a number of smaller mounds are spread out between the river and the platform, except for a smaller one located behind the platform (14). Small rises, possible remnants of earlier structures or

eroded mounds are spread all around the platform. A 7m high shell midden (Mound 20) was also found, and it is perhaps not an accident that it is the structure situated the furthest away from the platforms (Baudez, unpublished manuscript).

The test pit, while situated outside of the architectural zone, revealed clear stratigraphic layers. The test pit consisted of a 2m by 1m trench with material collected in arbitrary 20cm levels. Four natural layers emerged from this test pit. In the first layer, between 15cm and 60 cm depth, 1,174 sherds were collected. Between 20 and 30cm depth, the wall of the test pit revealed a kitchen floor constructed with horizontally laid out cobblestones on which laid large pottery fragments. Traces of charcoal were sporadically found in the soil, which could indicate a hearth in the vicinity. Baudez iterates the possibility that this layer was constituted out of debris from a household in the proximity (Baudez, unpublished manuscript). The second natural layer corresponds to a 60 to 100cm depth. While there is no significant change in the soil, this layer contained the highest quantities of material. The assemblage found in this layer is composed of large sherds (3,878); refuse remains (peccary, deer, and fish bones), charcoal and fired clay fragments as well as dispersed cobblestones. In the eastern side of the pit, the entire layer is filled with a large number of cobblestones, covering an area of 80cm diameter, with the spaces between the cobblestones filled with sherds. Baudez interprets this layer as being the one corresponding to the period of permanent occupation of the site (Baudez, unpublished manuscript). The third layer (100 to 160cm depth) is signaled by a soil color change, in which the density of sherd diminishes considerably compared to the previous layer (1,113 sherds). At a depth of 140cm, on the eastern wall of the pit, a terracotta plate associated with deer bones may indicate a hearth. The last layer, at 160 to 210cm in depth, contained merely fifteen sherds, and sterile soil was reached after 180cm depth (Baudez, unpublished manuscript).

3.2 Ceramics

3.2.1 Regional Overview and Typology

Claude Baudez (1966) established five phases for the chronology of the Gulf of Fonseca region in Honduras. The first phase, Chismuyo, corresponds to the Early Classic in the Mesoamerican chronology. The diagnostic ceramic for this complex shows plastic decorations on coarse paste. Amongst the characteristic decorations are straight linear incisions, combing in waves, brushing and apparent coiling with digital impressions (ibid, 317-319). Several bichrome (red-on-beige and Usulután orange-on-beige) types can be

linked to this phase. Ceramic from this phase is characteristic for Monte Libano, although the site shows evidence for multiple phases of occupation into the beginning of the Fonseca phase (Baudez 1966, 317-319). The San Lorenzo phase is marked by the decrease of plastic decorations and the appearance of polychrome types, decorated with painted animalistic, geometric, and anthropomorphic designs. While some polychromes continue in the bichrome tradition from the Chismuyo phase in bold painting, others use fine line realistic painting (Baudez 1966, 319). This phase also witnesses a rise in popularity of bichrome types with the introduction of more red-on-beige types, red-on-red and black-on-red (Baudez 1966, 319). The occupation at La Danta corresponds to this phase, though it probably expanded into the Fonseca and the Amapala phase. The Fonseca phase is dominated by polychromes, continuing the traditions of the previous phase. New polychrome types appear, combining plastic decorations such as incision and excisions to polychrome painting. Cream slips also rise in popularity during this phase (Baudez 1966, 319). The Amapala phase shows an increase in cream and white-slipped polychromes, with motifs painted in red, brown, orange and black, closer to the types of the Greater Nicoya. Those types are represented as a majority in the sites diagnostic for this period. Additionally, this phase marks the rise of peculiar vessel types, such as very thin-walled colanders and bowls with textile impressions (Baudez 1966, 319). Finally, the Malalaca phase—although very little represented in the sample—shows a return to plastic decorations, such as tubular impressions, appliqués, incisions and excisions. Polychrome types have geometric decorations, painted using black or red paint on white background (Baudez 1966, 320).

3.2.2 Monte Libano

Figure 16- Examples of the Ceramic Types found at Monte Libano: (a) Chepito Graté, (b) Chiri, (c) Triunfo, (d) Auriga Café (pictures by author).

At Monte Libano, the excavation of Mound 1 showed that the ceramic present in the deeper levels was different than what was observable on the surface (Baudez, unpublished manuscript). In fact, the ceramic assemblage from this site originates from two separate phases: Chismuyo and San Lorenzo. The statistical calculation of frequency of types per unit revealed a possible separation into three clusters: the first cluster has almost an exclusive presence of Chismuyo period ceramics (fig. 16), the second one presents a mixture of the two phases in its ceramic assemblage, while the third is almost exclusively composed from San Lorenzo types (ibid). This preliminary analysis allows us to draw certain inferences from this site. In fact, as all the deeper levels and the backfill used for the mound construction contain Chismuyo material, the mound construction and occupation must date to the San Lorenzo Phase. The frequency table (tab. 2) allowed the construction of a ceramic sequence, which confirms the first interpretation of the stratigraphy, and correlates the changes in the ceramic typology with the different stages of construction of the mounds (Baudez, unpublished manuscript).

Table 2- Type frequencies in % by layer at Monte Libano (by author, based on Baudez, unpublished manuscript).

#16	I	II	III	IV	VII	VIII
Auriga	5	38,2	67,8	67,1	56,5	40,3
Orion	1,9	10,8	12,9	16,1	21	31,6
Regador	0,7	1,6	3,2	2,3	4,2	6,8
Namasigue	0,03	0,7		0,6	0,3	0,3
Estrella	0,2	0,9	0,8	2,1	3,5	4,2
Toalla	0,4	1,7	0,6	1,2	1,6	2,4
Jeronimo	0,1	0,9		0,8	1,1	1,6
Chepito		0,08	0,6	0,3	0,3	0,2
Muerdalo	0,1	2,6	3,4	2,2	5,9	7,5
Bolo	0,1	0,2	1,3	1,3	1,9	1,9
Ubaldo	0,03	1,5	1,5	1,3	0,4	0,2
Goyo		0,1	0,2	0,1	0,1	0,04
Triunfo	0,9	3	2,1	2,8	2,3	0,7
Cipote	0,1	1,2	0,4	0,1		0,2
Vijagual				0,07		
Yusguare				0,07		
Camora		0,08				
Dragón	46,4	26,9	2,6			
Hydra	8,2	3,4	0,2	0,2		1
Palmerola	0,4	0,08				
Chriri	0,9	0,08		0,07		0,04
Janiché						
Apazuru	0,03					
Calicanto	1	0,1	0,2			
Unclassified	33	5,7	1,7	0,7	0,6	0,6
Total	**2964**	**1268**	**463**	**1374**	**662**	**2200**

Ceramic material was also collected on the surface of Mounds 1, 3 and 14, as well as on the surface of Structures 4, 6, 9, 11, 13 and 16. The random surface collection shows the same frequencies as the analysis of the excavated material. The material being mainly from the San Lorenzo phase, it is possible to assume that the site was abandoned during this period. Baudez interprets the lower structures to be traces of the first occupation of Monte Libano, while the later one would be associated with the higher mounds (Baudez, unpublished manuscript).

3.2.3 La Danta

Figure 17- Examples of the Ceramic Types found at La Danta, left to right: Vallejo Polychrome, Pataste (Pataky) and Pataste (Papagayo Polychrome) (pictures by author).

The ceramic material from La Danta comes from excavations of the A group and of the test pit from the north part of the site. It can be dated to the Amapala Phase, except for a few sherds from Fonseca Phase types (Tular, Guandique, and Coyota). The assemblage is very homogenous, even when coming from a large deposition: significant difference cannot be observed with a change in depth. Therefore, Baudez sampled the ceramic from two units out of Trench 1 for his analysis of the ceramics at this site. In both units, the Layers 1 and two correspond to the level of occupation, Layer 3 to the backfill, and Layer 4 and the subsequent layers to the first levels of occupation. The main types of ceramics found at this site are: Tular, Guandique, Coyota, Gueguensi, Marcovia, Paisa, Chero, Pupusa, Pataste, Papaya, Vallejo (fig. 17), Jocomico, Chichunte, Hicacos, Cacaulito, Bichin, Tolondron, King Bee, Catracho, Plumbate, and Simisiran (see appendix C). At this site, natural layers could not be identified. Yet, it is possible to observe that, within the part of the assemblage dating to the Fonseca phase, Tular and Guandique, types are missing in the last level of occupation of the platforms, as well as King Bee and Tolondron. Moreover, the frequency of Chero, Cacaulito, Chichunte, and white slipped ceramics in general is higher in the layers corresponding to the first occupation of the site than in the layers corresponding to the second. Three types are underrepresented in the two sampled units: Coyota (1 sherd), Plumbate (2 sherds), Simisiran (1 sherd). All other types maintain the same relative frequency throughout layers (tab. 3). Therefore, even though the stratigraphy indicates two separate periods of occupation, it is to be assumed that those would have been of very close succession, as no clear gap could be identified. In conclusion, ceramic evidence seems to indicate that the site was only briefly inhabited (twice) during the Amapala period (Baudez, unpublished manuscript).

Table 3- Type Frequencies in % by Layer at La Danta (by author, based on Baudez, unpublished manuscript).

#13	1	2	3	4	5	6	7
Tular					0,5	0,2	0,6
Gueguensi	2	0,4		1,6	2,6	0,6	0,8
Monjaras	3,5	7,3	16,2	5,3	5,5	4,8	3,7
King Bee					0,2		
Bichin	0,5		0,6	0,3	0,2	0,8	1,3
Marcovia	44,3	50	48,7	56,1	55,5	55,4	40,1
Paisa	0,8		1,3	0,3	1,6	1,4	0,6
Chero	4,6	1,7	0,6	2,3	9,5	15	4,2
Pupusa	0,5	0,4	1,3	11	3,4	4,6	3,9
Pataste					0,2		
Vallejo		0,4	0,6		0,2	0,2	0,2
Jocomico						0,2	
Chichunte			0,6		0,2	1,6	0,2
Hicacos						0,4	
Cacaulito			0,6	0,3	1	0,2	
Tolandrón				0,6	0,2		
Tiscagua			0,6			0,4	
Catracho	0,3	0,4	0,6		0,5	0,4	0,4
Unclassified	43,1	39,2	23,9	31,9	18	13,5	43,5
Total of sher	**345**	**232**	**154**	**301**	**377**	**480**	**453**

3.2.4 El Espino

Figure 18- Examples of the Ceramic Types found at El Espino, left to right: Guatales, Guandique, Langues (pictures by author).

The ceramics from the second, third and fourth natural layers correspond to the Fonseca phase identified by Baudez (1966). The most popular monochrome types associated with this complex are Dragon Café and Hydra Red, which share the same paste, but differ in their surface color. Over time, the frequency of Hydra increases as Dragon decreases. While polychrome types associated with the San Lorenzo phase are also represented (Chiri, Calicanto), they are complemented with diagnostic Fonseca pottery such as Langues, Guatales, Corcovado, Nagarejo, and Tular, with the three first types corresponding to different varieties of Ulúa Polychrome (fig. 18). In the first layer, Amapala Phase ceramics are present: Papalón (a local white slipped ware in the Las Vegas

tradition), Bichin (colander), Catracho, Tohil Plumbate and Güegüensi (the Amapala phase utilitarian ware) (tab. 4). The latter is generally only associated with settlement whose subsistence relies on marine products, and is barely present in settlements subsisting off agriculture (Baudez, unpublished manuscript).

As for the surface collection from the nearby cotton fields, they seem to be contemporaneous with the first layer of the site (Amapala), with frequent sherds of Gueguensi, Papalón, and Catracho Polychrome. Two small volcanic stone anthropomorphic statuettes, associated with the same period, were collected by the field workers during the plowing. Through the relative dating of the ceramics, Baudez associates the structures at the site with a late Fonseca, early Amapala site occupation (Baudez, unpublished manuscript).

Table 4- Type Frequencies in % by Layer at El Espino (by author, based on Baudez, unpublished manuscript).

#14	0	1	2	3	4	5	6	7	8
Dragón	12,7	27,7	38,4	28,2	29,1	48,7	53	27	59,7
Hydra	12,1	24,2	22,3	42,5	49,6	29,4	24,6	19,2	14,5
Palmerola					0,1	0,1		0,2	
Chiri			0,2	0,4	2,1	2,3	2,3	2,7	2,4
Janiché									
Apazuru									
Calicanto					0,1	0,3	0,9	1	1,4
Nagarejo	0,7	0,5	2,2	2,2	4,2	4,7	4,5	5,4	9,2
Tular			1,4	1,4	3,2	4,3	5,6	5,8	6,3
Tipurin			0,6	0,2	0,1	0,2	0,4	0,2	
Guandique	0,1		1	0,4	1,7	2,7	1,9	1	0,9
Coyota				0,4	0,5	0,5	0,2	0,2	0,5
Zanate	0,3		0,4	1,6	0,4	0,7	0,4	0,8	0,5
Babilonia	0,1		0,4		0,2	1,3	1,5	2,4	2,3
Corcovado					0,4	0,2			
Gualiqueme		0,5							
Chuña									
Gueguensi	30,8	22,6	21,5	9,3	0,7	0,3			
Monjaras	4,9	1,1	2	2,2	2,3	1,1	1,9	0,8	0,5
King Bee			0,2	0,2	0,1	0,2			
Bichin			0,2	0,6	0,04				
Papalón	4	3,4	2,2	3,8	0,7	0,4	0,2	0,2	
Plumbate		0,5							
Catracho	24,2	2,8	0,2		0,04				
Unclassified	9,9	16,4	6,8	6,5	3,6	2	2,1	2,9	1,4
Total of the sherds	**677**	**177**	**503**	**494**	**2309**	**1569**	**423**	**484**	**206**

4 Ceramics, Identity and Sociality in the Gulf of Fonseca

4.1 Introduction

Building on Lange's reflection of resistance of local culture (Lange et al. 1976, 180), I aim to argue that local traditions existed on the level of a locality as well as on a regional level, and that these traditions were resilient to outside influences. This idea is directly embedded within the concept of *local identity* that this thesis aims to explore through the lens of operational sequence analysis, technological choice and communities of practice.

These theoretical approaches seem particularly appropriate when discussing cultures that have too often been "removed from space and time" (Wendrich 2016, 8). This consideration holds particularly true when considering ceramics. Past approaches to ceramics have failed to recognize the technical agency as well as the sociality of the potting technology, and have resulted in sequential and, as a consequence, also static views of a dynamic past (Dobres 1999, 126). The apparent uniformity recognized in certain cultures' ceramic traditions to legitimize culture areas has obscured our views of this past. However, these past approaches remain part of our archaeological narrative (c.f. Fowler 2013, 2). Different approaches will further contribute to unraveling unknown dimensions of the archaeological palimpsest.

Recent decades have seen a heightened interest for understanding past people as individual agents. Research exploring the social dimension of technology has shown that objects existed and had agency within social networks, underpinned by both their production and distribution (Cordell and Habicht-Mauche 2012). They have also shown the potential for relational realist archaeology, which conceptualizes entities (persons, materials or otherwise) as *assemblages*, "compositions stemming from the interaction of other entities, materials, and various forces" (Fowler 2013, 2).

The potential of relational realist archaeology can be seen, for example, in the exploration of the role of boundaries and landscape in defining local identities. As mentioned above (see Chapter 1), the Gulf of Fonseca exhibits strong environmental diversity, which would have certainly contributed to the definition of localities in the Gulf. Moreover, it would have limited access between locations and facilitated access between others. There is, therefore, an idea of a local environment which would have required strong adaptation and adjustment from previous environments for newly arriving small communities. Contrary to the ceramic assemblages, the environment creates unity on the regional level, making the Gulf of Fonseca and its surroundings distinctive from all

neighboring environments through its diversity. Here, the environment can be seen as a force at work in the construction of a material assemblage and in shaping the life of local peoples.

Relational realist archaeology will be applied in the proposed theoretical approaches, intending to bridge the entanglements between materials, people, and environment. First, discussions on ethnicity will explore the contributions of community construction to the interpretation of material. This will reflect on *locality* as well as how different settlements may have related to one another. Second, the idea of craft as a representation of a multi-vocal identity will be explored. To this end, conceptualization, technological knowledge and choices will be focused on. Finally, the sociality of craft in crafting communities and networks of actions will also be explored. In fact, relational realist archaeology argues that

> *arise from the in*

Fowler's above contention reflects the imperative for artefacts to always be studied within their entangled context (to the extent to which it is known) in order to produce an archaeological narrative.

4.2 Ethnicity and Community-building in the Gulf of Fonseca

The problems associated with questions of ethnicity are not exclusive to the fields of archaeology nor anthropology. In fact, ethnicity and questions of inclusion and exclusion of ethnic communities are part of a long-standing research tradition, originating in sociology with Weber and finding anthropological manifestations with Bourdieu and Barth. In the several thought currents that have existed on the subject, "modernists" have argued that the importance and resilience of ethnicity is intricately linked to the developments of nation-state, and that appurtenance to an ethnic group may have been more flexible in the past (Wimmer 2013, 1-2).

This position finds its origins with Barth (1969, 10), who argues that the variability of the categories of ascription and identification depends on actors and not on observers. This self-identification and appurtenance to groups certainly existed in the past, however, it remains difficult to identify in archaeological record. Thinking about what constitutes ethnicity can nonetheless provide insight into past community-building practices.

Wimmer (2013, 2) observes that discourse often focuses on identifying differences between ethnic groups:

> *we now outline how it came into being and how it later dissolves; instead of observing the everyday workings of an ethnic culture, the varying claims to cul*

The same observation applies to archaeology: researchers are more interested in finding the replacement, decline, or migration of a certain culture than in understanding how this culture would have been present, renegotiated or represented actively in day-to-day life.

Ethnicity is too often seen as a stable, rigid concept (Wimmer 2013, 2), when in fact, it is fluid and fluctuates with time (Loomba 2005, 64). Ethnic groups are subject to constant internal changes, innovations, and redefinitions (Jones 2007, 47). This is difficult to explore in archaeological contexts when ascribing assemblages of material culture to ethnicities, particularly when thinking about what should be within a natural range of variation or temporal change. Innovations are often associated with external changes and pressures to a community (c.f. Childe 1956, 135). This has been particularly the case in areas such as Central America, where despite ethnicities (generally associated with linguistic groups) being diverse, cohabitation in small territories was common.

Considering therefore that mental boundaries drawn may not be bound to a territory, but to appurtenance to (possibly ethnically heterogeneous) "imagined community" (Anderson 1991), regional interactions in the Gulf of Fonseca may have been shaped differently than previously thought. In fact, "Imagined communities" are inherently more permeable and fluid than bounded ones. Imagined boundaries may well have existed in the Gulf of Fonseca, however, these may not have been defined exclusively by ethnicity. Instead of self-identifications such as "I am Chorotega", identification may have been conceptualized in relation to kinship or community, such as "I am from this village" or "I am a potter". These forms of belonging relate more to social relationships than cultural relationships.

Social closure may have existed around these communities. However, this carries the implication that the term "foreigner" may well have been applied to individuals speaking the same language, practicing the same religion, and being of the same "ethnicity"; but pertaining to another community, either geographically or by their activity: it is possible to argue that multilingual communities may have existed in the region, while there still being a rejection on political grounds of certain outside pressures or influences.

"Imagined communities" also imply the possibility of self-identification with several communities, for example "I am a potter and a weaver and I come from here". Multiple social roles can therefore be taken on and have the potential to create multiple spheres of belonging. In terms of craft production, this can manifest through interaction in the same household or between the same individuals in communities of practices for different overlapping crafts or activities, creating a so-called 'network of actions' (Brysbaert 2007). Jones (2007, 51) uses similar ideas to contribute to her definition of ethnicity:

> *nicity is likely to be manifested as multiple overlapping boundaries constituted by representations of cultural difference, which are at once transient, but also subject to reproduction and transformation in the (Jones 2007, 51)*

In this definition, too, ethnicity becomes closer related to social roles and social boundaries than ones associated with language or territory.

Communities can create boundaries of exclusions in many ways, for example, through secrecy of crafting practices. Taboos, such as food preparation, can also create social closure around women. This social closure could have occurred within one settlement, or even one household, excluding members of a same local community from social processes on grounds of non-appurtenance to a sub-community. In this sense, non-ethnic forms of belonging would have underpinned processes of inclusion and exclusion. It is also necessary to understand that the exclusion from a community would have not involved violence, discrimination nor rejection. Rather, social closure would have existed as an (un-)spoken social norm within local communities.

How can ethnicity and communities be recognized by materials? Jones (2007) argues that part of the construction of ethnicity occurs through the "objectification of cultural difference" (ibid., 51), reliant on oppositions found between cultural traditions. Archeologists look for the materialization of the appurtenance to a community, existing as a signature illustrating community-belonging. Practice theory has contributed to the understanding of ethnicity in an archaeological context, (ibid, 51-53), however, it is often presented in archaeology as connected to the idea of shared *habitus* (c.f. Jones 2007, 50), associating ethnic identity with cultural practices and social conditions shared within communities. The identification of such phenomena to archaeological assemblages can be problematic, as its manifestations can vary widely (ibid, 52).

This idea has been widely echoed in relational archaeology (c.f. Fowler 2013). There has been a call in recent year to abandon entirely the presumption in archaeological research of bounded socio-cultural units in cases of site or regional assemblages (Jones 2007, 51). Building on this framework, a *communities of practice* approach on a localized level would provide insight into the social boundaries constructed between ethnic communities, through the observation of different learned practices in *chaînes opératoires* of manufacture. It is important to keep in mind that these manifestations can express closer links to personal histories than to the belonging to a community.

4.3 Exploring Craft and Identity through *Chaîne Opératoire* and Technological Choices

Leroi-Gourhan played an important role in developing the analysis of the operational sequence (Leroi-Gourhan 1964). His works are of particular relevance when exploring the idea of local traditions: Gourhan viewed technology both at an individual level of technical gestures as well as from the wider angle of macro-evolutionary processes (Lemonnier 1993, 15-16) – in the frame of this research, the regional tradition. Gourhan also established the distinction between conceptual knowledge and practical skill of the artisans (Leroi-Gourhan 1964). The concept of *chaîne opératoire* was further developed and applied in the 1980s in archaeological publications specializing in lithic analysis. The interest in past technologies of production had already been sparked during the beginning of the twentieth century, when it was recognized as "a component of human society and its way of living" (Bar-Yosef & van Peer 2009, 103). The aim of operational sequence analysis was to provide an understanding of the artisan community within a settlement, and furthermore provide solid material evidence of the past through reconstructing gestures.

During its development, the method exclusively focused around examining the sequence of technical actions in the production of material culture. Later, this analysis was made to incorporate the use and the repair of objects (Dobres 1999, 125). By distancing itself from purely describing a final product as an independent result rather than an entangled one, it has since proven quite successful in recreating the so-called 'mental maps' of craftspeople through the analysis of the artefacts they produced (Dobres 1999, 124). Furthermore, this method reflects on the social agency of craftspeople rather than applying culturally deterministic views on certain artefact classes.

A central outcome of the aforementioned research into technical gestures and technological choice is the "rethinking of the notion of ethnicity or cultural identity [that] should from now on be considered as polythetic and, moreover, dynamic" (Degoy 2008, 199). Technical behaviour has, in recent studies, been related to cultural identity (Degoy 2008) and to social identity (Dobres 1999, 125). However, establishing a relationship with cultural identity remains a complex matter (e.g. Arnold 1991; Gosselain 2000; Hegmon 2000; Roux 2003; Stark 1998) and has resulted in a general consensus that, aside from culture, social, economic, historical, political, technical and environmental and several other factors played a role in influencing technical behaviour (Degoy 2008, 201). This echoes the ideas presented in relational realist archaeology (c.f. Fowler 2013, 1) as well as the idea of entanglement (c.f. Hodder 2011).

This thesis focuses on cultural, social, and technological factors, subsequently relating these concepts back to an idea of local community-belonging. Roux (2016, 2-3) for example argues that the learning process in crafting communities is and inherent part of group identity formation: as technology is transmitted from one generation to the next within one social group, that group comes to share *chaînes opératoires* in varying social perimeters to which their embodied practices link them or differentiate them, creating an "imagined community".

In fact, the *chaîne opératoire* plays an essential part in the processes of expressing, defining and negotiating social identities (Dobres 1999, 28). Technologies are a central part of human life, and ethnographical studies have shown that the social role of craftsmen differs widely, typically holding a position of power in a society that is relative to their knowledge and the quality of their finished products. It is therefore possible that these individual agents negotiate their identities via the production of utilitarian objects (Dobres 1999, 129). The idea of technology being related to identity is three-fold: humans use crafts to (1) affirm their identities; (2) negotiate their presence in the world through the act of creation; and (3) - in a more metaphysical sense - to symbolize their entanglement with materials as symbiotic relationship between human and environment.

This entanglement relates to Van der Leeuw's (1993) definition of conceptualization as a way to bridge over mind, body and practice. Van der Leeuw, as other authors (e.g. Roddick and Stahl 2016; Roux 2016; Wenger 1998), expresses the two-part composition of craft knowledge and transmission (perceptual-motor and cognitive skills and a mental representation of the final product) but also the necessity to reunite the two in studies of

operational sequences, seeing the choices the potters make as inherent parts of their identities.

It is these choices that are evidenced by the *chaîne opératoire* of the manufacture of pottery, which links them to the conceptual aspects of pottery techniques (van der Leeuw 1993). In fact, the part of the operational sequence where culture most certainly plays a role is the idea of conceptualization of the final product: the idea of a standard that must be worked by. But the process to arrive to this final product is flexible and adaptable to the potters own technological choices. While ceramicists generally stress the constraints of ceramic production (e.g. Arnold 1985), they often forget that the variability of the final product is also linked to choices which potters make during the process of creation. As van der Leeuw (1993) contends, "in pre-industrial societies, one must assume considerable freedom of action for the potter" (ibid., 239), rarely limited by availability of raw material and rarely subjected to environmental or cultural determinism.

This final idea is one that directly relates to communities of practice: a community amongst which those mind-maps are shared through the use of common processes and are transmitted from generation to generation within a settlement. As explored in the next section, communities of practice and apprenticeship go beyond the transmission of mind-maps, and are strongly tied to bodily practices as well as ideas: Lave and Wenger (1991) state that the cultural transmission of craft was also grounded in

> *hensive understanding involving the whole person rather than*

Communities of practice therefore play an active role in identification and processes of identity-forming through the inherent mutuality of apprenticeship, through "shared histories of learning" (Wenger 1998, 86), which the individual can use to identify with a group or separate his or herself from it.

4.4 Sociality of Craft: Communities of Practice and Networks of Action

The production of material culture is foremost a practice around which social interactions were shaped. To reflect the central role played by the sociality of craft and technology within community, it is useful to consider archaeological record through the lens of *communities of practice.* The community of practice approach explores networks of production and apprenticeship, sometimes cutting through both social and physical boundaries (Joyce 2012, 149). In fact, the communities of practice approach and the

constellation of practice approach aim to examine how traditions (the doing of things in a certain way) are "produced, reproduced, transformed, and articulated through generations and geographic distance" (Roddick and Stahl 2016, 4). In other words, these approaches aim to explore the social processes behind the notable degree of homogeneity that can be observed across a broad range of regions in ceramic assemblages.

The idea that the practices of communities of craft are created in social relationships is illustrated in Lave and Wenger's proposed idea of *legitimate peripheral interaction* (1993). This idea opposes the view of learning as simple internalization (Roddick and Stahl 2016, 7), and rather proposes that learners can learn in everyday life circumstances through *situated learning.* As such, they acquire the basic skills of a craft through observation, progressively "moving from peripheral involvement to full integration into a community of practice (Lave and Wenger 1991, 29; Minar and Crown 2001 as cited in Roddick and Stahl 2016, 7).

Roddick and Stahl (2016), attempt to define terms generally associated with the study of *communities of practice* in order to standardize this approach. In their approach, the idea of conceptualization of a final product (as presented in the previous section) holds a central place, in particular in the establishment of a ceramic tradition. Roddick and Stahl (2016, 9) additionally note that crafters and learners can pertain to several communities of practice. For example, the idea of a polychrome "tradition" could be contested using operational sequence analysis, as technically the product may be made by the same community of potters making household ceramics. In fact, the intersections between learners, different communities and even constellations of practices can be extremely intricate, which makes their identification in archeological record difficult.

A community of practice approach combined with *chaîne opératoire* can also be a useful alternative to homogenizing ideas of "culture" and "tradition" (Joyce 2012). Following Wenger's (1998) logic, this thesis argues that communities of practice overcome this problem by being focused around a locality at a level of analysis (Wenger 1998, 122-123; as cited in Roddick and Stahl 2016, 9). In observing local craft practices, the utility of looking at operational sequences through the lens of *communities of practice* is reflected in a number of aspects: in order to recognize *communities of practice,* we must focus on the similarities in procedures, and not on the sole appearance of the final product. Moreover, *communities of practice* can provide insight into the permeability of local

traditions (and by extension, the social closure of the communities), their openness to variation and, diachronically speaking, their innovation, by evaluating how long a tradition remains static at one site. Finally, it can provide insight into the skill of the maker, and most importantly, on the sociality of technology and possible cross-craft interactions.

The idea of *networks of actions*, much like communities of practice, focuses on technology and human interaction (Brysbaert 2007, 330). Cross-craft interaction is seen as the contact between two or more crafts "within their existing sociocultural system" (Skibo and Schiffer 2001, cited in Brysbaert 2007, 328). This can be best observed in the operational sequence of pottery manufacture. In pottery, the overlap between different communities of practice can be seen in the use of materials that may not have been produced by the potter. Tools, for example, may have been produced by a different crafting community and bought or exchanged by the potter. However, the potter can also pertain to different communities of practice, which all individually form part of the potter's identity. For example, the potter may have produced both pottery and basketry: in this sense, the network of action is created by the person (and their community of practice) with whom the potter overlaps. This thesis focuses on the conceptualization of cross-craft interaction that uses the *chaîne opératoire* analysis to reflect the sharing of ideas, knowledge, techniques, skills, materials, facilities or equipment (Brysbaert 2007, figure 1). The concept of *networks of actions* (Conneller 2008, 165) adds the dimension of "sociality of technology" to cross-craft interaction (Tsoraki 2011, 14). In another way, this concept supports the entanglement between human, places and things (Tsoraki 2011, 13).

It is essential to situate communities of practice in place, i.e. in their *locality*. This can be done by exploring the situated-ness of *taskscapes* (Ingold 1991) within the landscape. This also entails allowing the landscape and environment their affordances in the potting process. As mentioned in the first section of this chapter, the environment and landscape also have agency in how different social groups meet and are able to share knowledge. The knowledge of how to navigate the landscape would therefore have been connected to the possibility of sharing craft-related knowledge with other groups and communities of practice, playing an essential part in the development of a constellation of practices.

The problem of scale also evinces the question of spheres of interactions, and the subject of the agency of objects, locales and landscapes (Roddick and Stahl 2016, 5). In fact, these

spheres of interaction within which learning is situated can be modified by environmental changes, creating new spaces of encounters within the landscape.

In the Gulf of Fonseca, where volcanic activity was frequent, environmental changes and the knowledge of how to navigate through the landscape would have been key to changing or maintaining social networks between groups and communities of practice based in the same settlement. These aspects are key when considering how, through social contact-induced situated learning, traditions would have replicated and transformed throughout broad landscapes (Roddick and Stahl 2016, 5). In this process of replication, the intimate contact between learner and teacher is as important to consider as the contact between different social groups, networking through time and space. Of course, we cannot generalize our conclusions to a whole settlement, but a technological analysis combined with a *communities of practice* approach is fruitful when evaluating craft-practitioners as a community within a locality.

As Roddick and Stahl (2016, 9) note, these constellations of practices can be formed intentionally or accidentally. Landscape is part of how boundary objects can then emerge, inhabiting distinct social worlds which exist in the liminal spaces between two communities of practice. In the case of pottery, these spaces in landscapes can be shared by two localities, as is sometimes the case in clay quarries (Roddick 2016). The creation of traditions - or "boundary objects" - in liminal spaces is based on the aesthetics that inspire communities, rendering obsolete the hypothesis regarding the correlation between culture and aesthetics. In a landscape such as the Gulf of Fonseca, this would have permitted encounters and contact between numerous groups. Objects sharing similar aesthetics and operational sequences are therefore to be seen as *assemblages* representing communities instead of symbolizing ethnicities.

5 Pots, Plates and Puzzles: Dealing with Fragmentary Evidence

Claude Baudez created his typology based on the 31,837 sherds he had collected on 20 sites in the Gulf of Fonseca region during his 1964-65 field season. As the exporting of ceramic material from Honduras was controlled back then as it is today, Claude Baudez created his typology partially in the field, and later working off field notes and illustrations. Only about 776 sherds were finally sampled for export, in typological sample bags designed to be lent to universities for research purposes. Because of this small sample size, it was impossible for this thesis to revisit this typology. Additionally, although the material was originally stamped with the provenance codes, many sherds no longer had a provenance. For the purpose of this research I have therefore decided to focus on the sherds which still had a partial or full provenance code, and decided to focus on the three sites with the biggest sherd sample. These represented 257 sherds out of the 18,115 sherds that were originally collected at those three sites: 1.4% of the assemblage. Two of these three sites had been subjected to excavations and had radiocarbon dates associated with levels. The third site, El Espino, had only been subjected to test pitting, and was dated through relative chronology.

Due to the nature of the data, a typological analysis was discarded early on and I instead decided to focus on technological markers. The term "technological marker" represents an attribute linked to a technological choice made during certain steps of the operational sequence of manufacture. Technological markers are the manifestation of those choices that are still observable on the sherds. Therefore, it is important to understand the ceramic manufacturing process to properly understand and interpret technological markers.

The sherds were catalogued to allow for data sharing and comparison with material from other projects active in the Gulf of Fonseca region. While Baudez's typology could not be reexamined, it will still be used for the purpose of this research. To better understand Baudez's typology, I will present briefly his methodology and how it relates to the technological classification that arises from this research. The description of the ceramic assemblages will also generate useful data in the understanding of "style" and aesthetic traditions in the Gulf. For the scope of this research I focus on lip and body forming techniques, surface treatment, firing and decoration. I will further discuss how communities of practices can be observed from a methodological standpoint. Finally, I

will present how group clustering can provide evidence of links between different assemblages based on technological markers. Limitations of this research are the small sample size and the lack of control over the original sampling methods.

5.1 Baudez's Typological Analysis

Baudez's typology relies on different vessel characteristics. In his typological classification, he takes into account paste composition (temper, texture, color, firing), surface (color, appearance and treatment), vessel shape and decoration. He states his aim as the determination of vessel function. In his goal to do so, vessel shapes take a central position in his analysis (Baudez, unpublished manuscript). Paste, surface treatment and decoration seem to weigh the most into his type classification.

First, he divided the rims belonging to a same ceramic type in large categories (such as jars with a restricted neck, restricted vessels without a neck). Within each category, he further created classes which he defines according to "ideal forms" that the rims suggest (Baudez, unpublished manuscript). During the classification, Baudez noted the difficulty of identifying shapes, as some rims were not indicative of the shape of the body of the vessels and the differentiations between parallel, concave or convex walls, and between simple and composite contours, are not always clear. In the end, the vessel shape categories he comes up can be made to correspond to the ones used in this research, based on terminology used in the Leiden Ceramic Codebook (Hofman 1993), which was originally developed for the description of pre-Columbian Caribbean ceramics.

5.2 Cataloguing of the Data

In order to catalogue the ceramics, I constructed a basic Microsoft Excel database based on characteristic descriptions from the Leiden Ceramic Codebook (Hofman 1993). For comparisons and cooperation purposes, I also based my classification system on the one used in the Proyecto Arqueológico Chinandega, one of the few active projects in the region of the Gulf of Fonseca at the moment. The description was only done for sherds from known provenance that could be associated to either of the three case study sites (Appendix D).

The categories created for basic description purposes include: vessel part, type in the Baudez classification, vessel shape and wall profile, the weight and dimensions of the sherd, the rim diameter, the lip shape and rim profile as well as the surface hardness. The

description of the appearance of the sherd carries on with paste description with Munsell colours of the surface, and the different identifiable layers as well as presentation of the temper colour, shape, size, sorting and quantity. Surface of the sherd is described with location and colour of slip and paint, as well as surface treatment and decoration.

The Leiden Codebook for Ceramics (Hofman 1993) was used for the vessel shape and wall profile as well as for the lip shape and lip profile for which I adopted the Codebook terminology. The rim diameter was measured using a rim diameter chart, and the surface hardness using a Mohs scale. The measurements taken for description correspond to the wall thickness 2cm below the lip if applicable, or at its thinnest, as well as the maximum length of the sherd. This descriptive cataloguing is further complemented by a table dedicated to technological traces which focuses on interpretative observations.

5.3 Operational Sequence Analysis

The full operational sequence analysis would consist of trying to retrace the different links of the *chaîne*, the first level of description of which would be dedicated to understanding manufacture (collecting and preparing the raw materials, fashioning, finishing, surface treatment, decoration and firing); the second level of description is describing the *chaînes opératoires* involved on each different step. Conneller (2006, 166) critiqued approaches focusing only on isolated steps of the operational sequence, arguing it leading to a static view of technology. However, I argue that even focusing on a single step of the sequence through the analysis of technological markers can be informative, in particular in examining technological choices.

To fit the scope of this thesis, I will focus on different steps of the *chaîne opératoire*, without attempting to recreate the full sequence as the material this work is based on does not allow for a full reconstruction of techniques associated with the multiple steps. The analysis that will be performed will therefore be based on Rye's (1981, 59-95) guide to reconstructing forming techniques, with a focus on forming, surface treatment, decoration and firing. The results of this analysis will be catalogued to facilitate statistical analysis later on (Appendix A).

5.3.1 Forming Techniques

There are many possible techniques available for the forming of vessels. Vessels are mostly formed in several stages, which can combine different forming techniques. Roux

(2016, 3-5) differentiates between roughout and preforming techniques. The roughing out step is generally associated with hand-forming techniques. The following techniques will be considered in this analysis. The simplest pots are formed by pinching a hollow in a lump of clay and forming the vessel by modelling (Orton et al. 1993, 118; Rye 1981, 70). This technique is used for smaller pots or to create appliqué pieces for other vessels (Orton et al. 1993, 118). Coiling is another roughing out technique (Roux 2016, 4), where pots are formed by joining a series of coils together, as rings or as spiral (Orton et al. 1993, 118). Shepard (1954, 55) notes that it is not uncommon to start the roughout of a vessel by modelling the base and the lower part of the vessel and further completing it with coils. In general, the roughout is obtained by thinning operations of the walls (Roux 2016, 4). The following preforming techniques will be considered in the analysis: coiling, molding and modelling.

According to Roux (2016), three main forming phases can be identified: the fashioning of the body, the orifice and the base. Because of the small sample size of the assemblage, I will exclude base construction from the analysis and focus on lip and body forming techniques. For the application to the material subjected to this analysis, the main lines of evidence used in reconstructing forming techniques are selective breakage (fracturing pattern of the sherd), surface marking, variation in wall thickness and surface finish. These attributes are particularly adapted to identifying coiling in ceramic material. While coiling is not often detectable by surface markings or surface finish, many samples in the assemblages show signs of the coils purposely not having been obliterated by finishing, and kept as a decorative element.

For the lip, the different forming techniques identified are folding, rolling, reinforcing of the lip with a coil, construction with a coil separate from the body, lip constructed out of more than one coil, and modelling from the body. Folding of the lip implied first the flattening of a coil, which is the folded upon itself. Rolling implies a similar technique of flattening the coil, which is subsequently rolled up. Sometimes, when the lip is composed of a coil, another coil will be used to support the lip to avoid fracture. In certain cases, the lip will be constructed of more than one coil to create an outside thickened or wedge effect.

For the body, the construction techniques that will be considered are coiling in one layer and coiling in two layers. While molding and modelling do not seem at first glance to be present in our assemblage, we will still be taking it into consideration. In many cases, it

will not be possible to identify forming techniques, which then will be labelled as "undetermined".

5.3.2 Surface Treatment

Surface treatment and surface finishing of the vessel, as well as decoration, can happen before the drying process as well as after. While some techniques overlap, some are exclusive to the plasticity or leather-hardness of unfired clay. Certain surface treatments also overlap with secondary forming such as trimming, scraping, beating and turning, as they all serve as much to alter the appearance of the vessels as to smooth irregularities left by coiling (Orton et al. 1993, 126). The main techniques for surface treatment are smoothing, burnishing and polishing. All three are different grade results of similar technique: rubbing a tool against the leather textured surface of the vessel (Rye 1981, 89). Burnishing and polishing can also be performed on a slip (Rye 1981, 89).

Slipping is used to improve color or texture of the surface of a vessel. Slipping consists of the application of a superior coat of clay prepared as clay suspended in water. The consistency of the slip can therefore vary widely, depending on clay minerals, particle size, and absorbed ions (Shepard 1954, 68). It can be rubbed to make it more compact and the techniques for its application and production can also vary widely (Shepard 1954, 68-69).

Variation in surface treatment will be another element of the operational sequence that this research will focus on. For the lip, I will differentiate between scratching, smoothing, burnishing and slipping. For the body, more options of surface treatment will be taken into consideration, reflecting a greater variation observed in the assemblage. Several surface treatments can be combined and observed on the same sherd, and repeated combinations will therefore be taken into consideration in our study of the tradition. The surface treatment elements that will enter in this study are: the lack thereof (crude surface), smoothing, different degrees of burnishing, polishing, scratching, scraping, smearing and slipping. Again, the use of different tools and skillsets will be taken into account as much as the final result. For example, as aforementioned, smoothing, burnishing, and polishing require similar gestures and tools, while scratching and scraping require different ones. Slipping in itself constitutes a separate step from surface treatment, as it is generally applied after the surface has been smoothed or burnished and will therefore constitute a separate category divided between absence of slip, single

slipping or double slipping. The latter will also include the application of a slip-on-wash or wash-on-slip.

5.3.3 Decoration

The texture of a vessel before drying and firing lends itself to many plastic decoration techniques, mainly related to cutting or impressing or appliqué. The techniques related to cutting are carving, combing, drilling, incising, perforating, brushing, and piercing. The techniques related to displacement of clay are impressing, rouletting, and sprigging. Finally, the decorative techniques associated with joining are application and modeling (Rye 1981, 90-94).

The last decorative technique that is widespread is painting. In painting, it is most interesting to see how the potter goes about preparing the mineral pigments, in particular to reach a consistency that can be spread, and how it can be made permanent or water resistant. The uniformity of the mixture and the homogeneity of the particles are key in paint preparation, whilst an added organic component can improve the binding qualities of the paint (Shepard 1954, 71). Tools for the application of paint can be brushes, sticks and even fingers. Further decorations such as incising, excising and painting can be done post-firing, generally after the cooling down of the vessel.

Data on the nature of the decoration will also be collected as part of this research. For the lip, decorations will be split between the categories by Rye (1981, 90-94) as described above: cutting, displacement techniques, and joining techniques. Additionally, this research will also be considering the two-dimensional technique of painting.

The distinctions done for the decoration of the body will be more diverse. The possible decorations that have been observed in the preliminary analysis of the materials can be divided into two categories: decoration applied on wet clay and decoration applied on dried or fired clay. The decorations that require the vessel to still be plastic are: brushing, incising, excising, combing, impressing (with tools or digital impressions), punctuating, and appliqué. Painting can be applied on plastic clay but does not require it, and can be applied pre- or post-firing, although this differentiation cannot always be established. Incising and excising (cutting techniques) can be equally applied when the vessel has fully dried or has been fired. Once again, these differentiations are meant to reflect the different use of tools, knowledge and skill needed for the different tasks. Combination of different decoration modes on the vessel will be of particular interest.

5.3.4 Firing

Firing is one of the most complex steps of the operational sequence, as techniques can be combined and vary widely. Firing can be grossly divided into two categories: open firing and kiln firing (Orton et al. 1993, 127-128). The essential variables to consider in firing are temperature, rate and atmosphere (Rye 1981, 98). Open firing does not involve a firing structure, but it involves a high degree of skill and observation to be successful (Rye 1981, 98). This system is common amongst many traditional potting communities (Orton et al. 1993, 127). The basic method for open firing consists in stacking the vessels over the fuel and to fill the gaps between and over the vessels with more fuel or waste sherds, but can also include the cooking of vessels in small depressions in the ground (Orton et al. 1993, 127)(fig. 19). The main characteristic of open firing is the fast rise in temperature and the short duration of the fire (Orton et al. 1993, 127). The atmosphere is basically uncontrollable in open firing after the fire has been set (Rye 1981, 98). A variation midway between open firing and the kiln are enclosures or stone walls built around an area of open firing, which offer better control over oxidation (Rye 1981, 98).

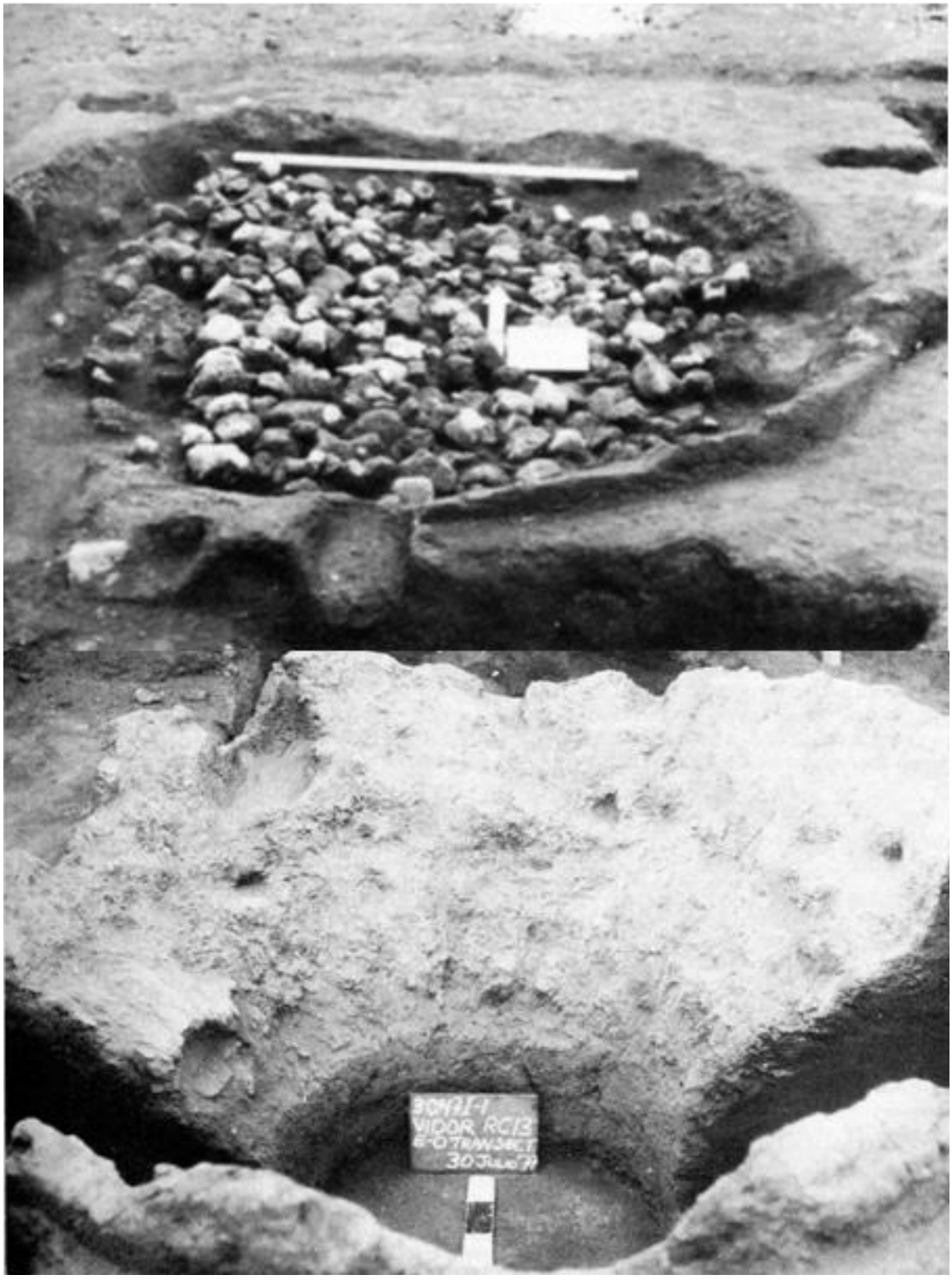


Figure 19- Example of open air firing pits from the Vidor Site in Costa Rica (Abel-Vidor 1980, fig.2 and 5).

The different stages of the firing process are as follows: water smoking, low-temperature decomposition, clay mineral decomposition and sintering, organic combustion, vitrification and cooling. These steps depends on materials, therefore not all vessels will go through all these steps (Rye 1981, 105-111).

The firing process is complicated to fully reconstruct from the limited information provided by the sherd and its paste color. Although being an interpretation that cannot always be verified, the extrapolation of the paste color into firing process is an accepted standard of description and classification for ceramic material. While Munsell colors of the different layers of the paste have been taken as part of the description catalogue, the technological analysis will attempt to differentiate between firing atmospheres. As the paste color changes can be associates with different variables from the firing process, and that the same process can be linked to different results, the firing atmosphere will not weigh heavily into our final conclusions and not be used as a variable within the hierarchical clustering.

The description made by Rye (1981, 116) is considered a standard and identifies two main categories: oxidized and reduced. Furthermore, it considers the presence of organic material within the paste at the times of firing. I will have two categories of oxidization: with and without core. Furthermore, six categories for the results of a reducing atmosphere were created, based on Rye (1981, 116). Five of these categories do not depend on the presence of organic material, and they can be differentiated according to the appearance of the core: reduced with diffuse core margins, reduced with black or grey "core" extending throughout the wall, reduced without a core, reduced with a sharp core margin and reduced with a double core. When organic materials were originally present in the reduced atmosphere, the sherd can exhibit a diffuse core (Rye 1981, 116).

5.3.5 Temper

The grinding of the clay in a mortar or on a metate is part of the paste preparation and allows the regulation of particle size. Clay and temper can be ground together, or ground separately and mixed later (Shepard 1954, 51).

During the preliminary analysis of the materials, three tempers stood out in the assemblage, some of which can reveal a local preparation of the ceramic paste. While these will not take a central place in the interpretation of the material, it will be interesting for further research into correlations between pastes and forming techniques, to note the presence or absence of these tempers. Categories for calcareous temper, grog temper and volcanic ash temper were created. While in the case of volcanic ash temper there is no way to confirm a volcanic origin without compositional analysis, the suspected presence will still be taken into account as reflective of the highly volcanic environment of the Gulf of Fonseca. Calcareous temper also holds a particular position

amongst tempers as calcareous soils do not occur in the region of Honduras surrounding the Gulf of Fonseca, which indicates that the material could have been imported, or that calcareous deposits were being washed down from inlands in the estuaries. In both cases, this aspect proves important as it reflects human relationships with the environment.

5.4 Identifying Communities of Practice

Concretely, when we are looking at *communities of practices,* we are looking for signs of cultural transmission in the archaeological record and how the latter reflects common collective learning and operational practice traditions within a group of craft-practitioners. In terms of pottery, we are looking at craft-related knowledge as protected and only transferred within a community of practice. Wendrich (2016, 6) outlines five questions as part of the archaeological approach to communities of practice:

1. *What can a person master what is the human potential for learning?*
2. *How does a person learn what is the apprenticeship process?*
3. *Who is teaching what is the apprentice-tutor relation?*
4. *What is the result of learning what types of knowledge can we discern?*
5. *Why does a person learn what is the objective of the apprenticeship? (Wenger 2016, 6-7)*

While all are relevant question to ask, especially in an ethnographic study, out of these five questions the fourth one would be the only one recognizable in an archaeological assemblage. Wendrich (2016) further identifies the bases of craft knowledge amongst other as (1) knowledge of the properties of the raw materials, (2) knowledge of the adequate use of tools, (3) understanding the end product (i.e. the conceptualization process), (4) knowledge of how to obtain the desired decorative patterns. To directly observe apprenticeship processes in our assemblages, it is important to question what can go wrong as a consequence of this lack of knowledge: this means that, as archaeologists, we must have an understanding of the *standard* product that what wished to be able to identify variations or outliers. Unfortunately, such outliers are not always identifiable in our assemblages, especially the in small assemblages like the one which is described throughout this thesis. In these cases, we can discuss *communities of practice* in terms of the perpetuating of a ceramic tradition, "micro-styles linked to specific apprenticeship procedures" (Dietler and Herbich 1998).

Typologies can be useful tools in defining standards and identifying different communities of practice active through the Gulf region and within one settlement. Through the comparison of the operational sequence of sherds belonging to the same type -and

therefore conforming to a standard of general aesthetic appearance-, it is possible to observe the variations in the production of a conceptualized final product. These variations, representing differences in learned gestures, will help delimit communities of practice producing the same ceramic style within a settlement or a region.

5.5 Describing and making sense of qualitative data

The options to analyze data statistically vary greatly according to the nature of the data collected. There were two sets of data collected as part of this thesis: the data to build the descriptive catalogue and the data associated with the analysis of the selected technological markers. The first dataset aimed to describe the data, and there was a need for statistical tools to visually present the assemblages. These assemblages' descriptions per site, as well as specific attributes, were later to be compared to understand how assemblages related to each other. The second data set was made up of qualitative data. That data was to be used to investigate technological similarities between assemblages.

5.5.1 Frequency Tables and Bar Charts

The nature of the data from the catalogue was a mixture of categorical (discrete) variables and of quantitative (continuous) variables. As the goal of this catalogue was just to present the data, frequency tables and bar charts were used to represent both kinds of data. To this end, the qualitative data was to be transformed into nominal data in order to assign a count of objects to each category. As the data set was small enough it allowed for a manual count of objects per category.

Beyond general description of the assemblages, frequency tables and bar charts were used to represent data related to vessel shapes, wall profiles, lip shapes, rim profiles, diameter measurements, wall thickness and temper use. Frequency tables and bar charts are recognized as "the most effective ways of organizing and describing qualitative data" in and outside archaeology (Bishop 2015, 59).

Frequency tables represent how often an object or event appears within a fixed dataset. In the case of archaeological ceramics, these frequencies gain relevance by being represented relative to the rest of the dataset as a percentage (Bishop 2015, 59). They are particularly useful when comparing populations of several categories, and are therefore a good means to compare data between the three sites. Frequency distribution is sometimes better observable in bar charts, which allows a more visual representation.

Plotting the data in bar charts allows comparing the variation of one or several related categories over the three sites.

5.5.2 Cluster Analysis

The nature of the data from the analysis of technological markers was exclusively categorical data. To put into evidence the similarities between different assemblages, I opted for a cluster analysis. Cluster has a long history of use in anthropology. Used since the early 20th century, it has since then gone in and out of fashion. Clusters have mostly been used to create taxonomies, the aim being to group by "objective" means. They are today mainly used in archaeological sciences with quantitative data.

The relevance of cluster analysis heavily relies on the data that it is applied to. It has been used in the past to create artefact typologies. Little has however been done in matters of clustering of purely technological attributes. The statistical clustering seemed the most appropriate to take into consideration several categories of variables for one same sherd and group it accordingly.

Cluster analysis is one of the best-known approaches to multivariate analysis in archaeology, and provides evidence of a "structure in the relationship among cases characterized by a number of variables" (Drennan 2009, 309). It allows dealing with complex variability. In the present study, the "cases" are the sherds. Foremost, clustering aims to put forward similarities instead of differences between datasets. This is made by measuring the similarities between the different sherds and using agglomerative techniques according to the selected clustering criteria (Drennan 2009, 310).

For this analysis, I selected two-step clustering using SPSS, an autoclustering statistics method. This required turning the collected categorical data into nominal variables by attributing a numbers to each possible variable by category. The most relevant categories were later selected as clustering variables.

Two-step is a method whose results are comparable with the combining of hierarchical clustering and *k*-means. It is favorable as it only requires one pass with data, allowing the user to experiment with clustering categories and variables easily. It is especially favorable when the goal is to generate clusters instead of assigning samples to pre-defined clusters. It is often recommended to handle all large data samples. While it allows for the generating of a mathematically ideal number of clusters, it is possible to create a fix number of cluster. I opted for the latter, as I aimed for a more homogenous

cluster composition. To explore the distance measured between objects and to create a proximity matrix with categorical data, two-step clustering uses log-likelihood. Two-step clustering is generally recommended for datasets combining discrete and continuous data; it is however also fitted to explore purely categorical data. In the latter case, it works best if these variables have a multinomial distribution. Two-step clustering is a favorable method as it can produce useful results even with data that does not behave as expected.

For this two-step clustering analysis, I opted for four cluster membership variables for body sherds, and three predictors for lip sherds. In this selection, the "swamping variables" (generally binary variables) were avoided or put lower in the hierarchy. These swamping variables can be used as "cluster descriptors": in this case, they are not used as clustering variable but can still be observed in relationship to the established clusters. The Schwarz Bayesian Criterion (BIC) was used as clustering criterion. The output presents the quality of cluster, a table assigning the cases to cluster memberships, a cluster size pie chart and a bar chart indicating the importance of the predictors in the creation of clusters (Appendix A).

6 The Ceramics of the Gulf of Fonseca: Analysis and Results

6.1 The Ceramic Assemblage

6.1.1 Generalities

Of the 746 sherds that were at my disposal, 258 sherds were selected for further analysis. These 258 were chosen because they could still be tied to one of the case studies sites. Out of these 258 sherds, 65 sherds (1152.8g) could be tied to La Danta, 133 (4053g) to El Espino and 60 (2344.6g) to Monte Libano. Still, it is remains difficult to identify these sherds' corresponding stratigraphic layer. Assemblage sherd composition can be observed in Table 5. The relatively low frequency of base sherds explains why their technological features were not taken into account as a separate section in the technological analysis. The body sherds, in regards to weight, constitute a large part of the assemblages: 25.4% at La Danta, 26.4% at El Espino and 35.3% at Monte Libano. This explains the heavy focus of the technological analysis on surface treatment and finish. While normally sherds under 5cm length are eliminated from the assemblage before analysis, this was not an option for this particular narrow assemblage. In fact, at La Danta, sherds less than 5cm represent 53.8% of the total number of sherds, while at El Espino, they represent 47.4% of the assemblage and at Monte Libano, 31.6% of the assemblage.

Table 5- Vessel parts as represented in the assemblages (table by author).

	La Danta		El Espino		Monte Libano	
	Nb. of sherds	% of assemblage	Nb. of sherds	% of assemblage	Nb. of sherds	% of assemblage
Rims	24	36.9	50	37.6	27	45
Bases	5	7.7	19	14.3	4	6.7
Body	29	44.6	55	41.3	25	41.7
Ind. Appendage	7	10.8	7	5.3	1	1.7
Other	1	1.5	2	1.5	1	1.7

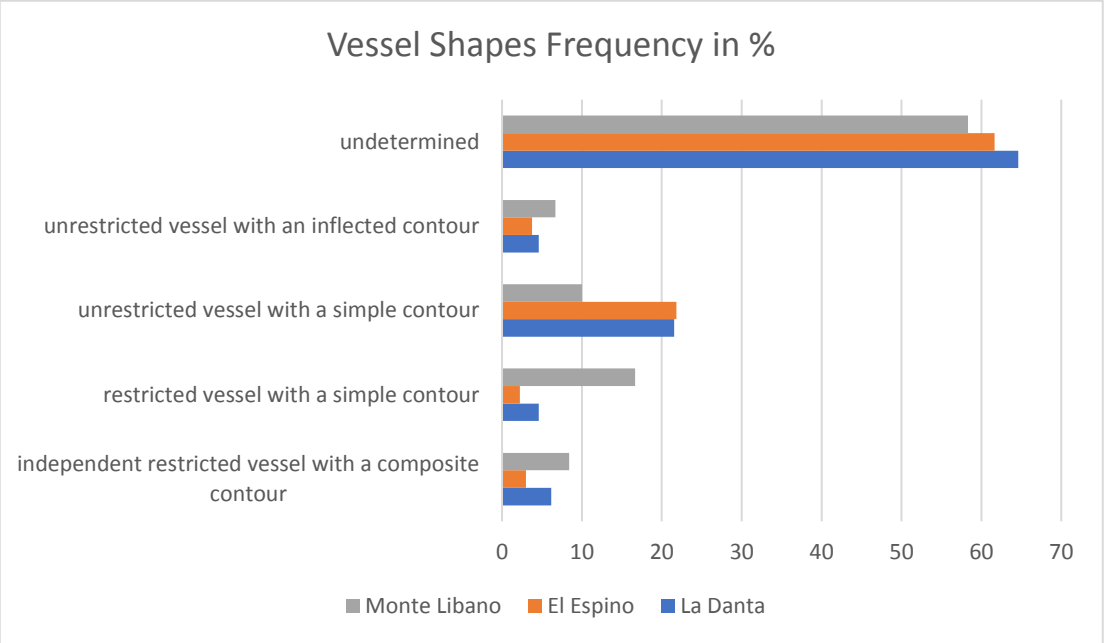
6.1.2 Vessel Shapes

While the vessel shape designations used in this section are adopted from the Leiden Codebook for Ceramics (Hofman 1993), they do not correspond to the Insular Caribbean vessel shapes used as examples in the codebook. The same holds true for the wall and rim profiles, which are different in the ceramics from the Gulf of Fonseca. It is to be

noted, for example, that in this case unrestricted vessels with simple contours can also correspond to cylinders.

Due to the size of the sherd—and to the small amount of rim sherds—in many cases, it was not possible to determine the nature of the vessel shape, as seen by the high percentages of "undetermined" (tab. 6). Vessel shapes present at all three sites are: independent restricted vessel with composite contour, restricted vessel with simple contour and unrestricted vessel with simple contour.

Table 6- Bar chart of vessel shapes frequencies in the different assemblages (table by author).



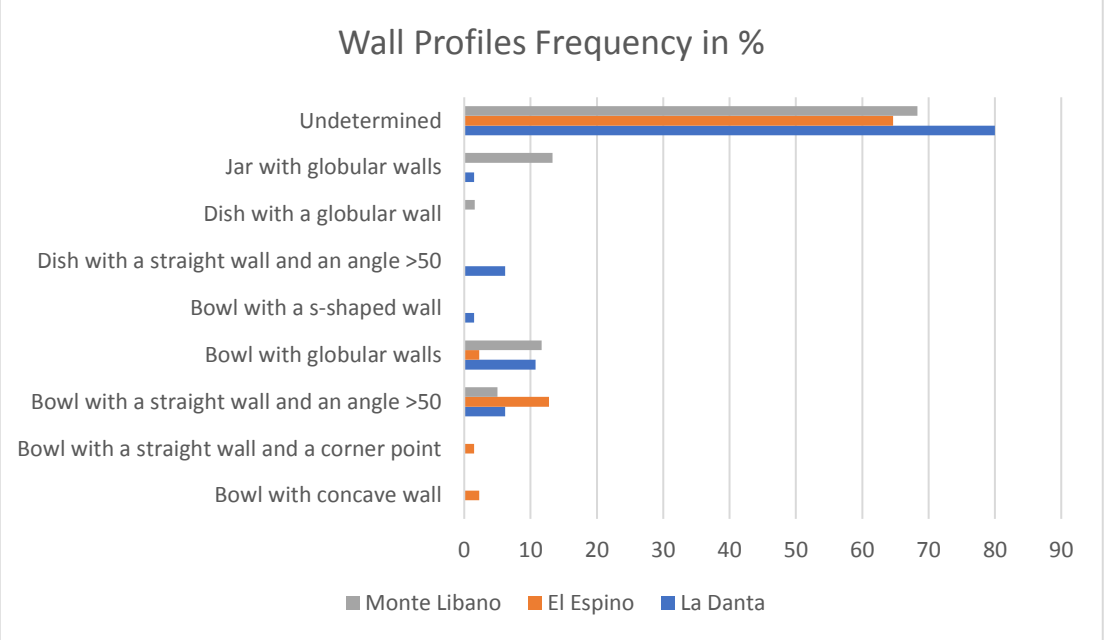
The independent restricted vessel with a composite contour may also include specimens from the independent restricted vessel with an inflected contour category. Yet, because of the small sizes of the sherds, the difference could not be made in the documentation. In the sites with more similar chronologies (La Danta and El Espino), there are similarities between presence of certain vessel shapes. It would seem, in particular, that unrestricted vessels with simple contour rise in popularity at these sites (Appendix B).

6.1.3 Wall Profiles

Wall profiles can prove difficult to extrapolate from small-sized sherds, and this section therefore also shows a higher number of "undetermined." The criteria for splitting our sample between bowls, jars and dishes are borrowed from the Codebook: dishes have a height/diameter ration less than 0.30, bowls a height/diameter ratio between 0.30 and

0.50, and jars have a ratio over 0.50 (Hofman 1993). The manifestations of wall profile shapes also vary widely in the assemblage (tab. 7). Two types of wall profiles therefore needed to be included in this category: bowls and dishes with globular walls. These types, in fact, necessitate separating from the standard descriptions; they are widespread in the Gulf of Fonseca but are not included in the standard profiles for Caribbean ceramics. It is noteworthy to consider that the group "bowl with straight walls and corner points" also includes cylinders, which seem widespread at El Espino, and that the group "bowl with globular walls" also includes colanders (Bichin Perforated from La Danta). Additionally, the groups "jar with a globular wall and a curved neck" and "jar with a globular wall and a corner point" were merged into one group "jar with a globular wall," as the difference between both groups did not strongly appear in the assemblage.

Table 7- Bar chart representing wall profile frequencies in the different assemblages (table by author).

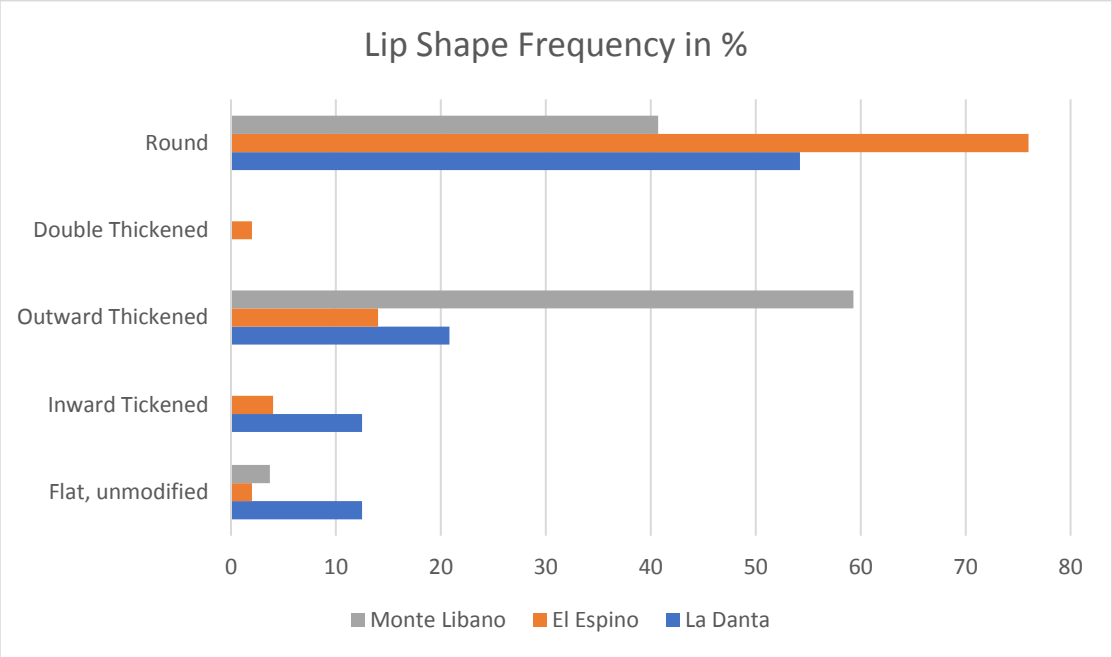


From the percentages associated with wall profiles from this assemblage, the differences between the three sites appear clearly. In fact, "bowl with a straight wall and an angle >50" and "bowl with globular walls" are the only wall profiles that all three sites have in common. These wall profiles seem to be associated with local phenomena, possibly indicating differences in food ways or site function. El Espino, for example, only shows wall profiles associated with bowls.

6.1.4 Lip Shape

The lip shapes are a prime indicator for variations within the operational sequence, and will therefore be elaborated on in the second part of this chapter. As some sites show great diversity in lip shape—creating an unrepresentative statistical overview—for this section, I decided to follow the main groups proposed by the Leiden Codebook for ceramics (Hofman 1993), instead of splitting the already small assemblage into the subgroups. The percentages calculated for this part will be calculated from the available rims instead of the vessels: 24 for La Danta, 50 for El Espino and 27 for Monte Libano. Here, too, the lip shapes manifest slightly differently in the assemblage as they are illustrated in the Leiden Codebook (Appendix B). The different categories will be: double thickened, flat unmodified, inward thickened, outward thickened and round.

Table 8- Bar chart of lip shapes frequencies in the different assemblages (table by author).

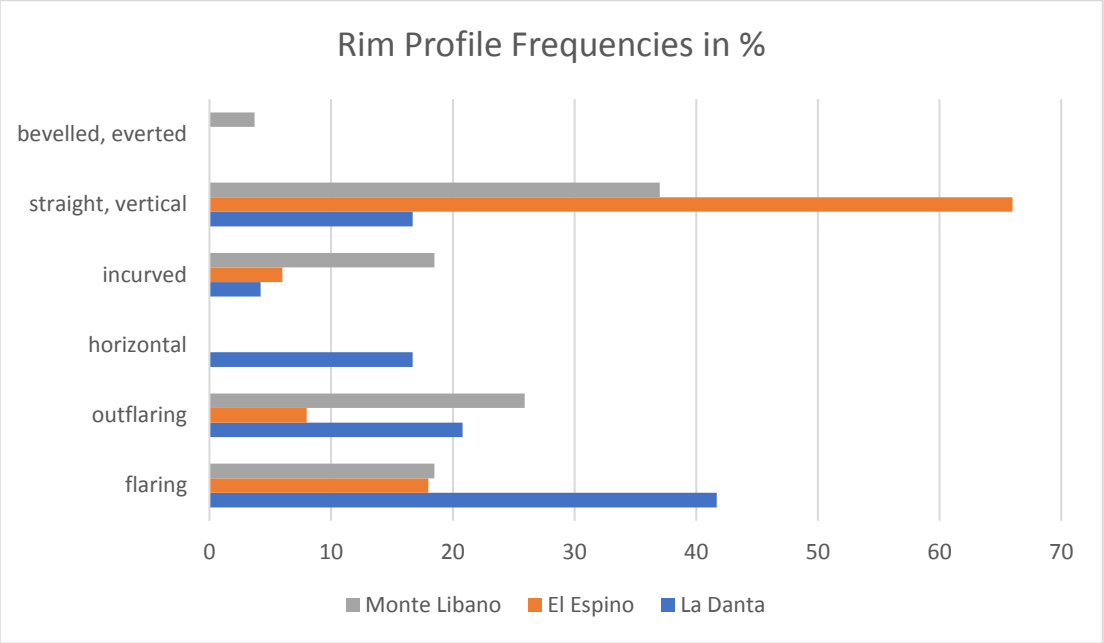


The significant differences shown in the lip shape frequencies are a good indicator for the different vessel shapes used at every site, but also every associated lip forming technique (tab. 8). The round lip shape seems most popular over the three sites. It is also the category showing the most technological internal variation, notably within tapering techniques. This shape corresponds with the simple technique of adding an extra coil of the same thickness as the ones used for the body construction to finish off the vessel.

6.1.5 Rim Profile

Like the lip shapes, the rim profile can be used to infer technological choices. For example, outflaring rims will usually need a support coil in order to stay attached to the vessel, while beveling can indicate a folding technique of the lip. The "straight, vertical group" is mostly associated with the "round" or "flat unmodified" lip shape, as seen above. While this group is the most popular at El Espino and Monte Libano, "flaring" rims are the most popular at La Danta. Additionally, Monte Libano shows the greatest diversity in rim profiles, as well as in lip construction (tab. 9).

Table 9- Bar chart of rim profiles frequencies in the different assemblages (table by author).



6.1.6 Type diversity

While the frequency of certain types in the assemblages does not have statistical significance because of the lack of sampling method, it is still of interest to observe the degree of diversity of ceramic production. The typology that will be used here is the one developed by Baudez, as illustrated in Appendix C.

The overlap between these sites is weak: El Espino and La Danta only share the sporadic presence of Tohil Plumbate, a probable import ware, as it is only represented by a few sherds for both excavations (Baudez, unpublished manuscript). Corresponding to Monte Libano's later period of occupation, El Espino and Monte Libano share a few types: Calicanto polychrome, Chiri, and Muerdalo (tab. 10).

Table 10- Typological composition of the assemblages, represented in number of sherd per type (table by author).

La Danta		El Espino		Monte Libano	
2	Bichin	11	Calicanto	4	Auriga
10	Cacaulito	4	Chiri	4	Calicanto
8	Catracho	10	Corcovado	3	Chepito
5	Chichunte	4	Coyota	5	Chri
3	Hicacos	3	Dragon Café	8	Estrella Ondulé
2	Jocomico	11	Guandique	3	Geronimo
5	Marcovia	17	Guatales	1	Goyo
1	Monjaras	5	Hydra Rojo	4	Muerdalo
1	Papaya	15	Langues	6	Namasigue
14	Pataste	1	Monjaras	8	Orion Rojo
1	Pupusa	1	Muerdalo	2	Palmerola
1	Tohil Plumbate	9	Nagarejo	8	Toalla
1	Tolondron	23	Papalon	1	Triunfo
5	Vallejo	1	Tohil Plumbate	2	Ubaldo
6	Undetermined	4	Tular Polychrome	1	Undetermined
		13	Undetermined		

6.1.7 Diameter and Wall Thickness

Diameter and wall thickness arguably depend on vessel size and function. Yet, it can also indicate differences in food ways at the different sites, or even indicate a particular function from the site area excavated. In general, larger diameters may correspond to utilitarian wares, such as cooking pots or storage jars. The variation in vessel size can also inform on the kind of skill needed to make the pots (tab. 11).

Table 11- Frequency of vessels diameters in the different assemblages (table by author).

	La Danta	El Espino	Monte Libano
10<...≤15	54.2%	8%	11.1%
15<...≤20	20.8%	30%	25.9%
20<...≤25	12.5%	24%	18.5%
25<...≤30	0%	12%	11.1%

30<…≤35	0%	2%	7.4%
undetermined	8.3%	20%	22.2%

Thicker vessels walls may sometimes be used to determine the overall size of the vessel, as larger storage jars will need thicker walls in order not to collapse on themselves. Yes, thickness can depend on many other variable: the pots may, for example, be subjected to repeated heat exposures (as a cooking pot would) and thicker coarser walls may help prevent cracking as well as a stronger control over the content (for example, food). The comparison of the data in both tables allows the observation that the percentage of low wall thickness (<5mm) can be matched up with small vessel diameters (tab. 12). Of course, it is important to consider that the both tables cannot be matched one to one, as the first table is based on percentages out of the rims, while the second one contains percentages calculated out of the total of the sherds. The part of the sherds where the measurement was made may also play a certain role in the overall thickness measured. As for the diameter, it is important to keep in mind that, with restricted neck and globular wall types, there is no certain way to extrapolate the size of the vessels from the rim diameter.

Table 12- Wall Thickness frequencies in the different assemblages (table by author).

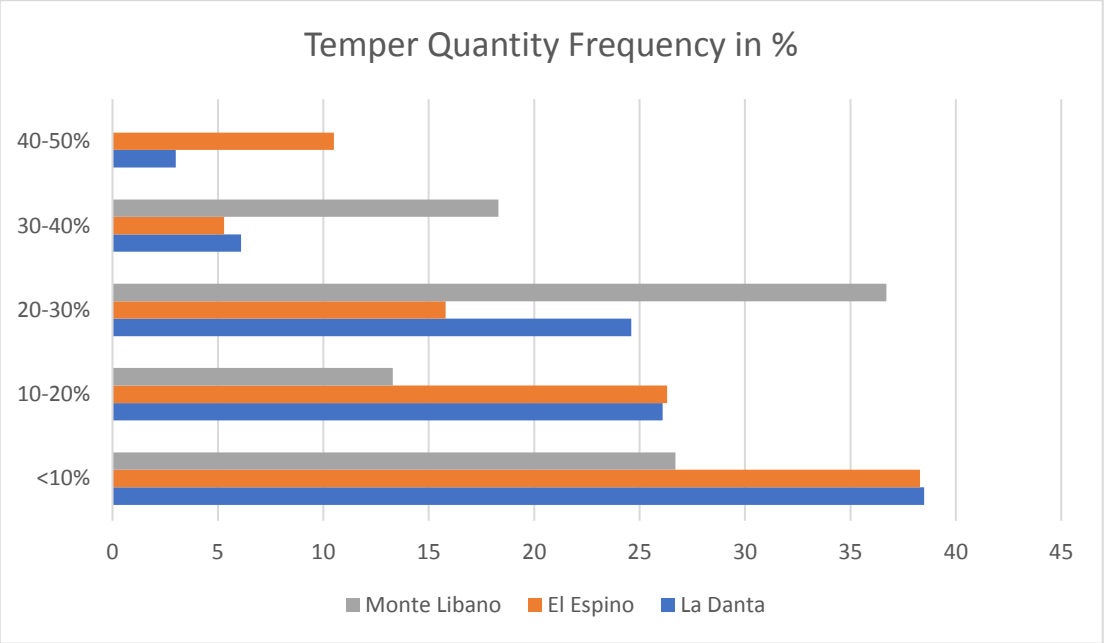
	La Danta	El Espino	Monte Libano
≤5mm	50%	48.1%	20%
5<…≤10mm	50%	48.9%	70%
≥10mm	0%	3%	10%

The average rim diameter is 15.28cm for La Danta, 20.89cm for El Espino and 21.65cm for Monte Libano. The average wall thickness is 6mm for La Danta, 5.43 for El Espino and 7mm for Monte Libano. Generally, in these assemblages, smaller-sized vessels are associated with thinner walls. It is noteworthy to observe that, while Monte Libano and El Espino show a regular distribution within different size vessels, more than half of La Danta's assemblage is constituted of small diameters. Yet, as for the other categories presented in this section, it is possible that the sample is not representative of the quantities collected at the sites: in fact, in the 1960s, sampling strategies were biased towards polychromes.

6.1.8 Amount of Temper

The amount of temper present in the paste can equally contribute to the understanding of vessel function and size. Sometimes used to prevent shrinkage during the drying process, sometimes used to prevent cracking during the firing process or later heat stress episodes, temper (or lack thereof) can be useful characteristic to look at in pottery analysis. Yet, it can also be seen as a technological choice: the temper present does not necessarily serve a purpose, but can be anchored in a traditional way of doing.

Table 13- Bar chart of temper quantity frequency in the different assemblages (table by author).



From this table (tab. 13), we can observe that, while Monte Libano has on average a rather high frequency in coarse pastes, El Espino and La Danta have coarser ceramics in lower frequencies. Because fine paste (<10% temper) ceramics are widespread at both sites, it is possible to consider the coarser paste ceramics as utilitarian, and the practice as therefore related to function. At Monte Libano, where the frequency of temper can vary widely, the coarseness of the paste cannot be linked, in my opinion, exclusively to vessel function.

6.2 Technological Analysis

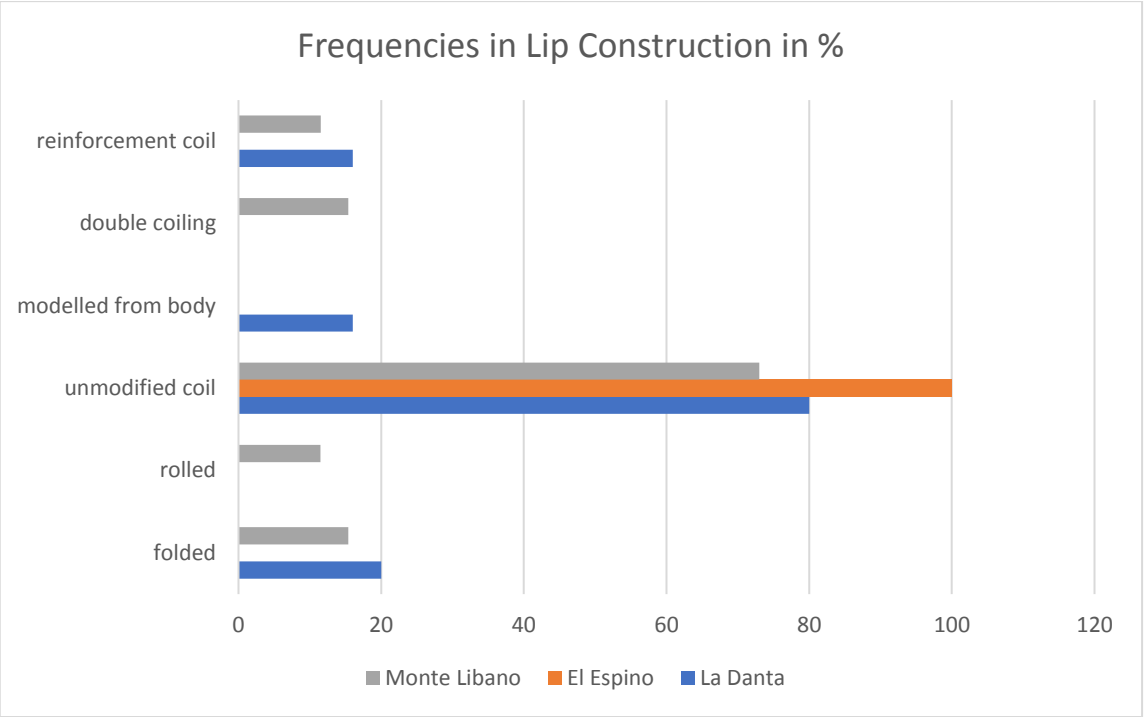
For the technological analysis, not all sherds from on given assemblage were selected. Instead, I focused on those that showed the most pronounced signs of certain potting

techniques. Therefore, sherds that were considered to small were eliminated from the analysis. Furthermore, a consequent part of the assemblage of El Espino was ceramic waste: while interesting for considerations on production sites, the ceramic waste obviously represents flawed constructions and attempts. As this thesis aims to define technological traditions, shared repertoires, and standards for each site, I decided not to take into account unsuccessful creations. For El Espino, 109 sherds were selected for further analysis, including 31 rims. For La Danta, 52 sherds were selected, amongst which 25 rims. Finally, for Monte Libano, 51 sherds were selected, of which 26 rims were analyzed. Originally, the forming technique of the body was going to be the focus in this research. Yet, after examination of the sherds, we were able to observe that most of the assemblage showed coiling marks, and that the rest, tagged as "unidentified", was highly probably resulting from coiling as well (Loe Jacobs, personal communication).

6.2.1 Lip Construction

As discussed in the previous part of this chapter, lip construction can be inferred from lip shapes and rim profiles. In coiled vessels—which our assemblage is probably composed exclusively of—there are several ways to construct a lip shape: folding, rolling, modelling from the body mass, and double coiling. The most frequent technique is simply to finish off the rim with one single coil, which can be left bigger than the others or worked and flattened to not stand out from the rest of the vessel; this category is called coiling unmodified (tab. 14). Finally, in flaring or outflaring rims, it is possible to have a reinforcement coil to strengthen the construction. This will be taken into account as a category as well.

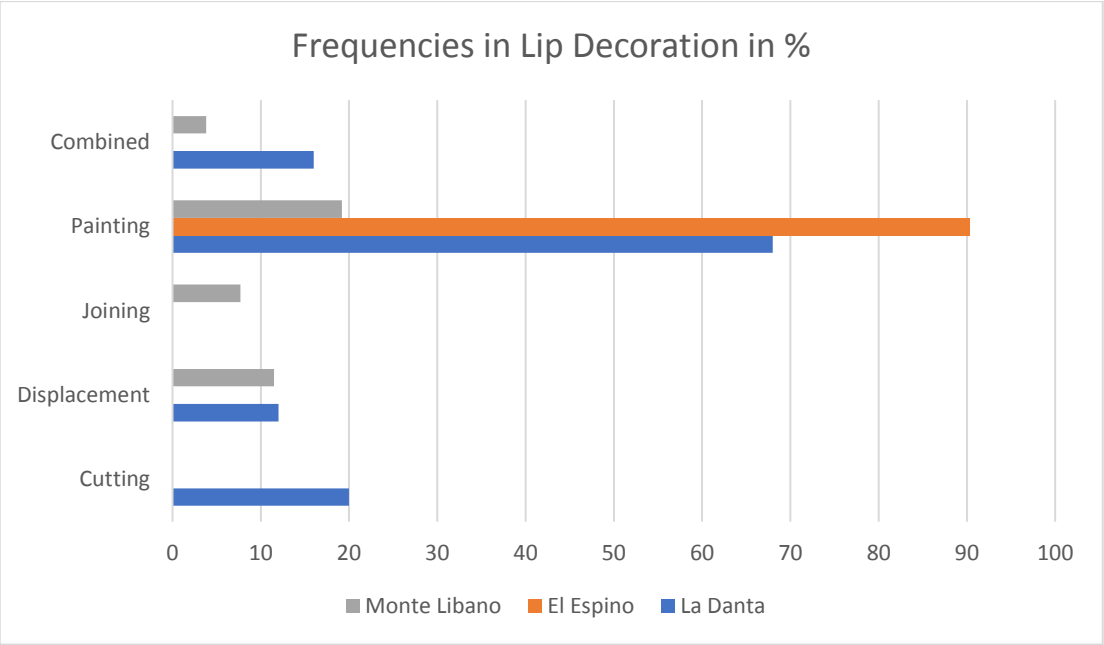
Table 14- Bar chart representing frequencies of lip construction in the different assemblages (table by author).



As can be observed in Table 15, less variation can be seen in construction techniques than in lip shapes, which means that the same technique can show a high variety in results. While El Espino shows no variation in forming techniques, the two other sites show diversity. In fact, Monte Libano, which was showing little variation in lip shape except for variation taper in the rounded shapes, shows greater diversity in this mode of analysis. These results may indicate that one technique can have different results, and that, vice-versa, different techniques can have similar results.

In lip construction, it is also possible to observe differences in decorating. To make the clustering of results easier, I decided, to group plastic decoration techniques under "cutting technique," "joining technique," and "displacement technique". Additionally, painting will be considered a decoration for the purpose of this analysis. Finally, the label "combined" indicates the combination of two or more types of decoration.

Table 15- Frequency in Lip Decoration in the different assemblages (table by author)

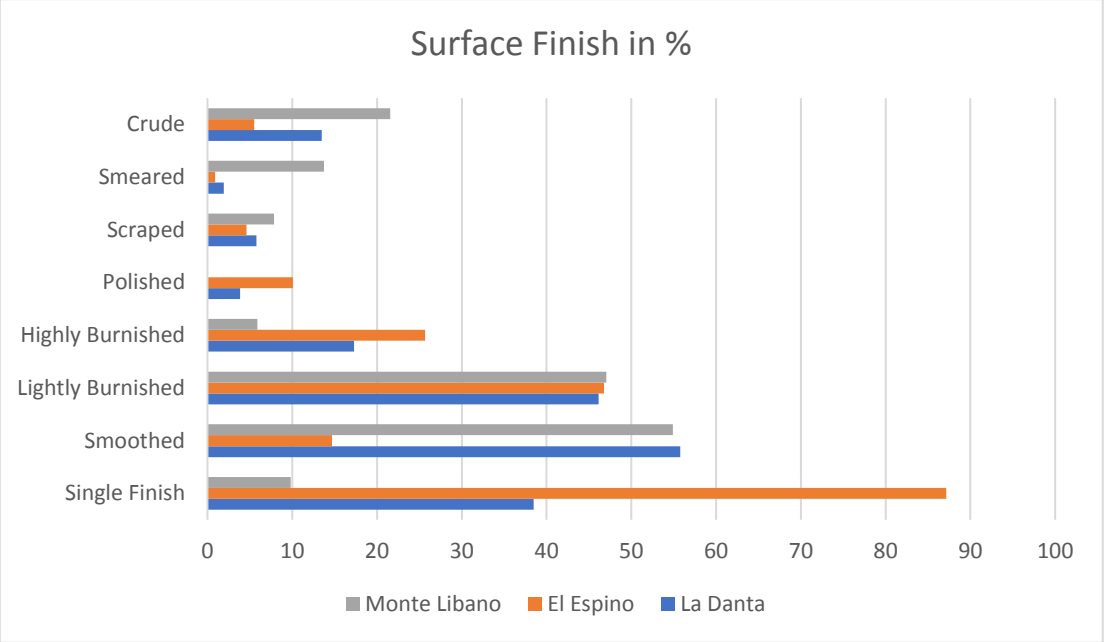


In this case as well, there seems to be a strongly defined standard at El Espino. Because of the small amount of decorated lips (18 sherds at La Danta and 9 sherds at Monte Libano), the obtained result may not be statistically significant. Yet, at Monte Libano, the results reveal a strong local taste for plastic decoration.

6.2.2 Surface Finish and Surface Treatment

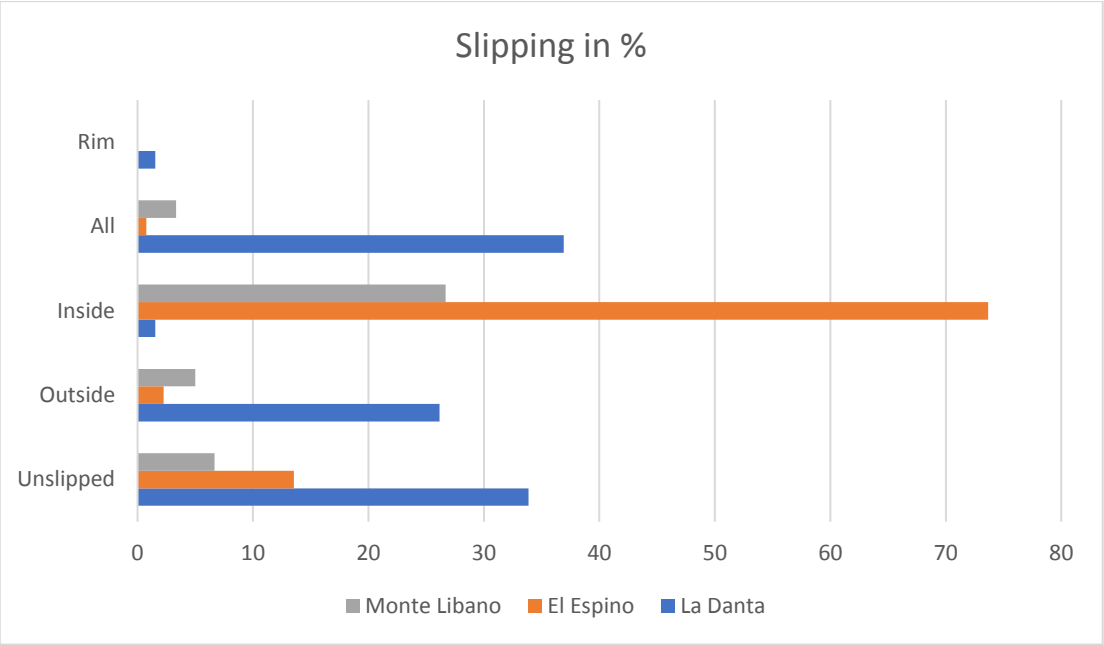
The percentages for surface finish were calculated for the total of selected body sherds. As previously discussed in the methods chapter, surface finish can sometimes be difficult to assess: in most cases, several surface finishes are used subsequently on one side of the vessel, each hiding the marks left by the previous one. This is especially in the case of scraping, which is used to even the surface and remove superfluous amounts of clay. In most cases, this step is later followed by smoothing or burnishing the surface, eliminating the ridges left by scraping. Therefore, it is possible that the percentages presented hereafter are underrepresenting the use of the technique. Slipping or washing, as surface treatments, also obscure the visibility of surface finishing techniques; slipping can make a surface appear smooth without any previous surface finishing. In some cases, surface finishing can be applied on top of the slip, leaving diagnostic burnishing lines on the vessel. While the surface finish on most sherds vary between the inner and outer surface of the vessel, some may show different surface finishes on different parts of the body or successive surface finishes on the same part. Therefore, a single surface finish is rare amongst the sherds of the assemblage.

Table 16- Frequency of Surface Finishes in the different assemblages (table by author).



The rarity of single finishes does not seem to be fully represented in the frequency analysis (tab. 16). While single finishes seem to be widespread at El Espino, this percentage is not representative. In fact, at El Espino—with the highest rate of slipped ceramics—all previous finishing steps were obscured by the surface treatment. The percentages of single finishes are slightly more representative at Monte Libano and La Danta. The surface treatment equally widespread at all sites is a light burnishing, which can occur to several degrees, and is standard for ceramics with slips or wash. Surfaces left untreated or crude is common not only at Monte Libano, where high amounts of utilitarian wares were found, but also at La Danta, on the inside surface of restricted vessels. Inside or outside surface of vessels can also be smoothed as a way to reduce permeability of the material. At Monte Libano, smearing is often associated with plastic decorations, in particular apparent coiling with digital impressions (in the case of Estrella Ondulé). Polishing is rare at La Danta, inexistent at Monte Libano, and yet is present in larger quantities in El Espino. Polishing is, at Monte Libano, associated with slipped ceramics such as Ulúa polychromes. Tohil Plumbate was also counted within the polished sherds, even though the polishing technique may slightly differ. Finally, it is possible to observe the high diversity in surface treatment from site to site.

Table 17- Frequency of Slipping in the different assemblages (table by author).



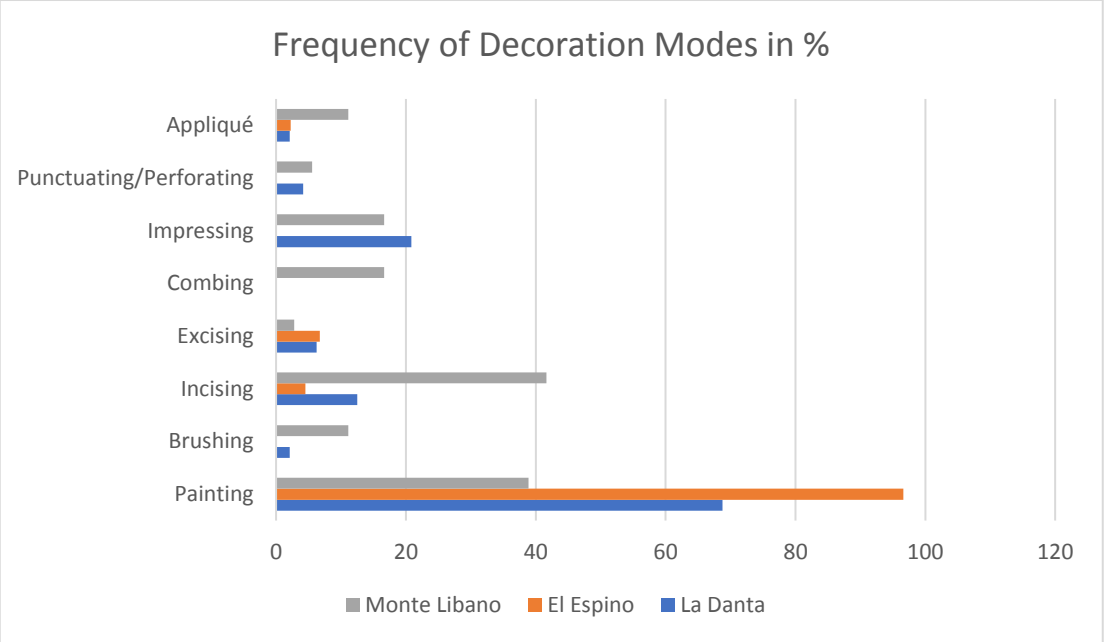
The location of the slipping that was observed depended on the vessel shapes: at El Espino and Monte Libano, slipping or washing mostly occurred on the inside of the vessels, as most slipped vessels were open shapes (tab. 17). At La Danta, most slipped vessel were bowls, where slipping occurred on the entire vessel. The slipping of the rim is rarely exclusive, and corresponds in a majority of cases to the extension of the slipping zone of one surface (outside and inside) to the other. Ceramics from El Espino are the only ones in the full assemblage to exhibit double slipping (either orange on white or orange on orange). In some cases, the second slip layer is replaced by a thin orange wash. As in the surface treatment, the presence of slipping seems to be somewhat related to the function of the vessel: while at Monte Libano, slipping is entirely absent from utilitarian wares, while at El Espino and La Danta slipping can be found on the outside surface of some large jars. In this context, the slipping could have been used to reduce porosity or permeability of the vessels.

6.2.3 Decoration

Decoration modes show the most variability of any characteristic in the assemblage (tab. 18). The combining of different modes will be discussed later on in this chapter. To reflect the high variation in the production techniques and the associated toolkit, the plastic decorations were subdivided further than cutting, impressing and joining into: appliqué; punctuating and perforating; impressing; combing; excising; incising; and brushing. Impressing was originally separated into digital impressing and impressing with tools, but the two categories were later merged into one to make it statistically representative.

Finally, painting decoration, occurring either in zoning, bands, or figurative representations, remains one of the most represented modes of decorations.

Table 18- Frequency of Decoration Modes in the different assemblages (table by author).



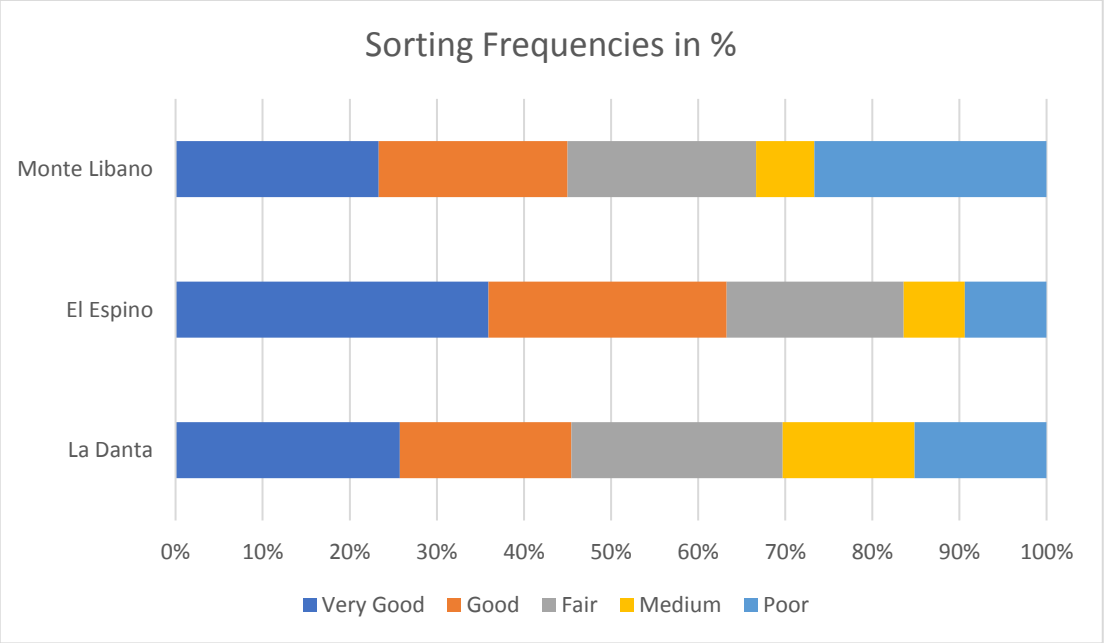
As previously observed in lip decoration, Monte Libano exhibits a ceramic tradition most closely associated with plastic decoration. In particular displacement and cutting techniques seem to be popular for the decoration of body sherds, with a higher frequency than at other sites for joining techniques such as appliqué. While frequencies in painting decoration at La Danta are significantly higher than Monte Libano, at La Danta, painting is often combined with plastic decorations. Decorations can often alternate between plastic and painting (e.g. through zoning), be superimposed (e.g. incising on paint), or one type of decoration can be reserved for one surface of the vessel, and the other to the second. At Monte Libano, the combination between the two is rarer, and decoration that is exclusively plastic the most popular. At El Espino, plastic decorations are generally rare, except for vessel supports that were excluded from this analysis. Incising and excising exists at this site with more variation than at other sites, as these techniques are also applied on dried or fired vessels post-slipping.

6.2.4 Sorting

As discussed in the methods chapter, sorting can represent a functional choice associated with vessel use, or can be considered as technological choice of the potter. Sorting generally reflects an extra step in the operational sequence, as good sorting implies

either the very fine grinding of temper or the elimination of natural inclusions through separation processes. On the other hand, poor sorting is associated with coarser pastes and more irregularity in the grinding of the paste and temper. Yet, irregular sorting can also be discussed in terms of intended effect to create an irregular surface. Furthermore, in cases of slipping, improving the sorting of the temper to obtain a smooth surface is no longer necessary, as irregular surface are smoothed by the application of the slip itself.

Table 19- Sorting frequencies in the different assemblages (table by author).



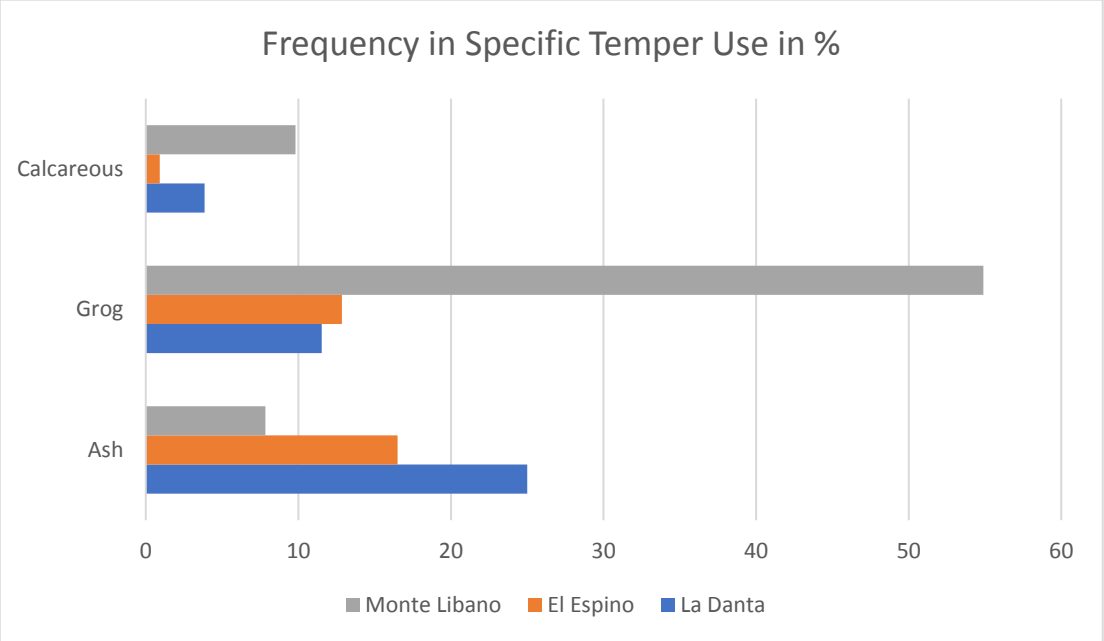
The diagram shows that, even though there are slight differences, the sorting at the site remains consistent (tab. 19). The presence of higher rates of better sorting at El Espino is representative of the amount of fine paste polychrome found at the sites. In contrast, the higher rates of more poorly-sorted ceramics encountered at La Danta and Monte Libano reflect the higher number of utilitarian wares found at these sites. Yet, there are cases at La Danta of slipped polychromes exhibiting poor sorting, and case at Monte Libano of very well-sorted utilitarian wares. Yet, the results of this category do not exhibit a high degree of difference between sites, and can therefore be disregarded in the construction of technological groups.

6.2.5 Use of Grog, Ash, or Calcareous Temper

The use of a specific temper can, on the other hand, be more informative on technological choices. In fact, while temper can be interpreted functionally, different kinds of temper can be used to achieve the same function. Fiber temper, for example, is

popular in the Gulf of Fonseca on fine Segovias and Usulután pastes to prevent microcracks from spreading during the firing process. Grog temper and calcareous inclusions are mostly used because they do not expand during the firing process, while still stopping the spreading of microcracks. Finally, it is difficult to assess if ash temper is naturally occurring in the clay or added later. Therefore, I am not only considering the addition of the temper as a technological choice, but also the fact that it was not eliminated from the clay before use.

Table 20- Frequency of specific temper use in the different assemblages (table by author).



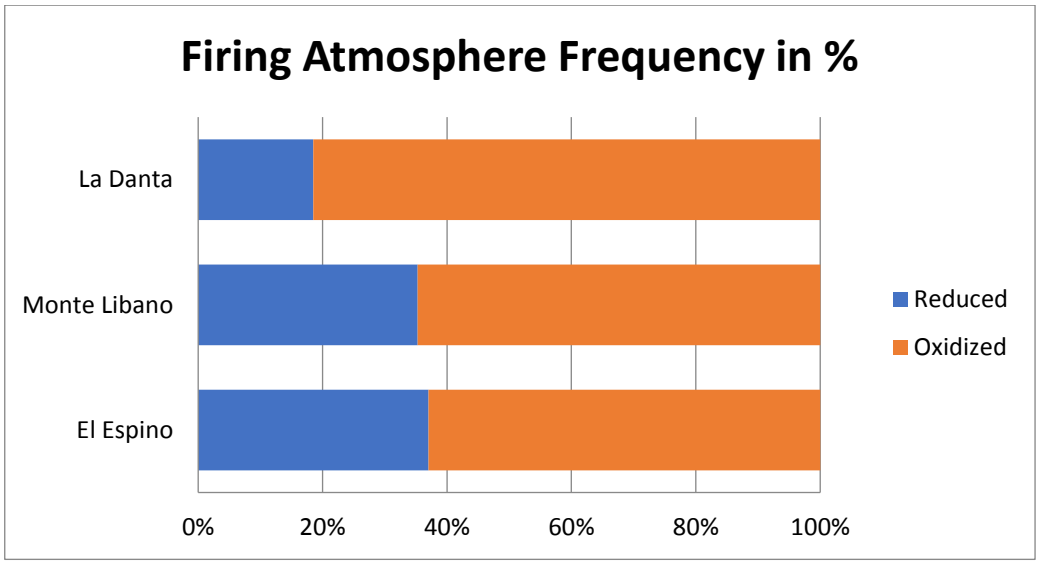
Calcareous temper is present in ceramics from Monte Libano, yet, it is only associated with Usulután type ceramics (Muerdalo), where in other regions (such as Chinandega) fiber temper is generally used. It is difficult to assess if these Usulután type ceramics are produced locally, as their iron-poor paste is uncommon for the region. Additionally, the Honduran side of the Gulf has little natural calcareous occurrences. While it is possible that the calcareous temper was washed down river streams from inland, it is also possible that these ceramics were trade wares. In this case, the above represented results would not be relevant to the current study (tab. 20). The presence of calcareous temper at La Danta seems to be more closely associated with locally produced ceramics. The use of grog temper is widespread at Monte Libano, and is not exclusive to utilitarian vessels with coarse paste. In fact, grog speckles can be identified in fine paste ceramics from this site as well. It seems that the use of grog was an integral part of the pottery production traditional the site of Monte Libano. While grog temper is also used at El Espino, it is

often used in combination with volcanic ash temper; the use of both tempers was exclusive to the two other sites. At El Espino, the use of grog seems to be restricted to coarse paste ceramics and utilitarian use. Ash temper is also popular in El Espino in fine paste ceramics, not combined with grog. That use is similar to what can be found at La Danta, where ash is used (sometimes as a sole temper) in fine paste ceramics associated with the white-slipped tradition (e.g. Las Vegas, Vallejo).

6.2.6 Firing

Firing was taken into account as one attribute that may better represent techniques and communities of practice, as evidenced by certain prior case studies. The firing stage of the ceramic may come as one of the more delicate steps, where particular care is required in order to not render all previous work useless. Controlling the temperature is the most important part to the successful firing of a vessel. This aspect would have proven particularly difficult in a region where open firing and pit firing were the rule. Added risks would have accompanied firing in the case of slipped or painted vessels, where the process had the potential to destroy the carefully applied decorations and surface treatments. Arguably, the difficulty associated with the firing added value to white slipped vessels.

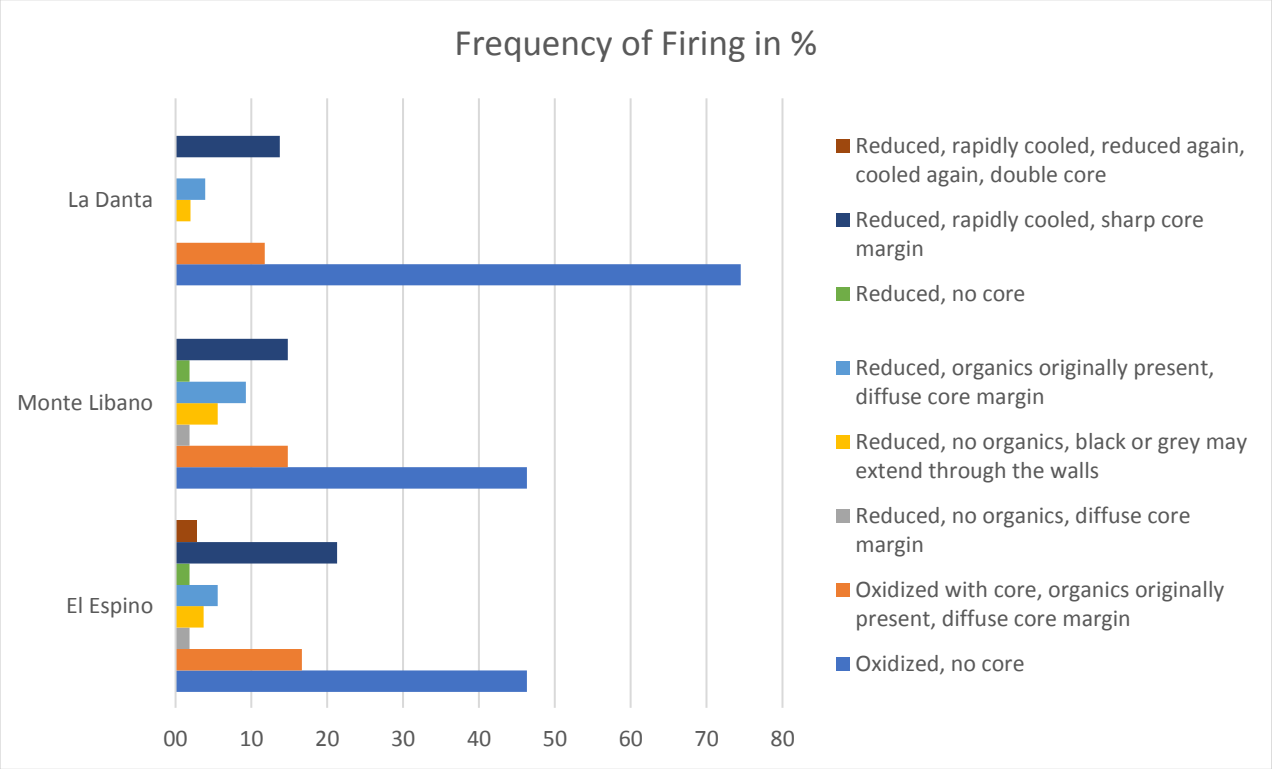
Table 21- Frequency of firing atmospheres in the different assemblages (table by author).



When focusing on the percentages associated with the binary data, opposing oxidizing to reducing atmospheres, it is possible to see that Monte Libano and El Espino share similar ratios (tab. 21). All three cases show a heavy majority of oxidized vessels in relationship to reduced vessels: this is may be linked to the difficulty of creating and controlling a

consistently-reducing atmosphere in an open firing setting. It is easier—while not foolproof—to create such an atmosphere in a pit firing, as it is easier to control and protect from air flow. However, an oxidizing atmosphere cannot be consistently linked to open firing, as well as reducing atmosphere cannot be consistently linked with pit fires. The firing technique that involves building a "teepee" of branches around the pots, can, for example, produce a reducing atmosphere on windless days without the building of a pit (Rye 1981). However, this binary did not contribute to understanding the repartition of the different techniques associated with the stages of firing.

Table 22- Firing Variations in the different assemblages (table by author).



The division into sub-techniques contributes to a better understanding of (1) the clay tempering—especially with organic material—and (2) the different techniques associated with reducing atmospheres. The only site associated with the reducing-rapid cooling-reducing-cooling- sequence is El Espino, where it represents 2.8% of the cases (tab. 22). This technique is associated with possible trade items, and may confirm their foreign origin. The otherwise relative resemblance in ratios between Monte Libano and El Espino may point towards a regionally indigenous potting and firing tradition that stayed consistent throughout time. On the other hand, La Danta exhibits a total absence of the techniques associated with slow reducing with diffuse core margins and of reducing without core. This may point towards a different use of clay, as well as a different potting

tradition from the one observed in the two other sites. However, ratios for the other cooling techniques are comparable to those of Monte Libano and El Espino, while oxidizing remains a large majority. This may indicate preferential use of open air firing at this particular site.

6.3 Technological Groups

Using the data provided by the technological analysis, I used a two-step cluster analysis in SPSS in order to determine clusters. The clusters seemed to show most consistency when using an artificial 8 cluster limit. To obtain these 8 clusters, the data had to be adapted: a numerical value was attributed to each characteristic so that the variables (i.e. surface treatment, slipping, decoration) could be analyzed as categorical variables. The program then informs on the importance of each feature in the clustering process. As the temper appeared to be the most important feature in the clustering process, but is not considered a determining grouping factor in this analysis, it was subsequently first removed as a variable, and added later when the groups were established. Surface treatment was statistically determined as the most important clustering feature, followed by slipping (e.g. unslipped, slipped, and double-slipped), decoration, and post-firing cutting techniques. Finally, I hand-matched every sherd to one of the preliminary clusters constructed with SPSS, considering proximity between some variables that the program could not account for (i.e. highly burnished and polished) as well as to make the clusters more consistent.

6.3.1 Body

6.3.1.1 Cluster 1

Figure 20- Examples of Ceramics from Cluster 1 (outer surface) (pictures by S. Casale).

The first cluster defined by the two-step cluster analysis on SPSS has double-slipping as a determining cluster factor. In most cases, double-slipping is associated with light burnishing, but can also appear on highly burnished specimens (fig. 20). The associated mode of decoration is painting. Additionally, some specimens exhibit a combination of the painting with incising or excising. While there is mostly no post-firing decoration, it

may occur in few isolated cases. No particular temper addition was observed in association with the practice of double-slipping. Once adapted, this cluster only included sherds from El Espino. The types associated with double-slipping are Chiri, Guandique, Calicanto Polychrome, Corcovado Polychrome incised, Guatales, Langues and Papalon. None of these types are exclusively double-slipped, hence the overlap with other clusters. Yet, it is noteworthy to note that these types also appear at La Danta with single slipping. It could therefore be possible to think of double-slipping as a practice localized to El Espino. Some of these specimens also have a difference in slipping according to the surface, where the inner surface is single-slipped and the outside surface double slipped or inverted: in the case of Calicanto polychrome, only a thin slip was identifiable on the outer surface, combined with appliqué decorations, while the inner surface of the outflaring bowl is double-slipped and painted. This cluster is principally associated with oxidizing firing techniques.

6.3.1.2 Cluster 2

Figure 21- Examples of Ceramics from Cluster 2 (outer surface) (pictures by S. Casale)

The second cluster revealed by the clustering analysis is defined by the high burnishing of the sherds. While in the cluster analysis burnishing and polishing are considered separate characteristics, I decided to group highly burnished with polished sherds. Polishing and high burnishing are the result of the same technique, and require the same set of tools, and the final results are similar in appearance (fig. 21). All specimens pertaining to that category have a single slip and are painted. No pre-firing plastic decorations could be attributed to this category; however, 20% of the sherds pertaining to this group exhibit post-firing incision. Sherds belonging to this cluster are frequent at El Espino. In fact, only four specimens in this group come from La Danta, while all the others come from El Espino. The types identified by Baudez that are present in this group are Chiri, Guatales, Corcovado, Langues, Papalon, Guandique, Chichunte and Tular. Some of these types are identical to those found in cluster 1. In fact, it is possible to consider both these clusters as being related, two variations of a same standard: the final appearance of the product does not vary widely but they are produced with different techniques, with the principal

difference being single-slipping versus double-slipping. There are some examples of sherds which would fall halfway between both clusters, with a slip-on-wash or a wash-on-slip. Some specimens of Papalon, for example, have a wash on the inside of the vessel, and the wash covering the same colored slip on the outside. The two main types found in this group are Langues and Papalon. Since Langues corresponds to Santa Rita class Ulúa polychromes and Papalon corresponds -or is closely related- to Las Vegas polychrome, it is not surprising to find them in the same group. In fact, it has been argued that Las Vegas developed from the Tenampua class of Ulúa Polychrome (e.g. Joyce 1987; 2016). The two types appear potentially contemporaneous at El Espino. This cluster represents both oxidizing and reducing firing atmospheres equally.

6.3.1.3 Cluster 3

Figure 22- Examples of Ceramics from Cluster 3 (outer surface, inner surface and rim profile) (pictures by S. Casale)

Cluster 3 is slightly more heterogeneous, as it includes combinations between smoothed or crude inside surface combined with lightly burnished or smoothed outside. The sherds belonging to this cluster all have a single slip, generally applied to the outer surface for restricted neck vessels or to the inner surface in case of bowls and dish shapes. However, they are either undecorated (fig. 22) or unpainted with incising, excising, punctuating, or perforating. None of the specimens in this category exhibits post-firing decoration. The third cluster's heterogeneity is reflected in the incorporation of a large variety of the types identified by Claude Baudez, most of them from El Espino and Monte Libano. The types that appear in this cluster are: Papalon (the only one to overlap with cluster 2), Monjaras, Dragon, Coyote, Hydra, Marcovia, Hicacos, Bichin, Chiri, Calicanto, Chepito, Orion and Muerdalo. This cluster is related to cluster 4 and 6 to a certain extent, where 3

could be considered as the standard, 4 the painted variety, and 6 the plastic decoration variety. While some sherds of Chepito and Hicacos with no plastic decoration or surface treatments ended up in this cluster, we know from those types that the plastic decoration could have been expected in a different part of the vessel. Except for Hicacos, all of the sherds are associated with the cluster 1 for the lips and correspond to the standard for the region: composed of one separate coil, mostly burnished and slipped. Interestingly, while at El Espino, this cluster seems to mainly incorporate utilitarian types (with the exception of Papalon) as indicated by the associated vessel shapes, at Monte Libano sherds from this cluster are associated with less utilitarian shapes such as tripod bowls, and outflaring dishes and bowls, closer related to Usulután style vessels (which Muerdalo and Chepito are closely related to). This cluster is mainly associated with oxidizing atmosphere (reducing atmosphere constitute 35% of the cluster).

6.3.1.4 Cluster 4

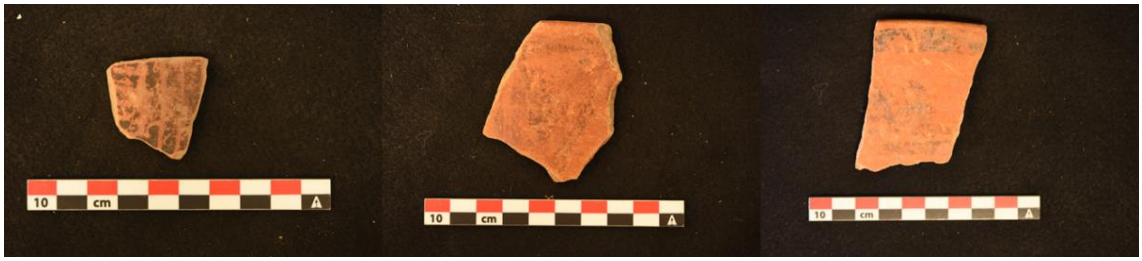


Figure 23- Examples of Ceramics from Cluster 4 (outer surface) (pictures by S. Casale).

The surface treatment in cluster 4 alternates between smooth and crude, with possible combination of both on different surfaces of the same vessel. In some specimens, this combination can be extended to light burnishing. While the cluster had originally naturally formed to incorporate polished specimens, I decided to associate those with cluster 2 because of the closer resemblance of the technique and result between polishing and high burnishing than for smoothing. In most cases, only one of the sherds surface is slipped (inner or outer), depending on the shape of the vessel they belong to. All sherds belonging to this cluster are painted, but exhibit no plastic decoration (fig. 23). Some sherds from this cluster have grog temper. This group remains relatively heterogeneous, including a variety of types: Coyote, Guatales, Tolondron, Papaya, Catracho, Pataste, Vallejo and Orion. However, it is possible to note that most types are white slipped. There is some overlap with cluster 3. This cluster and white slipping is clearly associated with full oxidizing atmospheres.

6.3.1.5 Cluster 5

Figure 24- Examples of Ceramics from Cluster 5 (outer surface) (pictures by S. Casale).

Sherds belonging to this cluster are lightly burnished and slipped. This cluster regroups sherds that are largely undecorated, except for incision or excision, sometimes combined with zoned painting (fig. 24). Some decorated specimens also have post-firing excision. This is the only cluster containing cutting techniques. The presence of ash temper is wider spread in this cluster than in others. The majority of these sherds are from El Espino, with a few specimens of La Danta. This may indicate that cutting techniques may be more closely related to a time period (Late Classic, early Postclassic) than to the region.

6.3.1.6 Cluster 6

Figure 25- Examples of Ceramics from Cluster 6 (outer surface).

This cluster, similar to cluster 3, has different surface treatments for the inner and outer surfaces of vessels, depending on the shapes: crude on one side; smoothed or lightly burnished on the other; or inverted. Restricted vessels in particular tend to have a smoothed interior surface and a crude outer surface within this cluster. It is possible to postulate that this is functional, as smoothing would help reduce the porosity of the vessel. The sherds pertaining to this cluster are unslipped, undecorated, or exhibit plastic decorations (incising, combing, appliqué, impression with textiles or tools) sometimes combined with painting (fig. 25). This cluster contains no sherds with post-firing or post-drying decorations. At Monte Libano, the majority of the sherds belong to this cluster. El Espino, on the other hand, is not represented. This may be due to an excavation and sampling bias: in fact, our assemblage contained barely any utilitarian ceramics from this site. This cluster is mainly associated with oxidizing atmosphere.

6.3.1.7 Cluster 7

Figure 26- Examples of Ceramics from Cluster 7 (outer surface).

Cluster 7 is composed of sherds that exhibit different surface treatments on the inside and outside with possible combinations of smoothed and lightly burnished, smoothed and highly burnished, or smoothed and smeared. Sherds from this group are mostly single-slipped. Decorated specimens exhibit digital impressions, mainly on filets or phalanges (fig. 26). Some may exhibit post-firing decorations. There is a preponderance of grog temper in this group. This heterogeneous cluster only incorporates 14 sherds, and is composed of outliers, so its relevance to the technological analysis is therefore limited. However, this cluster does group together all sherds with cutting techniques. All sherds, except for 2 specimens, are fully oxidized. The two specimens are otherwise outliers due to their lack of slip and surface smearing.

6.3.1.8 Cluster 8

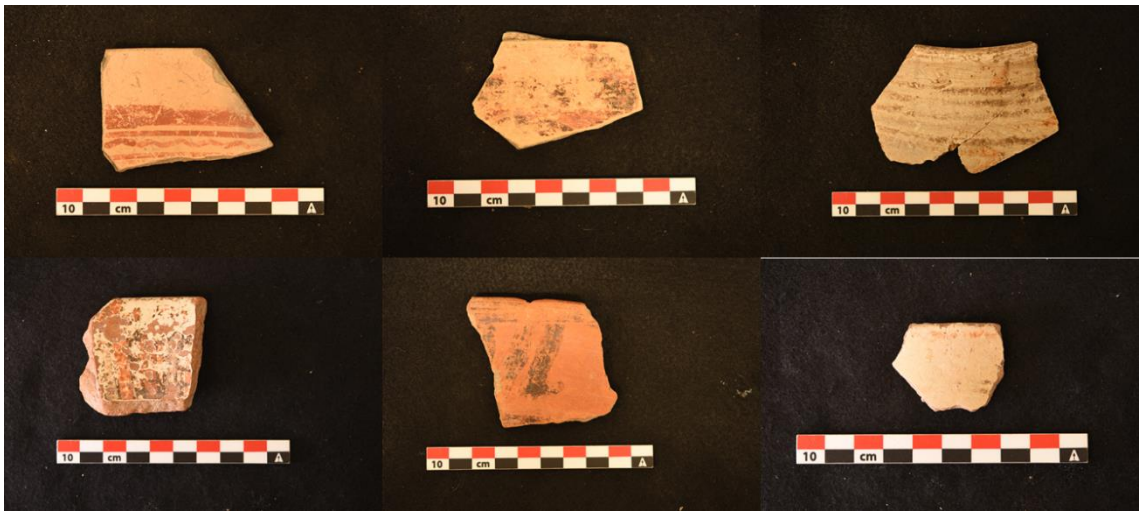


Figure 27- Examples of Ceramics from Cluster 8 (painted surface) (pictures by S. Casale)

Cluster 8 in the largest of all, and includes 44 specimens. It is also one of best-defined clusters, as reflected in the homogeneity between its specimens. Both of the surfaces of the sherds are lightly burnished and slipped (fig. 27). The sole decoration mode is painting. Grog temper is a possible occurrence. While some sherds from La Danta belong

to this group, it is mostly reflective of sherds coming from El Espino. Here, the ratio oxidized to reduced sherds is at 62%-38%.

6.3.1.9 Conclusion

From a technological point of view, it is possible to observe that cluster 7 has little relevance. Additionally, it is possible to observe the relatedness between clusters 3, 4, and 6. Speaking in terms of varieties, cluster 4 would be the painted variant of 3, while cluster 6 would represent the plastic decoration variant of the same group. The other groups are all sufficiently statistically representative and consistent that they can be considered independent from one another. However, cluster 1, 2, and 8 are closely related, as the surface treatment is based on a similar technique (burnishing and polishing and well as slipping and double slipping) and the decoration technique remain the same. Based on these findings, cluster 8 represents a standard, while clusters 1 and 2 show technological variations.

6.3.2 Lip

The two-step cluster analysis was conducted separately for both lip technological markers and the body sherds, as the program could not establish correlations between the 3 lip clusters and the 8 body sherd clusters. Yet, general observations could be made that could correlate lip groups to body groups. The feature importance for the lip was ranked as follows: coiling construction, decoration, slipping, and surface treatment. The lack of compatibility of the two analyses lies in the discrepancy in importance of the determining features.

6.3.2.1 Cluster 1

Cluster 1 is the largest of the three clusters (55%), and can be considered the standard for lips at the three analyzed sites. The forming technique, in particular, is the one closest to the standard, with the lip being shaped from one coil added to the body. In this cluster, the lip is painted, generally with a band running on the inside of the vessels for bowls, though it can be outside or on top in the case of jars. The sherds are smoothed and slipped or burnished and slipped. This lip group is related to clusters 1, 2, and 8 in the cluster analysis of the body sherds.

6.3.2.2 Cluster 2

Cluster 2 represents 15% of the assemblage of lip sherds. This cluster incorporated all plastic variations to the lip construction. The folded lip is constructed as a flattened coil folded upon itself. The double coiled lip resembles the folded lip in appearance; however

it is built by superposing two flattened coils and smoothing over the joining point. Lastly, a reinforcement coil can be used in some cases of outflaring lip profile, to reinforce the joint between the body and the lip. In this group, the lips are either undecorated or exhibit various plastic decorations. The lips can be smoothed and burnished or scraped and burnished. This group is mostly associated to cluster 6 from the body sherds cluster analysis.

6.3.2.3 Cluster 3

Part of the lips from cluster 3 reflect the standard forming technique as defined in cluster 1, while others exhibit a reinforcement coil or the modelling from the lip from the body. Burnishing or smoothing the sherds are the only surface treatments associated with this group. Cluster 3, the second largest group, could be considered as an unpainted variant of Cluster 1. The lips from cluster 3 are mainly undecorated, neither painted nor showing plastic techniques. However, 46.7% of the sherds from this cluster are slipped. It was later established that some sherds considered in this cluster were actually pieces from annular bases (as known from Pataky, Papagayo, Vallejo or even Salua types). This cluster is generally related to Ulúa types and white slipped polychromes of our assemblage, and is mainly associated with El Espino and La Danta.

6.4 Conclusion

The analysis, while statistically not representative, did confirm certain trends represented in Baudez's typologies and general observations: the vessels with plastic decorations involving displacement techniques clustered into a single group which was almost exclusive to Material from Monte Libano. This predilection for plastic decorations certainly did exist, as will be discussed in the next chapter, as a general trend in pre-Ulúa traditions in Honduras. However, it did also separate certain types which had been previously lumped together (for example the white slipped polychromes. Clusters where all sites are represented to the same degree do not exist, which point towards localized traditions instead of regional ones. Clusters seem to have been created around attributes one of two ways: (1) as part of an interregional tradition and linked to a particular time period, (2) as regionally or locally tied, but existing throughout the studied periods.

Examples of clusters of the first type are Cluster 3 and 6, including plastic decorations and unpainted vessels. These pertain to a region wide fashion of plastic decorations, especially displacements (impressions with tools or fingers) and of joining technique (appliqué). The zoomorphic appliqués to the vessels walls later disappear to appear only

reappear as vessel support or handle in a more functional role. Examples for the second type of clusters are groups 3 and where Monte Libano and El Espino are well represented. This can point towards a shared regional tradition between these two sites. The clusters where La Danta is represented with El Espino, on the other hand, seem to share traditions that are more temporally linked to and interregional trend (slipping, cutting decorative technique) than to a local one.

However, the bias in the excavations and sampling methods are also well represented within those statistics: undecorated unslipped sherds are, by default, only represented in clusters grouping together La Danta and Monte Libano. Yet, I believe it is due to the lack of utilitarian pottery from El Espino present in the assemblage (due to the place the test pit was dug or to the sampling method and the selection of the sherds to export).

The application of a statistics based method to the assemblage was, therefore, limited. It did nonetheless produce results, combined with a macro analysis of the sherds that included non-quantifiable attributes as well as additional contextual information from Baudez's field notes. There is potential in a statistical attribute clustering analysis. Three aspects will, however, need improvement: (1) for statistical significance, a larger sample size is needed; (2) a separate cluster analysis for painted decorations and plastic decorations is needed, where techniques and tools associated with both decorations could be included; and (3) the origin of all sherds needs to have been prior guaranteed as locally produced. In fact, the clusters were partially misrepresented through outliers and possible import ceramics, which do not represent part of a local ceramic tradition. Additionally, the bias of utilitarian/other use vessels can only be erased if the two cluster analyses are run separately. However, the dichotomy found through the clustering also indicates that there is no overlap in pre-slipping surface treatment between utilitarian vessels and others.

7 Crafting Traditions in the Gulf of Fonseca

7.1 Technological Choices in the Gulf of Fonseca

The cluster analysis aimed to reveal similarities rather than differences in the assemblages. These similarities were used to find out what constitutes a regional tradition and to determine if one can convincingly be argued for the Gulf of Fonseca. A certain overlap between Monte Libano's and El Espino's assemblages was put into evidence. This similarity came unexpectedly as the periods explored at both sites did not overlap. However, the clusters where La Danta's assemblage was represented were the least well defined, which indicated a lack of similarities with the two other assemblages. Finally the difference found in the frequencies and the visual analysis allowed postulating La Danta's tradition as external to Monte Libano's and El Espino's.

7.1.1 Monte Libano

In the attribute frequency analysis, certain attributes stand out as characteristic for the site. Regarding lip construction, Monte Libano is the only site where double coiling and rolled lips occur, both as variations to lip folding. As for plastic decorations to the lip, this site has the only assemblage where joining techniques (appliqué) occur on the lip, with the most frequent decoration being through displacement technique (impressing or folding). The surface finishes on the body are most often combined on the same surface (zoning) or showing different surface finishes and treatments on the inside and outside (alternating mostly between crude, smoothed and lightly burnished). The slipping, when it is present, is generally applied on the inner surface of vessels (bowls or dishes). The decorations to the body are mostly plastic: incising, combing, impressing, brushing and appliqué. The special temper of choice is grog, with some occurrence of calcareous temper and ash for later occupation. The firing ratios are similar to those observed in El Espino, with probable existence of both open air firing and pit firing.

The majority of Monte Libano's ceramics seem to match the pan-regional trend of pre-Ulúa polychromes which are unslipped and exhibit plastic decorations. These specimens can have monochrome painting, generally red. The sherds that do not have plastic modifications generally are monochromes or zoned bichromes. Painted motifs, in the rare cases they do exist, are geometric. However, the Ulúa "bold geometric" tradition which exists in the Ulúa Valley of Honduras does not exist at Monte Libano. While Monte Libano exhibits plastic decorations, the decorations in themselves remain diagnostic to this site and some others, occupied during the same periods in the Gulf of Fonseca.

In particular, Estrella Ondulé and Auriga Café can be seen as the diagnostic types for Monte Libano (Auriga Café represents 38-69% of the assemblage in 5 of the 6 layers). The first one is built with two layers of coils: the first layer, part of the roughing out of the vessel, is evened out and smoothed, while the outside layer is made for the coils to be apparent and exhibits regular digital impressions. The lips in both types are either folded or doubled coils. Auriga Café has an undecorated body; however, it is the lip which is decorated with digital impressions. The body fits into the local tradition at the time which is to apply different surface treatments to the interior and exterior surface of the vessels. The combinations include smoothed and smeared, smoothed and crude, or crude and burnished. All of these vessels have generally medium to poor sorting and coarse pastes. Grog temper, sometimes in combination with fiber temper, is typical.

The monochromes at this site are mostly dark purplish-red (Orion Red is heavily represented, between 12-31% of the assemblage throughout the 3 first layers at the site). Dark red bands also appear on incised vessels. When the vessel is monochrome, the dark purplish red is most often a slip. However it can be applied as paint in bands in other cases. The red color is always applied on a smoothed surface. The full dark red monochromes are sometime combined with appliqués on the handles or lips -stylized heads with two appliqué eyes and a simple slit as a mouth-. At this time, these are the only figurative motifs associated with ceramics. The incisions are either cross-hatched or vertical lines. When combined with the dark red, paint never covers the incisions and occurs in bands around the lip and handle.

One type of light salmon colored paste, unslipped and unpainted ware is Chiri, which also exhibits zig-zag incisions. Opposite to the red painted or slipped ceramics which exhibit a coarse paste, hidden by the paint; this is one of the only fine paste types at this site. It has however, sporadic grog inclusions which may indicate that it was produced in the same work places as the coarse pasted ceramics. It is associated with medium sized ollas. The only other only fine paste type is Muerdalo. This monochrome orange type has a beige paste with calcareous white temper; the paste has otherwise no inclusions as all. The pure color of the clay, as well as the bright orange paint and the high burnishing, added to the association with tripod dishes, may indicate a use different than utilitarian wares. It is unclear where the clay would have been procured, as it is the only type it is used in. Additionally, calcareous soils do not exist in the geology of Pacific Honduras (pieces of chalk could have, however, ended up in streams). The brush application of the orange slip can however be found on coarse dark pasted Hydra Red, both at Monte Libano and El

Espino. This type could be seen as a utilitarian variation to Muerdalo, and becomes one of the main utilitarian types at El Espino (12-49% of the assemblage depending on layer).

The local predilection seems to be dark red paint. This paint is of a similar pigment as the one observed later on on locally produced Las Vegas polychromes. Therefore, it is possible that this pigment was locally occurring as well as preferred over others by the potters. The shade of red as well as the type of appliqués differentiates Monte Libano from the plastic decoration traditions at Quelepa and the Comayagua Valley: there is an absence of phalanges and appliqué cords which are impressed with tools. This tradition does not appear until much later in the Gulf of Fonseca. At the time of occupation of Montel Libano, there was a clear preference of digital impressions. The zig-zag incisions that are very wide spread in the other regions (on coarse pastes) only appears on Chiri.

7.1.2 El Espino

The analysis of attribute frequencies at El Espino narrowed down what could be understood as the site's ceramic tradition as follows: the technological attributes of the lips revealed that they were mostly constructed with unmodified coils, yet sometimes made to resemble lip folding techniques. The only decoration found on lips is painting, mostly in band or as continuation of the motifs occurring on the bodies. The surface treatment and finish to the bodies are mostly single finish, which are mainly burnishing or polishing. Slipped vessels principally are slipped inside, and the main decoration (painting) is applied on top of the slip. When the vessels are decorated with incisions, these are made pre-slipping. The pastes of El Espino are, on average, the best sorted of the three sites. The ceramics in which special temper occurs have either ash temper or grog temper, but frequently a mixture of both. Finally, El Espino is the site where the firing of ceramics shows the highest diversity which may reflect more diversity in kiln building. However, the most frequent firing is done in an oxidizing atmosphere.

El Espino seems to continue certain traditions that were started at Monte Libano. It does, for example, continue to exhibit the use of the dark purplish-red pigmented paint in locally produced ceramics (Las Vegas Polychromes or Delirio). There is also some continuation of vertical zoned incisions that appear combined with slipping and painting in the Ulúa style. There is a clear continuation of the use of grog temper, sometimes mixed or alternated with ash temper. The introduction of ash temper can be linked to the eruption of the Ilopango in El Salvador before the first occupation of the site, which would have spread a layer of volcanic ash throughout the region. As for firing, El Espino

exhibits similar ratios to Monte Libano: sherds were mostly oxidized, or reduced and rapidly cooled. Techniques seem to have overall remained similar with the introduction of innovations such as the sequence reducing, cooling, reducing and cooling again, as well as the increased use of ash temper. Bowls and dishes remain the shapes of predilection for painted pottery. However, the ratio of unpainted and unslipped pottery to painted and slipped pottery changed, and there is a clear rise in popularity or use of polychromes at El Espino at a certain given time.

El Espino constitutes the largest assemblage by far. By extension, sherds from this site appear more frequently in clusters: it is present in all clusters except for cluster 6 and 7. The clusters which are mainly include El Espino sherds are cluster 1 and 2. It is also abundant in cluster 8. All those groups are associated with burnished or polished ceramics, slipped or double slipped, with a painted decoration. The decorations remain consistent with what had been observed at Monte Libano insofar that figurative anthropomorphic or zoomorphic figures are rarely included in decorations, except on rare specimens of Ulúa Polychromes where a monkey is depicted. The painted decorations are generally limited to bands, lines, zoning, and sometimes geometric motifs, with a few exceptions showing friezes of step-frets or pseudo-glyphs. As for plastic decorations, digital impressions completely disappear. The few sherds that still carry plastic decorations are incised in angular geometric patterns. Incisions are generally made post-slipping. As far as pastes go, utilitarian ceramics continue to have the functional coarse paste while their surface is now undecorated and only in some cases smoothed. Other ceramics exhibit a salmon-colored fine paste, extremely well sorted, which seems aligned with the paste of Chiri ceramics that were previously found at Monte Libano.

7.1.3 La Danta

La Danta's assemblage does not seem to show any relationships to that of Monte Libano nor to Monte Libano's assemblage. If it existed in continuation of a local tradition, evidence has not yet been unearthed. This lack of overlap can be observed on several levels: the absence of overlap in the surface treatment, pastes, techniques, as well as the predilection for open air firing, the apparition of globular bowls and neckless jars as well as annular bases, and the predilection for ash temper. The site-specific existence of a type—Cacaulito with textile imprints—also points to a localized industry of ceramic production.

Cacaulito presents particularities on the technological level. The vessel shape that seems associated is the globular bowl; however, since no lip sherds were found, this cannot be verified. These vessels seem to be made either by combining coiling and slapping, or just by slapping the paste onto the exterior surface of another vessel serving as a mold. This may also be how the textile imprints would have been obtained: by putting the net or textile between the vessel serving as mold and the paste preparation. The exterior of these vessels was smoothed or highly burnished. It is possible that these would have been serving vessels along polychromes. However, there may be a functionalist explanation that would tie them to the preparation or consumption of specific foods or drinks. The polychrome types present at this site are mostly known from Pacific Nicaragua, yet, fine-paste vessel with textile imprints are not known from anywhere else thus far.

The sherds from La Danta appear in significant amount (>10 sherds) only in the clusters 6 and 8. Therefore, only commonalities shared between La Danta and the assemblage from Monte Libano is exhibiting a different surface treatment on the outer and inner surface of the vessels, and the general light burnishing-slipping-painting combination. It is therefore not in the cluster analysis where the differences are best represented—as the analysis was an attempt to focus on similarities—but in the comparison of frequencies of certain attributes.

La Danta is the only site where lips are modelled directly from the body in a beveled shape. Folding of the lip only occurs on unpainted and undecorated ceramics, particularly on jars. These jars also often exhibit a reinforcement coil (which is necessary for their integrity due to their size). However, reinforcement coils are also used in this assemblage to support flaring lips in smaller, thin-walled vessels. La Danta is the only site where cutting techniques are applied as lip decoration. In the case of Hicacos, the excision is done on the reinforcement coil. Displacement decorating techniques are also used.

As for the body sherds, 40% exhibit a single finish. The vessels where finishes differ between the inside and the outside are closed forms. Smoothing and burnishing are the principal surface treatments outside of slipping. The patterns identified in the slipping are not diagnostic at La Danta. However, its double slipping is a slip-on-wash or a wash-on slip. In vessels with annular bases, the wash (generally applied by brush) appears without a slipping layer on the inside of the base. The principal decorations are painting, impressing (textile), or cutting. Here too, the incising occurs pre-slipping on types like

Jocomico (an incised variety of Vallejo). The special temper which is the most frequent is ash. However, calcareous and grog temper also occur in smaller quantities.

7.2 Crafting Community

Examining a full assemblage can prove useful to understand broad regional trends and conceptual ideas that were shared between settlements. However, focusing on the observation of particular cases within these regional or settlement-wide trends can further inform the sociality and the organization of craft behind ceramic production. Case studies in these assemblages allow us to see the entangled "side stories", helping us create narratives completing the mere observation of patterns and giving it an individual-focused dimension. In fact, these side stories are especially relevant in the search for past communities of practices and their networks of actions.

7.2.1 Communities of Practice on the Interregional Scale

Figure 28- Examples of charred Las Vegas Polychrome found at El Espino (pictures by author).

In the case of the Gulf of Fonseca, local variation may be understood in relation to known regional typologies: white slipped polychromes, for example, are extensively known from neighboring regions (Ulúa Valley, Comayagua Valley, Pacific Nicaragua and Eastern El Salvador). While it is still under definition (such as the Papagayo vs. Las Vegas debate), it remains one of the most studied types in modern Central American scholarship (e.g. Dennett 2016; Joyce 2016, 2017; McCafferty and Dennett 2013; Steinbrenner 2016).

Therefore, the type is also well-suited to observe variations in application of the conceptual mode on a site basis. The presence of charred white slipped polychrome sherds (identified as Las Vegas polychrome) in large quantities at the site of El Espino indicates that white polychromes were, in fact, locally manufactured (fig. 28). However, the shallow fragmentation pattern on the charred sherd may also indicate extensive experimenting through trial and error with the firing process.

No dates were associated with El Espino: it was dated to the San Lorenzo/Amapala phases through relative dating of the ceramic sequence. However, considering the ongoing debates about the origins and earliest dates for white slipping in Central America, and the Gulf of Fonseca having been thought to be a possible interaction area between the Pacific Nicaraguan and Las Vegas white slipped, it is possible to consider two scenarios. Either (1) the conceptual mode of Las Vegas-like polychromes entered the Gulf of Fonseca region via the Comayagua Valley, to which the region is linked with riverine systems or (2) the experimentation seen at El Espino indicates a local development of the ware before its development in either Pacific Nicaragua or the Ulúa and Comayagua Valleys.

The first scenario would overlap with Joyce's (2016; 2017) argument that Las Vegas developed from Santa Rita class Ulúa polychromes which appear contemporaneously at El Espino. The second scenario does not exclude this implication; however, it would further imply that this transition would have happened in the Gulf of Fonseca and that the innovation would have reached Pacific Nicaragua and more northern regions of Honduras only later on.

Something striking remains about the Las Vegas-like polychrome sherds found charred at El Espino: they do not possess the red (iron rich) paste usually diagnostic of Las Vegas polychrome. Instead, the potters at El Espino seem to have experimented with white slipping and Las Vegas-like designs combined with a paste type that was better known to them. The light-salmon colored paste that could have been observable—would the pot have undergone total reduction—works, in fact, as the standard hard and fine paste for other polychromes encountered at this site. This light paste also appears at El Espino in combination with Santa Rita class and Tenampua class polychromes. This could potentially position this site in Joyce's (2016; 2017) narrative of Las Vegas Polychromes evolving from late Ulúa Polychromes: the charred sherds could therefore represent a transitional form between both types.

This hypothesis would also be supported by the overwhelming presence of dark red paint, traditionally closer to Tenampua Class Ulúa than to Las Vegas, which is generally known for its orange-red paint. However, another connection could be made: the paste and thick, wide slip also share similarities with a bichrome type in this region—Baudez' Guandique red-on-white, which partially overlaps with the better known Delirio red-on-white type. It is possible that we are, in fact, looking at a hybrid form between Delirio and Tenampua types, slowly evolving towards Las Vegas Polychrome –as previously argued by Andrews for Quelepa (1976, 114).

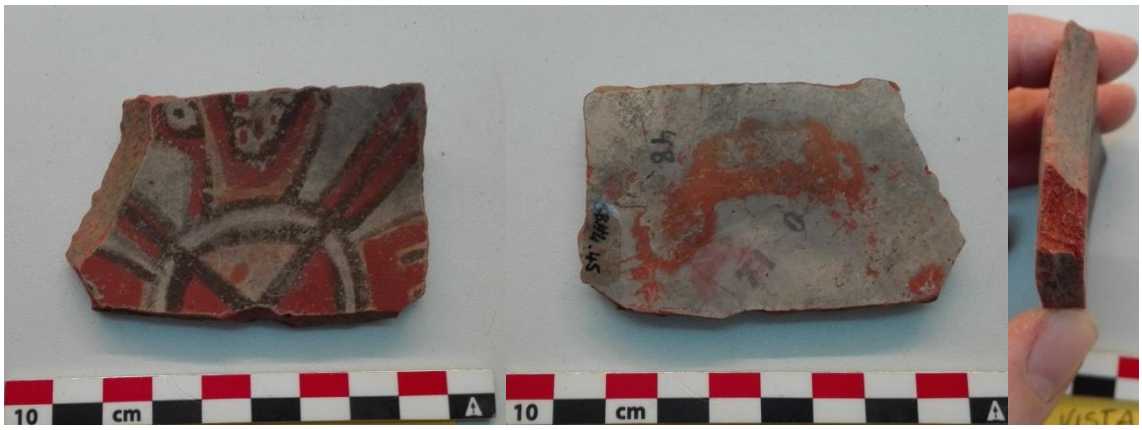


Figure 29- Example of a Las Vegas Polychrome vessel base from the Buena Vista site exhibiting the diagnostic red paste (pictures by author).

The presence in the region of more conclusively identified examples of Las Vegas Polychromes (fig. 29) shows that the conceptual mode reached the region at a certain point. However, these examples only exist in much smaller quantities than the argued hybrid form, and could therefore be thought of as trade wares. It is also to be noted that our specimens of Las Vegas Polychromes more similar to some specimens identified as Las Vegas in Quelepa[5] than to Honduran examples. The following hypotheses could hold true: (1) this hybrid form developed parallel to Las Vegas polychromes in other regions, (2) this hybrid form developed in the Gulf region and later spread to Quelepa, or (3) the hybrid form developed in Quelepa and spread to the Gulf of Fonseca. Unfortunately, these hypotheses will not be confirmed until further work is done in the region and more definitive dates are found. The only thing known with certitude is that this form of Las Vegas Polychrome also appears in the Nicaraguan part of the Gulf of Fonseca, although never in great quantity and often mixed in with the more traditional conception of Honduran Las Vegas as originally described from the Tenampua Valley.

[5] It is unclear if these specimens can be tied with certainty to the Las Vegas polychrome tradition at Quelepa.

Nonetheless, the presence of these sherds can help us shape a narrative for the communities of practice crafting ceramics at El Espino: consciously or not, the potters crafted the vessel according to an imagined result and adapted the mind map they had for producing different types of ceramics to it. They opted to work with a finer version of a paste they were familiar with (iron rich oxidized paste is rarely occurring at El Espino), shaped the vessels to fit their needs (as tripod dishes or bowls), and formed it applying aspects from other types to this new one (such as the folded lip). This translates into a clear stance towards innovation, either local or reinventing foreign traditions. If the influence was indeed foreign, it is possible to interpret that as the existence of liberty to innovate within the social norm: potters are being drawn to create a local product, better fitted to local taste, rather than replicating foreign ceramics in detail. One further possibility deserves consideration: The pieces recovered and identified as "charred" actually reached the desired color and the fuming[6] of the white slip was a choice. In this case, these specimens would have had little left to do with Las Vegas Polychromes. Yet, this effect might have been inspired from Tenampua:Nebla where black paint would cover most of the white slip. Because of the small size of the sample, it is not possible to eliminate the latter possibility. However, due to the shallow breaks on the charred-looking specimens, I will continue to treat this sample as Las Vegas Polychrome.

7.2.2 Communities of Practice and identifying Networks of Action

Figure 30- Examples of Cacaulito with textile imprints, inner and outer surfaces (pictures by author).

Another "side story" this assemblage reveals is associated with the type that Claude Baudez denominated Cacaulito (Baudez, unpublished manuscript). This particular type

[6] Treating with fumes in order to obtain a light gray or black surface coloration.

only appears at La Danta and attracted Baudez' attention with its textile imprints. The fact that Cacaulito only appears at one of the 20 sites that Baudez explored on the coast is revealing: it hints towards an isolated community of practice in or around the site that would have produced these ceramics.

While textile imprinted ceramics is not, in itself, rare in the region—they have been observed at some sites in Chinandega (Clifford Brown, personal communication)—they rarely occur as they do in La Danta: on fine paste, thin wall ceramics associated with either high burnishing or polishing on the un-imprinted surface (fig. 30). In fact, they are generally associated with larger, thick-walled vessels where the textile imprint on the outside surface of the vessel serves for higher heat distribution when cooking.

On the other hand, textile imprints are found on utilitarian wares that were constructed by slapping the prepared clay on the outer surface of another, upside-down positioned vessel. In this case, a cloth is used to ensure that the wet paste does not attach to the other vessel. Those traces are generally smoothed with more or less care, as those pots will generally be used for everyday cooking. Finally, some textile imprinted vessels seem to have been used in salt production sites in Chinandega, but it is unclear if they were part of the salt making process.

Figure 31- Cacaulito with net imprints, inner and outer surface (picture by author).

The examples at La Danta are therefore unique as the apparent textile imprints appear deliberate stylistic choices. It is possible that these vessels served a particular purpose, and that the textile imprints may have had a function. As these sherds were found within elongated mounds, accompanied by white slipped polychromes but also by utilitarian types in great quantities in a context associated with food preparation, it is possible to postulate these as being serving bowls. An alternative interpretation is that the function of the vessel was related to its decoration: they may have been used for pigment preparation for dying cloth. Regardless, it delimits a community of practice at this site.

Does the lack of presence of this particular type at surrounding sites indicate that, within and beyond potting communities, this site had neither contact nor affiliation with surrounding settlements? The remainder of the assemblage seems to indicate that, at least, this site had connections—or even possible affiliation—with Greater Nicoya to the southwest, with clear indicators such as the presence of Vallejo Polychrome, Papagayo Polychrome and Pataky sherds. It may, however, signal a regional enclave or a specialized activity related to those vessels exclusive to this site.

Looking further at the assemblage, it is possible to postulate two separate communities of practice active at this site, producing this type of ceramics. In fact, one seems to have produced fully oxidized vessels with textile imprints, very fine clay, and burnished exteriors (fig. 30). Another variety of Cacaulito is a net imprinted, slightly coarser ceramic fired in a reducing environment with an untreated exterior surface (fig. 31). While the final product has enough similarities to be considered one type, it is probable that these two variations were not produced by the same group of people.

With this consideration around communities of practice also come considerations around the social organization of potting as a craft, particularly intra-site. Both variations of the types appear in the same context, which allows postulating that they were produced contemporaneously and probably consumed by the same families. The communities of practice were therefore not competing with each other to distribute their products. This also raises the question of specialized craft versus home-based craft. In fact, if the potters were not subsisting exclusively of their craft, competition between potters would have not been a consideration. The fact that two variations of this same type appeared contemporaneously also may signify that the type was not so well established that innovation or variations would have been limited.

If we assume that this product was not the result of specialized potters, the imprint itself gains more significance. It raises the question if the textiles or nets that were imprinted were also produced by the same individuals. Chapman (1974, 43) notes that, in Greater Nicoya, cordage and nets were generally produced by men while textile and weaving were associated with women. If so, the division between the two identified communities of practice is one that also occurs on the levels of cloth production: one would have produced nets while the other one would have produced tightly woven cloth.

Additionally, it is possible that, in a site potentially isolated culturally (and maybe economically) from their direct neighbors, the specialization in craft and subsistence strategies may not have been as pronounced as elsewhere. In fact, this may indicate that, not only pottery, but other crafts may have been home based. The net imprints may furthermore hint that there may have been a network of actions extending from subsistence strategies (i.e. fishing) into pottery and may further reflect the intricate relationship between people and their environment.

7.2.3 Communities of Practice and identifying Cultural Transmission

La Danta is not the only site where different communities of practice seem to have been at work and shared the market. Different communities of practice can also be identified at Monte Libano. The case study of the type denominated by Baudez as Auriga Café offers another example of how communities of practice can be identified within an already established typology. In fact, this type appears throughout the region during the Chismuyo phase, the first phase of occupation of Monte Libano. The premise of vessel construction remains similar throughout the region: generally large diameter cooking pots (some examples were found *in situ* on hearths), constructed with large diameter coils, which are then evened out and smoothed over. As is most often the case in the region, the lip is constructed by flattening a coil and folding it on itself or by applying a second coil on the outer site of the top coil.

The different variations that would have been dependent on each community of practice and their respective networks of craft knowledge transmission are mainly identifiable in lip construction. All lips are decorated using displacement techniques. A similar pattern could be produced using digital impressions (as indicated by a clear finger print left on one specimen) by removing pieces of clay, creating folds in the outer layer of the lip, or even by pinching. After these decorations were applied, the top of the folded coils was smoothed over on humid clay while the rest of the vessel was, in most cases, only

smoothed when leather hard. Regionally, pastes varied with the different decorations to the lip, as did the firing.

The Auriga Café sherds that can be tied to Monte Libano are all fired in an oxidizing atmosphere, some showing irregularities indicative of an open-air firing pit. Additionally, the clay mix conforms to a certain standard that can be observed for all utilitarian ceramics from the Chismuyo phase at Monte Libano. In fact, the preferred temper at this site, grog, can be observed even in certain local fine pasted vessels. Auriga Café at Monte Libano has a generally coarse and pinkish-gray paste (fig. 32). The local manifestation of the type exists with decorations through clay removal combined with digital impressions. On the opposite, other Auriga samples from the region exhibit an iron-rich paste with the lip decoration obtained through folding.

Figure 32- Examples of Auriga Café found at Monte Libano, outer surface, profiles, and top of the lip (pictures by author).

One sherd (fig. 33) from Monte Libano raises particular interest. This sample would in fact coincide with the concept of the Auriga Café finished product. However, the vessel would have been of small size (less than 16cm diameter); it is also overfired. The decoration on the lip in this particular case seems to be done by pinching, a technique which has otherwise not been observed. Wendrich (2016) theorized that smaller-sized vessels could have been used as practice for children learning potting. In this case, the learning was likely peripheral at an early age and developed into participatory learning once the child grew older. What we may be observing on this sherd may be the early stages of participatory learning, although no adjustments seem to have been made by the adult potter to the pot before firing. In fact, while the general appearance of the pot conforms,

most of the chaîne opératoire does not: the grog pieces are large and poorly ground, the clay is otherwise poorly mixed with its temper. The lip is neither folded nor doubled. Additionally, all plastic modifications were made to the clay while still wet, which resulted in smearing instead of burnishing. The size of the pinching marks indicates small fingers, which supports the idea of a child learning to make pots. However, the clay color, while burnt through overcooking, conforms to the clay used in the other Auriga specimens from Monte Libano. All these elements combined may point towards an organization of craft through nuclear families. It is however unclear if potting families specialized in producing particular types of vessels or if several types would have been produced at the same location.

Figure 33- Possible example of peripheral learning at Monte Libano. Outer surface, inner surface, profile, paste, sorting and traces of microcracks on the lip due to misfiring (pictures by author).

7.2.4 Conclusion

Communities of practice could, in most cases, be identified in this assemblage. Despite the small sample size, it was possible to identify a standard of what a certain kind of pot was supposed to look like. The understanding of a standard occurred on several levels: (1) on a regional and a site level, where elements of a local potting tradition could be identified, as well as (2) on a type level, where the conceptual appearance of a final product was shared regionally amongst different potting communities. These case studies were not the only examples through which communities of practices could be identified. In fact, once an understanding of a standard is reached, a local variation can be identified with more ease while imports can be singled out.

In all these cases, these local variations reflect a certain degree of innovation with the regional traditions. This can either mean that these regional types were not solidly established yet or that the conceptualization and imagined result did not matter to the audience the pots were produced for. In fact, while our three sites certainly show interregional affiliation, they show little overlap between the types used. Would it be possible that these sites were inter-regionally well connected, but poorly connected with their direct neighbors? Some of the shared elements of the operational sequence may point towards a regional technological tradition; however, it is possible that the shared technological attributes may not have been of significance at the time.

One aspect appears constant: each of the localities explored a strong tradition through which all external input and influence was filtered and adapted. The goal was not to replicate exactly but to adapt (1) to the local manufacturing techniques and (2) to the taste of the local audience. It remains unclear if this technological choice was always conscious. The decision to incorporate certain types and to reject others must have been, however, a conscious decision in a region where so many influences were being brought together.

7.3 Shaping Foreign Connections

The material culture and the archaeology surrounding the Maya frontier is often seen as symbol of hybrid cultural forms, existing in the "buffer-zone" between Mesoamerica and Lower Central America. However, it is necessary when discussing outside connections not only to see the different sites' ceramic culture as just a hybrid result of cultural intermixing from different larger cultural areas. These sites did not have a passive role in the absorption of trends and the region of the Gulf was far more than just a "buffer-zone" on the southern Mayan frontier, especially since no Maya pottery was found. Rather, as demonstrated in the two previous sections, these sites had strong independent identities that reflected in their ceramic traditions. Some degree of regional relationships have already been mentioned above. However, similarities to other sites and outside regions are not limited to the three presented case studies.

One of the few articles Claude Baudez published about his work in the Gulf of Fonseca was a piece entitled *Les Niveaux Céramiques du Honduras: une reconsideration de ution culturelle* (1967). While pioneering at the time it was published, this attempt to link all known ceramic sequences in Honduras could be questioned. It is true that there is a general tendency evolving towards a widespread development of polychrome

production in the Late and Terminal Classic. However, the development of polychrome production cannot be compared in all regions nor be attributed to direct regional influence.

One of the problematic aspects of this article is that Baudez considers the region as culturally homogenous. His sequence description for the Chismuyo phase, for example, is exclusively based on Monte Libano. This can be problematic if we consider that for the San Lorenzo phase, Monte Libano does not share any similarities with La Danta. This indicates that the ceramic sequences should be constructed on a site basis, not on a regional basis. The same is true of hypothesizing interregional ties.

From the previous case studies, it is possible to observe that each site seems to have their own cultural affiliation, and that the region can in no way be considered culturally homogenous. This aspect leads to questions of dating of sites: except for two radiocarbon dates, all sites were dated through their ceramic sequences through relative dating. If the sequences really differ to that extent from site to site, is it possible to assume that some may be contemporaneous with widely different assemblages?

7.3.1 Monte Libano

Baudez originally rightly noted that the ceramic sequence at Monte Libano mostly dates to the Chismuyo phase, and that it is associated with plastic decorations, red on natural and red painted surface treatment. Plastic decorations, monochromy and red-on-natural are not uncommon in Honduras or in El Salvador during this period. In fact, at Quelepa these characteristics seem to be starting in the late Uapala phase and continuing throughout the Shila phases and, to a lesser extent, the Lepa phase.

The plastic decorations as documented for Quelepa (Andrews 1976) seem familiar: while the shade of the red used cannot be determined from the black and white photographs, the techniques of the plastic decorations appear similar. Baudez had originally seen the relationship between Monte Libano's plastic decoration and red painted ceramics and early classic complexes from the Comayagua Valley. However, the techniques used in Monte Libano seem closer to those found in Quelepa. Additionally, this tradition would have existed for over 500 years in Quelepa before the first occupation phase of Monte Libano while the tradition was not as established in the Comayagua Valley at the time.

The ties to El Salvador further reflected by the presence of Usulután style ceramics rightly identified by Baudez, draws similarities with his type, Chepito Graté. A problem with that

similarity is that the Usulután resist tradition, inside and outside of El Salvador, is dated to the Uapala Phase, starting 300 B.C., while Monte Libano's earliest date is around A.D. 300. Chepito Graté would be nowadays classified as Usulután Resist.

However, only one of the three Chepito sherds at Monte Libano may have been an import (possibly from El Salvador) of Usulután Resist. It is, in fact, the only one produced with the known negativo resist technique which consists in drawing a pattern in wax or resin before applying the slip to create negative designs. As Baudez' label rightly indicates, the ones of local production scraped the slip away to create the same designs. Additionally, the outlier could be identified through the firing: it was one of the only specimens of the Monte Libano assemblage fired in a reducing atmosphere. It was also the only double slipped sample. Moreover, the paste composition looks macroscopically different than any of the local ceramics. The scraping technique would, however, match the one observed at Yarumela (Goralski 2008).

Additionally, from a technological standpoint, the type Muerdalo with which Baudez makes the comparison has little in common with Salvadoran Usulután ceramics from the same period: the slip is applied using a paint brush, the paste is more compact and a light sandy beige color, and the vessel is entirely oxidized. Along with the calcareous temper, it seems possibly related to one of the less frequent pastes and shapes associated with the Segovias Naranja type from Las Segovias, in the highlands between Nicaragua and Honduras. Moreover, the type Baudez calls Goyo red-on-buff would seem closely related to Las Tapias polychrome from Las Segovias. While a red slipped and red-on-buff tradition certainly existed at the same time in the Comayagua valley (such as Nacaome and Marimba), the associated vessel shapes and applications seem more closely related to the highlands. Triunfo, on the other hand, may show more similarities to some Shila phase material from Quelepa.

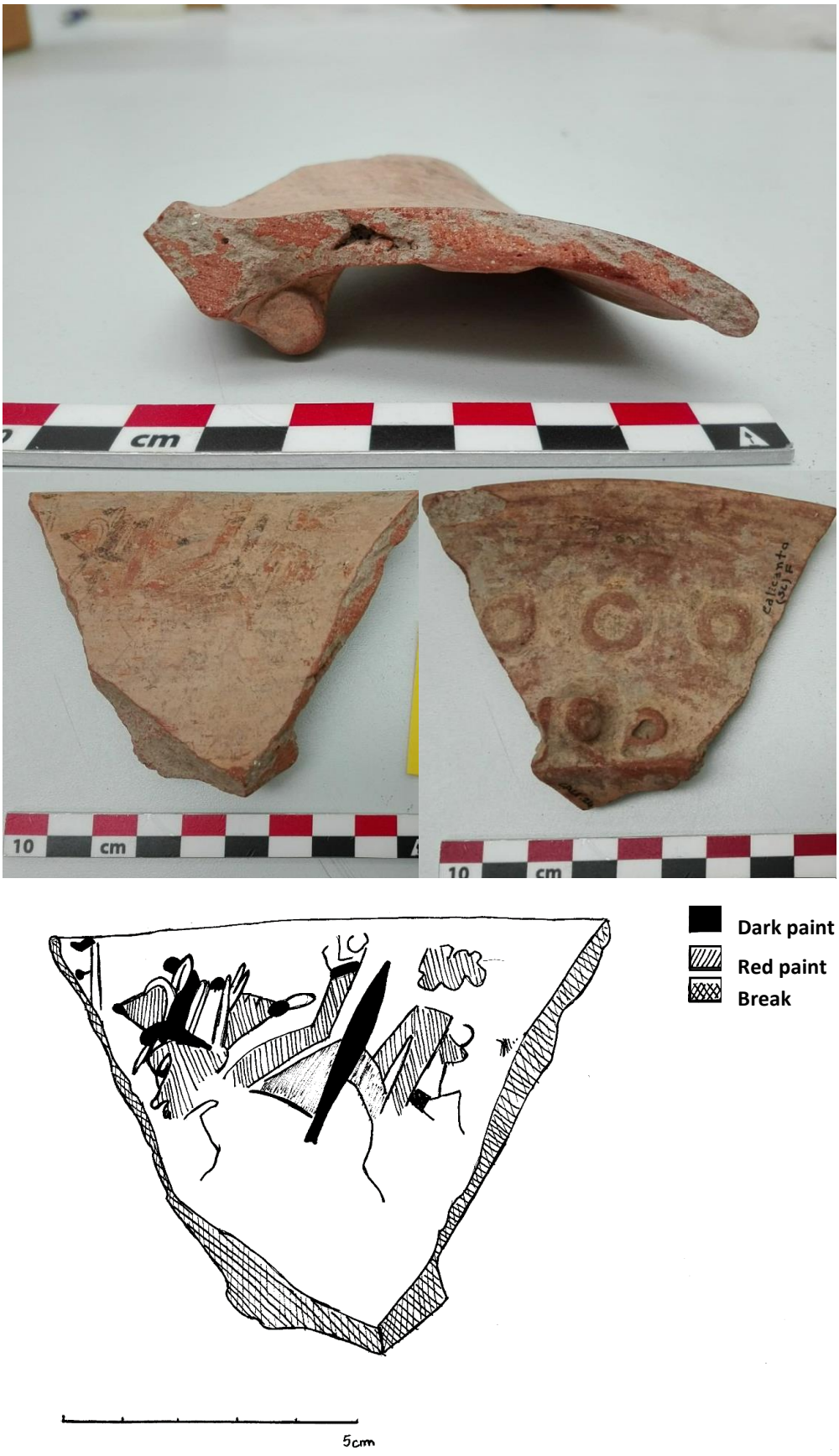


Figure 34- Calicanto Polychrome (pictures and drawing by author).

A type present at both Monte Libano and El Espino in the San Lorenzo phase is Calicanto (fig. 34). Technologically, this type would appear to be a tradeware as there is no overlap with any of the chaînes opératoires known for any Gulf of Fonseca sites. In his *Niveaux Céramiques* (1967) article, Baudez presented the possibility of a relationship with Copán fine line ceramics. However, the resemblance is not striking, especially because of the appliqué rings that are diagnostic to the outside of the Calicanto flaring bowls. The shape of the vessel does not exist on any of the other vessels found in Monte Libano. The painted designs do correspond to some illustrated for Quelepa of "dancing figures". However, the shape of the vessel is not known from Quelepa. The exterior surface, with appliqué rings covered in white wash, may be related to Vallejo Polychrome (Dennett, personal communication). The rarity of the type would, however, indicate it was a result of down-the-line trade.

Figure 35- Examples of variation of Estrella Ondulé throughout the region (pictures by author).

The plastic decorations seem to have existed in certain sites -although not consistently spread- throughout the region of interest. Types like Estrella Ondulé (fig. 35) and Auriga café seem to have different technological manifestations from site to site; however, the tradition certainly extends further than Monte Libano. In this sense, it is possible to consider Monte Libano as a site that would have had the furthest reaching constellation of practice.

Sherds of Estrella Ondulé were, for example, found at a site in the foothills on the other side of the Nicaraguan border (Brown et al. 2014). This example shows that the connections were probably more strongly developed amongst sites within the Gulf region than with sites outside of it, where connections can only be traced through the similarities observed in polychromes. It seems that for the polychromes, it is the

conception of the pot and the design that would have travelled while for the dispersion of technological style on the level of plain wares such as Auriga or Estrella, the connection would have been based in direct interpersonal relations.

Finally, the date discrepancies between the Salvadoran "origins" such as Uapala and Shila Phase plastic decorations and Usulután resist ceramics and the date of Monte Libano raises questions: are the radiocarbon dates for Monte Libano's occupation wrong or did those traditions survive longer in the Gulf of Fonseca? If the latter is found to be true, this would inform on ideas of social memory and long-standing tradition in the Gulf. In fact, these traditions already seem to have been well established by the time of the first occupation of the site, and the production or use would have been continued with purpose, with models originally having been kept as heirlooms. The ties that the tradition may have originally represented may have been forgotten, leaving only the tradition of practice and production with different ideological value: what may have originally been admired because of its foreignness or the ideological representation to foreign places may have become with time ideologically local.

7.3.2 La Danta

La Danta's radiocarbon date has a range of cal AD 553: cal AD 1018. It could have, therefore, partially overlapped with Monte Libano's or El Espino's occupation. However, this overlap could not be identified in the assemblages. La Danta's material seems consistent with a Greater Nicoyan connection. The types that Baudez initially called Pataste and Pupusa polychrome correspond to a mix of Pataky: Pataky and Papagayo polychrome. Other types possibly present are Craneo: Craneo and Isabel polychrome. Pataste and Pupusa sherds also included part of Vallejo polychrome vessels (Vallejo: Vallejo and possibly Vallejo: Lazo) which did not exhibit the diagnostic Vallejo blue. The type documented as Jocomico Incised is also easily identifiable as an incised variety of Vallejo (possibly Vallejo: Mombacho) or Pataky: Ortega (fig. 36). The paste of the identified samples of Calicanto at this site may indicate these are, in fact, Pataky: Pataky sherds exhibiting only the black band. Baudez (1966, 320) in fact notes that "would they not be represented in such large quantities, it would be possible to think of these pieces as directly imported from Costa Rica or Nicaragua". This site's assemblage differs greatly from the other known assemblages from the Gulf of Fonseca region.

Figure 36- Specimen of white slipped polychromes from La Danta (right column) compared to examples from Greater Nicoya (left column) –(a) Craneo: Craneo (b)Isabel: Isabel (c)Pataky: Ortega (d)Vallejo: Lazo (e)Pataky: Pataky (f)Vallejo: Mombacho (g)Papagayo: Fonseca. (Pictures on the left from Steinbrenner 2010, appendix A; pictures on the right by author).

In his personal notes, Baudez draws a parallel between the settlement organization and the one described from Tecoatega by Oviedo (Lib. XLII, cap.13). La Danta was also the provenience of large quantities of obsidian and lapidary debitage. While no analysis has been conducted on the obsidian, I would posit that it originated in Güinope based on riverine access to the site. As Güinope has been identified as the origin for obsidian material for many Nicaraguan sites, it would raise a hypothesis of how and when people from La Danta would have come in touch and maintained relationships with Pacific Nicaraguan groups.

The lack of overlap of La Danta's assemblage with other regional assemblages, the large range of the recalibrated date (radiocarbon dating at the time having just being introduced to archaeology), and the preponderance of white slipped polychromes seem to question the date of 680 A.D. originally given by Baudez. But the nature of the assemblage in general also raises the question of site function and of representation bias, as Baudez only excavated one of the two parallel elongated mounds that seem to have been centrally located at the site. Baudez interprets this mound—in parallel with

Tecoatega—to be a food preparation area for elites. The pottery seems to corroborate a certain association with food preparation and serving. Yet, putting the data for the second occupation which corresponds to the building of the structures and a brief occupation in perspective with recent research, the deposits would also appear consistent with periodic feasting. These two hypotheses of the mound's function also have different implications for the site: was La Danta an isolated enclave or a ceremonial/ritual center separate from settlements?

The first occupation of the site (represented by 20cm of deposits associated with food storage and preparation) seem to point more towards a habitation (although no longer than two generations in length) and exhibits the presence of Delirio red-on-white, as well as a higher concentration in white slipped ceramics and site-specific ceramic such as Cacaulito with textile impressions. The underlying elongated structures, over 20m in length, of the two elongated mounds would have corresponded to two longhouse types that would have housed several families. In both occupation phases, the undecorated and unpainted "utilitarian" ceramic seems to represent a regionally unique assemblage. La Danta was also one of the sites where jade beads were found (regular ring shaped and tubular) as well as pendants (zoomorphic and disks). Accounting for the short occupation periods, the presence of Greater Nicoyan types may, in this specific case, not be the result of local production. The short occupation may also explain why this site did not develop stronger ties with other sites in the region. It is, however, still worthy to note that no other sites with heavy presence of Greater Nicoyan types have been identified in the Gulf of Fonseca so far, either in El Salvador or Chinandega.

7.3.3 El Espino

If La Danta shows a clear Greater Nicoyan connection (even if the nature of the connection is unknown), El Espino maintained ties with the Comayagua Valley. In fact, the main polychrome types correspond to Santa Rita and Tenampua class ceramics. Some of the types encountered are Nebla: Rodeo (a majority, known as Guatales in Baudez work), Santana: Salmo, Santa Rita: Mellizo (Langues polychrome), Travesia: Rastrillo, and Santa Rita: Chac (Langues Polychrome). Other types known from the Comayagua Valley include Guandique: Variety A (Delirio Red-on-White). Guandique: Variety B could be a local attempt to reproduce Delirio style ceramics in local paste. Interestingly, the paste used is white, which allowed the darker red paint to be applied after burnishing instead of slipping. The examples for this variety lack the typical Delirio designs and are generally

more focused on linear designs. One sherd could also be identified as a Copador polychrome, where a shiny white slip would substitute the more traditional cream slip. On this sherd, a frieze of pseudo-glyphs is substituted to the traditional Delirio designs. Considering the uniqueness of the sample, I believe it could be identified a tradeware as could be the few sherds of Plumbate encountered. All of these can be linked to the later occupation of the site. This overwhelming presence of polychromes and tradewares seems even more surprising considering the test pit was done outside of mounds or platforms and seemed to expose a food preparation area.

Monochrome vessels and "utilitarian" pottery seem to appear consistently throughout all levels of occupation. Remarkably, all classes of Ulúa seem to appear simultaneously in an occupation that otherwise appears continuous. It is unclear what sparked the sudden apparition of polychromes at this site. However, I postulate that this sudden emergence could point towards the apparition of a trade route by the site at that time that would have been trading ceramics from the Comayagua Valley: in fact, as the site is situated on the edge of the Nacaome river, it is possible to postulate a reorganization of the trade originating from the Comayagua Valley travelling through the Gulf of Fonseca to include the Nacaome river. This would have somehow led to a cultural encounter with local populations from El Espino. Moreover, it is around the same time that vessel types associated with crop storage seem to be replaced by a vessel type generally associated with seafood collection and preparation found in most seasonal sites. The integration of foreign ceramics therefore also seems to coincide with a change in foodways and subsistence strategies.

The size of El Espino (with mounds spread out over 1.5 km^2) does point towards a site with regional significance, either ceremonial, political or commercial. Dennett (2016, 233) argues the existence of a larger site on the coast of the Gulf of Fonseca (while in the Uapala phase) through which Comayagua products could have travelled and been distributed to Nicaragua. As El Espino shows signs of both local production of wares such as Las Vegas and possibly Tenampua Class Ulúas, but also a strong presence of tradewares, it could have filled such a position within the ceramic economy of the region for the Late Classic. Baudez argued this site to be a ceremonial center: it can be argued that its ritual significance was linked to why it got weaved into the large-scale ceramic economy. The initial overview Baudez was able to provide of this site due to poor preservation, is certainly insufficient to complete its understanding. An architectural feature however caught our attention: Baudez mentions a possible access ramp to a

platform on which seem to have been constructed two additional mounds. This feature is argued for Quelepa (Sampeck 2014) to mark increased relationships with sites from the Comayagua Valley, where access ramps are known.

7.3.4 Further sites

Los Calpules, a site briefly mentioned by Baudez and shortly described by Doris Stone (1957) could show similar potential. Baudez only documents eight mounds and he argues that the test pit only shows a brief occupation during the early San Lorenzo phase. However, I visited the site in the summer of 2016. Don Luis Torre, an inhabitant of the hamlet of Los Calpules and interested in the local archaeology explained that, while sometimes separated by 200m, these groups of mounds extended past the modern town of Triunfo, 7km away from the mound group originally described by Baudez (Don Luis Torre, personal communication). Based on this assumption, the area, previously traversed by a tributary of the Guasaule river, could have been in pre-Colonial times a densely settled area: the river would have made the land fertile and allowed the area to maintain water-based connections. It is, of course, unclear if all the mound groups date to the same period.

The material that was observed on the surface is partially consistent with material from Las Segovias site and of other sites situated in the mountain range north from the area. An anthropomorphic support found on the surface shows some resemblance to one found at El Espino. While none of the other materials seem comparable to the sites considered in this research, the supports and paste types looked similar to those encountered in Chinandega, which are associated with Segovias paste (fig. 37). Among surface finds, there was also a strong presence of greenstone which seems to have been locally found and converted into beads and pendants (fig. 37). There was also an abundance of obsidian scattered across the site. This level of craftsmanship and knowledge of the environment as well as the trade routes seem to be inconsistent with the brief occupation described by Baudez.

However, the possibility of a site specialization or seasonal occupation focused on greenstone production must be considered as well. As I have argued elsewhere (Kolbenstetter 2016), this level of site specialization in the region is linked to the production of other luxury goods such as salt. Yet, other surface finds, such as *metates*, do indicate the onsite preparation of food. Again, the little documentation that available for this site, combined with the current state of preservation, does not allow for reliable

considerations. The finds do however indicate that the site may have been connected to the cordillera via the Guasaule. Similar jadeite pendants were encountered at Dos Quebradas (Winemiller and Ochoa-Winemiller, 2018).

Figure 37- Surface collections from Los Calpules, collected by Don Luis Torre. Left to right, top to bottom: jadeite pearls and disks, anthropomorphic support, anthropomorphic "alter-ego" appliqué, anthropomorphic appliqué, figurine, metate and mano, jadeite pearl (pictures by author).

Another site, where three test pits and surface collections had been part of Baudez' original research, is called Las Cabezas. This site has a clear coastal pedigree: in fact, the only habitational mounds uncovered were made of shell. While not many sherds from this site were included in the samples exported by Baudez, a striking resemblance between Las Cabezas' ceramics and ceramics from Punta Chiquirin and Asanyamba is noticeable. This resemblance seems to bear significance, as Las Cabezas and the El Salvadoran coastal sites also share mound construction, proximity to mangrove swamps, and subsistence strategies.

7.3.5 Conclusion

There are several ways these material relationships could have come into being. As presented in the first chapters of this thesis, the Gulf of Fonseca is situated between three cultural areas which were more culturally homogenous than our area of focus and had stronger evidence for established political hierarchies. These cultural areas would also have been very active on a regional level. It is therefore possible to expect from a diffusionist view point that the influences of those cultural areas would have radiated

into the Gulf. However, this does not explain how ideas and materials travelled these large distances. Considering the documented relationship between Quelepa and the Comayagua Valley (Sampeck 2014), it is possible to postulate that the trade with Quelepa was not direct, but down-the-line through Comayagua. This hypothesis coincides with the model demonstrated by Dennett (2016, 321), where Uapala-sphere ceramics would originate from the Comayagua Valley through the Gulf of Fonseca, to be redistributed into the Rivas region.

The presence—although in small quantities—of Usulután Resist ceramics at Monte Libano, combined with the date discrepancy, would further feed into this argument. In fact, Goralski (2008) observes what we first interpreted as a local manifestation of Usulután resist, where the slip is scraped off, at Yarumela. As there is no overlap between Monte Libano's C14 dates (if they are accurate) and Yarumela's it is possible to consider that (1) this tradition found centuries earlier at Yarumela somehow survived longer in the Gulf of Fonseca or (2) that the sherds belonged to vessels that had been in the possession of the kin groups that settled in Monte Libano for several generations.

It is important to bear in mind that polychromes remain a minority in our assemblages, and that only part of these could be identified as having a foreign provenience. Furthermore, people in the Gulf of Fonseca clearly privileged their own produced pottery (an estimated 90% of each assemblage) and local styles for every-day consumption. Except for La Danta, no direct cultural affiliation or identification with major centers is suspected.

However, rather than asking how the Gulf of Fonseca was related to external regions, we first must ask how the sites within the Gulf region related to one another. How could it be, that sites less than 30km away have such drastically different assemblages? It is necessary to start thinking about this region, not only in terms of pluriculturalism, but also in terms multivocality of the different communities and agents at work. While it was not possible given the ceramic assemblage to go beyond a technological analysis, it will be essential to keep in mind the drastic role of the environment of the Gulf of Fonseca in future work, how it acted as an agent in question of mobility, subsistence and, by extension, community organization.

While the modern riverine system has certainly suffered some anthropogenic modifications over the five last centuries, some probable pathways can still be observed on the map. It is highly probable that multiple riverine pathways connected different

parts of Honduras to the Pacific Coast. An additional riverine system connects the Gulf to the highlands (near the Segovias), to Güinope and further to the department of Olancho to the north. Some river pathways that are no longer observable as modified by the extension of Choluteca are the Rio Grande (which would have been connected to Lake Yojoa), the Nacaome and the Gonascoran (as noted in Stone 1957). Similar riverine pathways can be observed in Chinandega, where there is still modern-day evidence of fishermen travelling from further inland in their boats into the delta of the Estero Real (observation by the author). Any site description, by Claude Baudez (unpublished manuscript) or Doris Stone (1957), all start with the name of the river with which the site is directly associated. Thus, the sites situated in the Gulf of Fonseca region, inland or coastal, all had access in some way to products coming from Central Honduras, El Salvador, Nicaragua, highlands and valleys in remote areas.

The question of access to products is therefore not a question in the Gulf of Fonseca: rather, the focus should be placed on the integration and rejection of the products the people were exposed to. I believe that little of this integration or rejection was actually due to ethnicity or language. It does seem, however, that the connection offered by the river did play a role in privileging connection between certain sites. In fact, the possibility of monopoly of certain trade routes and riverine systems by certain polities in Central Honduras cannot be excluded. It is clear however, that the inhabitants of the Gulf of Fonseca also heavily contributed to this barter economy with products including salt and jadeite, and possibly other food stuff or products not identifiable in the archaeological record, such as cloth or perishable ornaments. Ceramics could have in this case remained by-products of trade but not the object of trade: goods like obsidian seem to have had a higher attached value in the local practices than foreign ceramics.

The coasts to the east and the west would also have been navigable. In fact, it is even posited (Callaghan 2003) that the Gulf of Fonseca would have been on the direct route between Mexico (possibly even starting from Alta California) to Ecuador. This raises the question of navigation technologies and long-distance exchanges. Unfortunately, materials from long distance exchange were not part of this research. They are, however, essential to the understanding of the function of the region in future research. Moreover, to understand navigation and long-distance connections, the seasonal camps identified by Claude Baudez along the coasts and on the islands, remain of great interest. The sample size left within the assemblage did not allow tying these seasonal camps to any inland origin. However, seasonal activities such as salt making as well as the necessity for

seasonal camps could inform on a certain political organization of the region (Kolbenstetter 2016).

8 (Re)constructing the Gulf of Fonseca

8.1 Identities in the Gulf of Fonseca

One of the goals of this thesis was to understand how the concept of identity, embedded into practices, could be identified in the Gulf of Fonseca. What emerged from this study is not only the idea of a strong local identity through which every innovation and integration of foreign tradition is filtered, but also the idea of heterogeneous communities within one settlement.

Due to constant interactions, these communities were not impermeable to change. However, it would be wrong to assume that they succumbed culturally to foreign influences. If the radiocarbon dates are exact, Monte Libano showed remains of ceramic styles produced in surrounding regions up to 500 years prior the first occupation of the site. Even with the rise of power of centers in the Comayagua Valley, the sites continuously produced their own ceramics styles for their local consumption. When they made the choice to incorporate foreign styles, they never aimed to produce exact replicas. Communities instead integrated these styles through modification to meet their localized needs. These modifications mirrored their local identity as well as their diverse cultural lens.

The idea of local identity is surely part of the reason how centers like El Espino could emerge. The argument behind not integrating ethnolinguistic evidence into the thesis is that it offers little insight on community building practices at the current stage of understanding of the materials. Additionally, monolingualism of populations in the Gulf of Fonseca should not be the default assumption. In a region where populations from different settlements constantly encountered each other and foreign populations through the long-distance trade, plurilingual or multilingual populations (possibly conforming to a *lengua franca* in some cases) are to be expected as a standard. It is not excluded either, that people speaking different languages cohabited within the same settlement. In fact, a bilingual settlement was documented in the region at time of conquest (Vasquez 1994, vol. 4, 63). In larger settlements, it is even possible to consider the possibility of *barrios*[7] for different speakers (c.f. Dennett 2016, 330; Werner 2000, 111). However, segregation of these communities should not automatically be assumed. Therefore, ethnicity and language cannot be considered major factors in understanding identity in the Gulf of Fonseca.

[7] These are mentioned as *galpones* in historical sources.

A factor usually considered in the understanding of identity is belief and belonging to a certain faith. It is unclear what the people in the Gulf of Fonseca believed in. There is no sign, however, of the Mesoamerican pantheon in any of the artefacts found. In fact, it is worth noting that figurative motives and zoomorphic representations are almost entirely absent from vessel decorations, except for examples of vessel supports and plastic appliqués in the Chismuyo phase.

Doris Stone (1957) and Claude Baudez (unpublished manuscript) both document finding or being handed basalt figurines. Others of the documented figurines include one found by Baudez on the Isla del Tigre and one documented by Cruz Castillo from the Porterillos mangrove site. These statuettes seem to bear closer similarities to the large "alter-ego" statues from Ometepe and Lake Cocibolca: the figure is constructed mainly by excision and generally resembles a crouching human or an animal climbing a tree trunk.

The only Mesoamerican symbol known from the Gulf of Fonseca is a feathered serpent petroglyph (Figueroa 2018; Stone 1957, 93). Other petroglyphs seem to bear similarities to Nicaraguan examples. Jade pendants are at times zoomorphic, with others bearing resemblance to the aforementioned statues with alter-ego motifs. Both this aspect and the location of petroglyphs in the environment may suggest animism or totemism based beliefs. It remains unclear if these were shared beliefs throughout the Gulf, or if it represents only the belief system of few communities. Other communities may have had an ancestor cult for which evidence is seen in basalt statuettes (Cruz Castillo 2009). However, this has still been little argued.

The environment may have played a role in allowing the flourishing of local traditions. The environment in the Gulf in fact offered, in most parts of the coast, reliable sources to exploit: in terms of construction material, food sources (both marine and terrestrial), fertile land, and riverine access. None of these communities therefore relied on external communities: they had the choice to be connected or isolated from their neighbors and foreign centers. This self-containment afforded communities resilience and meant that local identities could develop without external influences and little competition for resources or territory. This symbiotic relationship between local people and the landscape they inhabited certainly was an integral part of their pluricultural identities.

In conclusion, the typical conceptions to identity such as language (or belonging to an ethnolinguistic group), religion, or political affiliation do not find application in the Gulf of Fonseca, either due to lack of evidence or evidence against. Instead, identities would

have been local and multivocal. These identities were built around communities through practice, social ties and environment. They would have had a shared conception of the "foreign".

The coeval habitation of those communities in the same settlements indicates a form of tolerance and unity between the different communities that may at times overlapped. This view coincides with the idea that was postulated since the 1980s that the Pacific area south of Quelepa would have been culturally heterogeneous, yet mixed (e.g. Dennett 2016; 2018). Craft surely played a role in producing and reproducing these local social identities through product which, stylistically and technologically, could be tied to a particular crafting community within a settlement.

8.2 Political Organization and Economies

From the evidence at hand, it is unlikely that the settlements were acting as satellites for larger centers. In fact, settlements like El Espino could have acted as centers in the region themselves. Other settlements in general seem smaller in scale. They may have been organized as small chiefdoms or *cacicazgos* with little elite to speak of. No traces of representation of elites were otherwise found on vessels. Vessel shapes such as cylinders are rather rare: they exist as Ulúa polychromes -which have been associated with elites-, and were mainly found at El Espino. Some of the other settlements may additionally indicate the use of longhouses as living areas. Those longhouses would have been shared amongst numerous biological families, and reduced levels of hierarchies.

While other settlements may only have had punctual exchange and sporadic trades with foreign economies, El Espino does appear to have been well-embedded in the barter economy out of Comayagua. Several causes could have been the source of the sudden appearance of Ulúa polychrome. While the settlement did (at least in part) already exist long before the polychromes, it is possible that a new trade route from Comayagua developed on the Nacaome River. How did El Espino become involved in that trade? Did merchants travelling from Comayagua establish themselves within a pre-existing community to facilitate or secure trade routes? From the examples of locally manufactured Las Vegas polychrome, it is clear that those foreign vessels were perceived as status symbols, but that local production may have made them more desirable to a local audience. This local production also indicates that ties with the north were not so developed as to privilege objects produced in Comayagua over locally produced wares.

Monte Libano is one of the earlier settlements and represents an economy that was more locally oriented towards the region of the Gulf of Fonseca, as represented by types such as Auriga and Estrella. Evidence from Comayagua trade wares are present in small quantities and could have been the result of sporadic, down-the-line trade. We have postulated that, for polychromes, the mental conception of the pot would have travelled with people; while the dispersion of utilitarian wares would have been made directly through inter-personal contact between potting communities. Does this mean that the region was, in the Chismuyo phase, economically isolated? More research is needed to answer this question. The brief abandonment of this site may be related to the eruption of the Ilopango in AD 536. While the settlement may not have been victim of severe ashfall, the temporary darkness due to ash clouds may have instigated a decision to relocate. As some ceramic traditions seem to continue in the second occupation, it is possible to postulate that later generations associated with this community subsequently returned to the site and resettled.

La Danta presents the only case where populations that were originally not indigenous to the Gulf of Fonseca settled, although only briefly. It is also possible that, in a region of active volcanism, the Ilopango may not have been the only eruption that would have impacted local lives. Was the settlement only ever intended for seasonal or periodic occupation or was the brevity the result of political tension in the region? Tolerance existed amongst other groups but would the people living in La Danta have been an exception? Does the difference in ceramic assemblages represent deeply rooted cultural differences to the other groups in the region? The assemblage does indicate a certain degree of isolation from direct neighbors. The causes for that isolation remain unknown. However, local material does indicate La Danta to have been part of another exchange economy sphere, possibly with communities in Pacific Nicaragua, accessing the same obsidian and jade. La Danta may also have entertained contact to sites such as Los Calpules (which were part of a Honduran-Nicaraguan highland tradition, with similitudes to Segovias material) in addition to Pacific Nicaraguan communities. If the occupation was seasonal and periodic, was the ceremonial occupation linked to other economic activities? As the settlement had riverine access to Güinope, it possible that the seasonality was due to periodic visits aimed to the acquisition of obsidian. While the underlying social process remains unclear, the uniqueness of this assemblage does indicate the site had a specific reason to come into being in the region of the Gulf and that it ultimately failed to fulfil its intended purpose, as indicated by the brief occupation.

In conclusion, the foreign elements that were identified at the sites are unlikely to have resulted from political affiliation with any of the larger centers. Rather, they seem opportunistic and dependent on the trade routes the sites were situated near to. Only in the case of La Danta does it seem like the site was built purposely on a trade route. However, trade in the Chismuyo phase was mainly land-based and trade routes using rivers would have only rarely been utilized. The development of the trade routes corresponds to a rise of Comayagua as a center in the middle of the first millennium. This development also overlaps with the development of seasonal salt exploitation in the Gulf of Fonseca (Kolbenstetter 2016). It is possible to postulate embeddedness of these seasonal activities within this large scale trade. It seems then that, much like questions of identity, question of politics and economy were intricately linked to the environment.

8.3 The Gulf of Fonseca and Liminality

The question of liminality is still open for the area of the Gulf of Fonseca. Is liminality today just an *ersatz* to raise the question of frontier and boundaries? I believe it can remain a useful framework when adjusting for the perspectives of the different agents.

The region of the Gulf certainly had a liminal status for the people who were not indigenous to it. It would have bben conceived as an area that was part of the voyage, either travelling through the riverine system or following the coastlines to long distance destinations. For merchants and travelers, the area of the Gulf would have been the "in-between": never the final goal, sometimes a short intermission, and at time, a rest stop for several months. The natural harbor would have constituted for these people a safe place that would have been symbolically laden accordingly; perhaps the reason of being of the small sized basalt figurines.

Travelling through the volcanic area of the Gulf also may have come with risks: Cosagüina's ashfalls may have rendered navigation along the coast of the point dangerous. Liminal spaces have often been associated with supernatural forces, linked to the unknown. As for the people indigenous to the region, what place did they have in the view of the merchants and seafarers in that liminal space? Is it possible that contact between them progressively transformed the liminality of the place to make it less foreign and ominous? The voyagers would have, in certain cases, been compelled to rely on local populations for safety and indications to navigate. This would have led to repeated encounters, and possibly durable relationships.

To the local inhabitants, the space would not have been conceived as liminal. The description given of locality extends to the space that would have been occupied by inhabitants through their daily activities, adjoining Tim Ingold's *taskscapes* (1991). These activities played a part in shaping local traditions. However, considering how close to each other settlements existed and integrating a high degree of mobility, spaces like hunting and fishing grounds would have never been liminal spaces, but shared spaces. The interaction between communities would have been constant, if not purposely avoided. The only liminal spaces in the region would have been determined by environmental features that restricted access such as mangrove forests, caves in the foothills, and the highlands. Interestingly, these places are also where petroglyphs and stone statuettes were found.

To what extent, however, can a space be considered liminal when it is constantly traversed by people? If the idea of cultural liminality is to rename what has previously been called a "buffer-zone" or "boundary" between large centers, then the Gulf does not qualify as a culturally liminal space. The environment afforded the Gulf constant connections to all regions, and it surely was not isolated or marginalized by larger policies: rather, good relationships with the inhabitants of the Gulf would have been essential to their economy and long-distance trade activities.

Culturally considered, the Gulf was heterogeneous. However, recent studies (e.g. Dennett 2016) have revealed that cultural heterogeneity is integral part of coastal Central America, from El Salvador to the Nicoya peninsula. By extension, calling the Gulf of Fonseca a boundary would qualify the better part of Central America as a culturally liminal area (c.f. Carmack and Salgado 2006).

8.4 Concluding Remarks: Picking up the pieces

In the previous section, I addressed the question of the Gulf of Fonseca and liminality. In fact, in separating our discipline into specializations, classifying our own work and role of our research, we create those areas (both in terms of materials and geographies) that become "outside" of our specialties, sometimes barely so. I believe the material of the Gulf of Fonseca has been avoided for so long because its pedigree is problematic: it does not fit in any of the cultural areas constructs. Furthermore, it doesn't allow for many answers to the big themes in archaeology: who were the people who inhabited the area? Why was their culture not permeable to outside influences? What did they believe in? What language did they speak? All in all, some of these questions—such as language and

ethnicity—may not be as important as one would think to understand who those people were: they expressed their identities in their social behaviors, in producing and in negotiating (sometimes reproducing) their environments. Certainly, this work did not address all these questions to the extent needed for a real understanding of this region. It did, however, delimit areas that may be essential to focus on in further research.

The incomplete nature of this overview first stemmed from the pedigree of the materials. Inexactitudes linked to methods of 1960s excavation (such as the radiocarbon dates) sometimes sent us in the wrong direction. The study of someone else's work and personal field notes often proved problematic. While a physical archaeological excavation never occurred, digging through 50-year-old materials was essentially archaeological work that required piecing together evidence, sometimes isolated bits and pieces, to attempt to reach the complete picture. Similar to archaeological work, the complete picture is never reached: missing details and a lack of understanding of a foreign subjectivity erased parts of the records and made it difficult to grasp essentials such as sampling methods, exportation and provenience of the materials. And much like in archaeology, one often must accept that the some of what is lost cannot be reconstructed—sometimes, 736 sherds out of a 31 837 sherds assemblage is all that is available. It does however open the path for future research.

With the rapid deterioration of the coastal areas of the Gulf of Fonseca and lack of governmental resources, no support for the preservation or rescue excavation of archaeological material can be provided. Declaring archaeological material on the land is at the discretion of the owner and is often avoided for fear of loss of agricultural land. Owners and locals are often aware of the archaeology on the land but do not identify with it as their heritage. Between agricultural work, shrimp ponds, and real estate development, archaeological remains of the cultures once inhabiting the Gulf of Fonseca are being destroyed at an impressive rate. There is therefore a great urgency for archaeological research in the region, where almost all is left to uncover.

Full excavation and documentation of sites will be necessary where possible to establish a clear timeline. Focus on subsistence patterns would be recommended to further explore the relationship between humans and their environment. Additional aDNA studies could provide insights on the original settlement of the Gulf, while isotope analysis could reveal how far people travelled within the landscape and exploited waterways. As for the sherds

at hand, chemical analysis and petrography should be considered to confirm speculations of import and local production.

Given the short timeline (15 years at most if degradation continues at the current rates), the priority is to document sites which are still visible, record settlement patterns, and conduct surface collection. On sites where better stratigraphy can be expected, test pits will be of necessity. Sites that have so far been preserved need to be subjected to more detailed investigations and measures need to be taken for their conservation. These better-preserved sites are particularly expected in the natural mangrove forests (Reserva de Vida Silvestres Bahia Chismuyo, Los Delgaditos, Las Iguanas, and San Bernardo). The islands off the coast have been spared so far from large-scale agricultural work. However, a real estate development project centered on these islands is imminent. These sites should allow us better insights on the nature of the trade occurring in the region, but also on the seasonal activities occurring in the Gulf.

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Abstract

The Gulf of Fonseca is an archaeologically problematic region. The area was, before conquest, occupied by several language groups. Previous research noted that archaeological material greatly diverges from site to site. Moreover, the archaeology of the region has developed in the shadows of the culture areas surrounding it. This research aims to shine some light on the prehistory of the Gulf of Fonseca, focusing on three sites located in the modern Department of Choluteca, Honduras. The cultural heterogeneity will hold a central place in this research, and will be addressed through the identification of non-ethnic forms of belonging. This thesis is based on ceramic material recovered by Claude Baudez in the 1960s in the Honduran part of the region. Through a frequency analysis and a statistical cluster analysis of technological markers observed on the ceramic material this thesis aims to inform on the local and regional developments of crafting traditions, the construction of potting communities and site significance on regional and interregional scale. It further offers a narrative exploring questions of social, political and religious identities in the Gulf of Fonseca. To this end, this research is embedded in a theoretical framework which combines relational archaeology, *chaine opératoire* and technological choices, and communities of practice and networks of action. This research reveals a multi-vocal past for the Gulf of Fonseca expressed in deeply rooted local traditions and practices.

Resumen

El Golfo de Fonseca es un área que es arqueológicamente problemática. El area era, en tiempos precolombinos, ocupada por grupos lingüísticos diversos. En investigaciones arqueológicas pasadas se observó que el material arqueológico es muy diferente de sitio a sitio. Adicionalmente, la arqueología de la región se desarrolló de manera distinta debido a las dos áreas culturales que rodean al Golfo de Fonseca. Le presente investigación quiere aclarar la prehistoria del área, enfocándose en tres sitios arqueológicos situados en el departamento moderno de Choluteca, Honduras. La heterogeneidad cultural es un elemento central en esta investigación: se explorará a través la identificación de formas no-étnicas de pertenecer. La tesis utiliza material arqueológico colectado por Claude Baudez en los años sesentas en la parte Hondureña de la región. A través una análisis de frecuencias y de grupos estadísticos de marcadores tecnológicos observados por el material cerámico, esta investigación intenta discutir el desarrollo local y regional de tradiciones cerámicas, la organización de comunidades alfareras, y la significación regional e interregional de los sitios arqueológicos. También ofrece una narrativa que integra cuestiones de identidad social, política y religiosa en el Golfo de Fonseca. Por esta meta, la investigación utiliza un marco teorético que combina arqueología relacional, *chaîne opératoire* y la selección tecnológica, a ideas de comunidades de prácticas y red de acciones. La investigación resulta en un imagen multivocal del pasado en el Golfo, expresado por tradiciones y prácticas locales.

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Appendix A: Cluster Analysis Results

LIP

Forming Techniques	0- Unmodified coil 1-folded 2-rolled 3-reinforcement coil 4-double coiling 5-modelled from body
Surface Treatment	0-crude 1-smoothed 2-lightly burnished 3-higly burnished 4-polished 5-scraped 6-slipped
Decoration	0-Undecorated 1-cutting technique 2-displacement technique 3-joining technique 4-painting

	La Danta
	Monte Libano
	El Espino

BODY

Surface Treatment	0-Crude 1-Smoothed 2-Lightly Burnished 3-Highly burnished 4-Polished 5-scraped 6—smeared
Slipping	0-Unslipped 1-single slip 2-double slip
Pre-drying Decoration	0-Undecorated 1-painting 2-brushing 3-incising 4-excising 5-combing 6-impressing with tools 7-digital impressing 8-punctuating/perforating 9-Appliqué
Post-drying/ Post-firing decoration	0-none 1-incising 2-excising
Temper	1-calcareous 2-ash 3-grog

Firing	1-Oxidized, no core 2-Oxidized with core, organics originally present, diffuse core margin 3-Reduced, no organics, diffuse core margin 4-Reduced, no organics, black or grey may extend through the walls 5-Reduced, organics originally present, diffuse core margin 6-Reduced, no core 7-Reduced, rapidly cooled, sharp core margin 8-Reduced, rapidly cooled, reduced again, cooled again, double core

Cluster 1

	Forming Techniques	Surface Treatment	Decoration	Body ST	Slipping	Body Decoration	Body Post-Firing	Temper	Firing	Lip Cluster	Body Cluster
ACTJ.11	0	6	4	4	2	1	0	3	7	3	1
CALI.24	0	6	4	3	2	19	0	0	1	3	1
CCG.13	0	6	4	3	2	1	0	0	5	3	1
CHOL.PA.2.4				3	2	0	0	0	7		1
CORGUA.19				3	2	14	0	1	1		1
CORGUA.6	0	6	4	3	2	2	1	0	2	3	1
CORGUA.7				3	2	13	0	0	1		1
GUAT.16				4	2	1	0	0	2		1
GUAT.17				4	2	1	0	0	2		1
GUAT.2				4	2	1	0	2	1		1
GUAT.5	0	6	4	3	2	1	0	0	1	3	1
GUAT.6				4	2	1	0	0	1		1
GUAT.7	0	6	4	3	2	1	0	3	7	3	1
GUAT.8				3	2	14	0	3	7		1
LAN.12				3	2	1	0	0			1
LAN.4				5	1	1	0	0	1		1
PAP.20	0	6	4	4	2	1	0	23	1	3	1
PAP.28				3	2	1	0	2	1		1
SB10.10	0	6	4	3	2	1	0	0	2	3	1
SB4.39	0	3	4	3	0	1	0	0	1	3	1
SB5.11	0	3	4	4	0	1	0	0	1	3	1
AM/MA.12				2389	0	19	0	0	7		1
CHIS.1.7				3	0	2	1	0	5		1
CHIS.1.9				123	0	189	0	3	1		1
CHIS.2.8	0	3	4	3	0	1	0	3	1	3	1
SB5.21				1	0	2	0	1	1		1
SB6.12				3	0	3	0	0	1		1

Cluster 2

ACTJ.7	0	6	4	4	1	1	0	2	2	4	2
ACTJ.9	0	6	4	4	1	1	0	2	1	4	2
CHOL.PA.1.3.				4	1	1	0	2	3		2
CORGUA.8				3	1	1	1	0	7		2
GUAT.15				4	1	1	0	0	7		2
GUAT.21				4	1	1	0	3	2		2
GUAT.3				4	1	1	0	3	1		2
LAN.2				4	1	1	0	0	7		2
PAP.1	0	6	4	4	1	1	0	0	4	4	2
PAP.10				4	1	1	0	0	4		2
PAP.11				4	1	1	0	0			2
PAP.12				4	1	1	0	0	1		2
PAP.14				4	1	1	0	0	1		2
PAP.15	0	6	4	4	1	1	0	0	2	4	2
PAP.17	0	6	4	4	1	1	0	0	6	4	2
PAP.23	0	4	4	4	1	1	0	0	1	4	2
PAP.26				4	1	1	0	0	8		2
PAP.3				4	1	1	0	0	4		2
PAP.4				4	1	1	0	0	5		2
PAP.5	0	6	4	4	1	1	0	0	8	4	2
PAP.6				4	1	1	0	0	3		2
PAP.7	0	6	4	4	1	1	0	3	3	4	2
SB7.11	0	6	4	4	1	1	0	0	7	4	2
AM.38				34	1	1	1	0	1		2
CHOL.PA.3.9.				2	1	1	1	2	1		2
SB8.4				4	1	1	1	0	1		2
SB9.1				4	1	1	1	1	1		2

Cluster 3

AM.35				2	1	0	0	0	4		3
CHOL.PA.1.2.	0	5	0	2	1	0	0	3		7	3
PAP.47				4	1	0	0	0	8		3
SB10.2	1	9	0	13	1	0	0	23	1	7	3
SB4.46				2	1	0	0	0	1		3
SB4.52	6	5	0	12	1	0	0	0	1	7	3
SB5.20	0	10	0	12	1	0	0	3	2	7	3
SB7.17				2	1	0	0	3	1		3
SB9.11	0	5	0	2	1	0	0	2	2	7	3
SB9.3	0	5	0	2	1	0	0	23	1	7	3
AM.22				12	1	34	0	0	2		3
CHOL.NC.17				2	1	24	0	0	1		3
SB4.44	0	5	0	2	1	0	0	3	5	7	3
SB7.16	3	5	8	2	1	0	0	0	7	7	3
SB7.6				2	1	8	0	0	1		3
SB9.16	3	5	0	2	1	0	0	3	1	7	3
ACTJ.6				2	1	3	0	0	7		3
ACTJ.8	0	5	0	2	1	3	0	3	7	7	3
CALI.19	0	6	4	4	1	0	0	2		7	3
CHIS.1.13				36	1	0	0	0	2		3
CHIS.1.17	0	6	0	4	1	9	0	3	1	7	3
CHIS.1.5	0	6	0	36	1	0	0	0	7	7	3
S.L.1	0	6	0	4	1	0	0	0	7	7	3
SB4.43	0	6	0	2	1	0	0	2	2	7	3
SB5.31	1	5	0	2	1	0	0	1	1	7	3

Cluster 4

CCG.1	0	5	4	2	1	1	0	0	5	8	4
F/A.2	0	6	4	5	1	1	0	0	1	8	4
GUAT.18				1	1	1	0	3	1		4
LAN.15				5	1	1	0	0	1		4
LAN.16				5	1	1	0	0	1		4
LAN.19				5	1	1	0	0	1		4
LAN.23				5	1	1	0	0	7		4
LAN.24				5	1	1	0	0	7		4
LAN.29				25	1	1	0	0	7		4
LAN.7				5	1	1	0	0	1		4
LAN.9	0	6	4	5	1	1	0	0	1	8	4
SB4.40	0	5	4	2	1	1	0	23	1	8	4
SB5.33	0	5	4	2	1	1	0	3	2	8	4
SB6.14	0	5	4	2	1	1	0	23	2	8	4
SB7.13	0	5	4	2	1	1	0	2	1	8	4
SB7.8	0	5	4	2	1	1	0	0	1	8	4
SB9.17	1	5	4	2	1	1	0	3	2	8	4
AM.11				13	1	1	0	0	1		4
AM.15	0	5	0	2	1	1	0	2	1	8	4
AM/MA.10	1	6	4	239	1	1	0	0	7	8	4
AM/MA.15	0	4	9	2	1	1	0	0	2	8	4
PAT.11				2	1	1	0	2	1		4
PAT.3	0	6	4	2	1	1	0	0	1	8	4
PAT.4				2	1	1	0	2	1		4
PAT.9	0	6	4	2	1	1	0	0	1	8	4
SB5.39				2	1	1	0	0	1		4
CHIS.1.12	0	5	3	2	1	1	0	3	1	8	4
CHIS.1.2	0	5	7	2	1	1	0	0	1	8	4

Cluster 5

AM.25				5	1	4	0	0	6		5
CALI.12	0	6	0	3	1	0	0	2	1	2	5
CALI.16				3	1	0	0	0	1		5
CALI.17				3	1	0	0	0	1		5
CALI.18				3	1	0	0	0	1		5
CALI.21				3	1	0	0	2	1		5
CALI.22				3	1	0	0	0	1		5
CHOL.PA.1.8.				3	1	0	0	23	1		5
CORGUA.11				3	1	4	0	2	2		5
CORGUA.15				3	1	14	0	0	5		5
CORGUA.18	4	6	4	3	1	13	0	0	7	1	5
CORGUA.2				3	1	14	0	0	7		5
SB8.27	0	11	0	3	1	0	0	1		2	5
AM.32				3	1	13	2	0	2		5
AM.5				59	1	4	0	0	4		5
SB9.12				3	1	13	0	0	1		5
CHIS.1.14	3	5	0	3	1	0	0	2	1	2	5
CHIS.1.3	0	6	4	3	1	0	0	3	7	2	5
CHOL.PA.3.6				3	1	0	0	1	2		5

Cluster 6

CHOL.PA.1.12.				12	0	9	0	2	1		6
SB4.51	0	2	0	13	0	0	0	23	1	6	6
AM.21				12	0	3	0	0	1		6
CAC.2				14	0	10	0	1	1		6
CAC.3				14	0	10	0	0	1		6
CAC.4				14	0	10	0	23	1		6
CAC.5				13	0	10	0	3	2		6
CAC.6				13	0	10	0	0	1		6
CAC.7				15	0	10	0	3	1		6
CAC.8				12	0	10	0	0	7		6
CAC.9				12	0	10	0	0	5		6
SB10.7				2	0	8	0	0	1		6
SB5.3				23	0	6	0	0	1		6
SB6.13	1	2	1	2	0	0	0	0	1	6	6
SB8.24	7	2	5	2	0	1	0	0	7	6	6
ACTJ.12	3	0	0	23	0	3	0	1	5	6	6
CHIS.1.1	6	2	2	12	0	0	0	3	1	6	6
CHIS.1.10	4	3	0	23	0	3	0	3	2	6	6
CHIS.1.11				12	0	13	0	0	2		6
CHIS.1.16				2	0	3	0	3	2		6
CHIS.1.24	4	3	2	13	0	0	0	3	6	6	6
CHIS.1.8				2	0	15	0	3	1		6
CHIS.2.?	2	5	0	12	0	5	0	3	1	6	6
CHIS.2.10	4	2	2	23	0	0	0	3	4	6	6
CHIS.2.11				289	0	0	0	3	1		6
CHIS.2.12	5	0	0	239	0	0	0	3	1	6	6
CHIS.2.4				2	0	3	0	3	3		6
CHIS.2.6				129	0	5	0	0	1		6
CHIS?				12	0	369	0	2	1		6
SB10.1				12	0	5	0	3	4		6
SB4.54				12	0	25	0	0	1		6
SB5.7	2	0	0	28	0	0	0	0	1	6	6
SB7.10				12	0	13	0	3	5		6
SB8.36				2	0	5	0	3	2		6

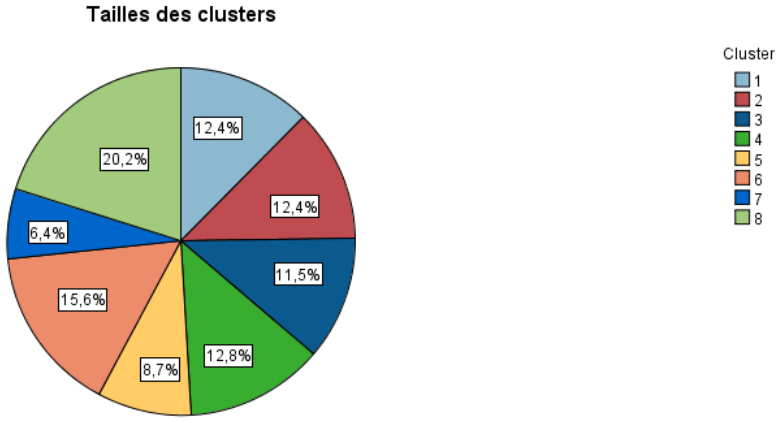
Cluster 7

GUAT.20				24	1	1	0	2	1		7
AM.30	0	6	0	24	1	0	1	0	1	5	7
AM.6	3	0	0	24	1	6	0	2	1	5	7
AM/MA.11	0	5	6	23	1	1	0	3	1	5	7
PAT.7	0	4	4	24	1	1	0	2	1	5	7
SB6.11				23	1	13	0	0	1		7
SB6.4				23	1	1	0	0	1		7
CHIS.1.15				23	1	89	0	3	1		7
CHIS.1.6				28	1	12	0	0	1		7
CHIS.2.7				8	0	7	0	3	7		7
CHIS.2.9	1	7	0	289	1	7	0	3	1	5	7
SB4.55	2	2	0	28	1	7	0	3	4	5	7
SB6.1	1	8	0	23	1	7	0	3	1	5	7
SB7.14				8	1	7	0	3	7		7

Cluster 8

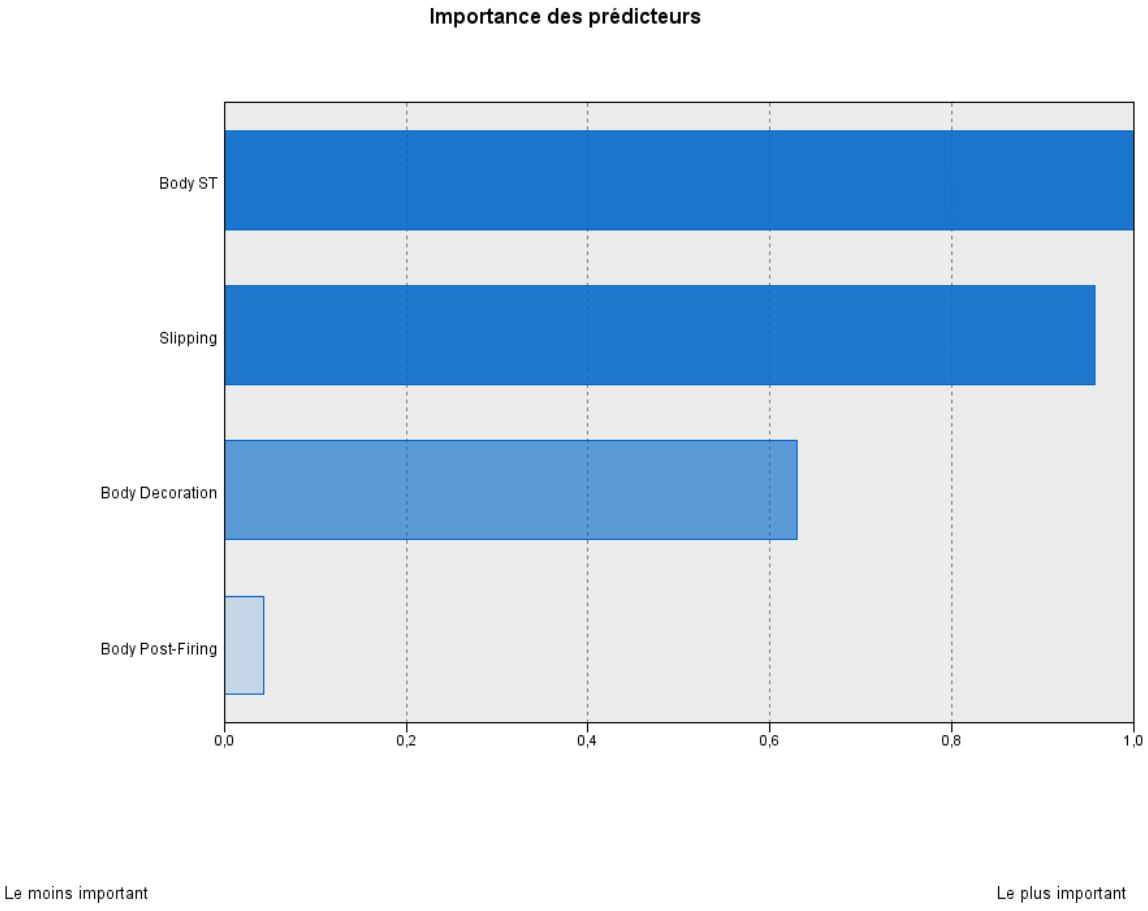
ACTJ.3	0	6	4	3	1	1	0	0	2	1	8
CALI.23				3	1	1	0	2	1		8
CCG.21	0	6	4	3	1	1	0	0	2	1	8
CCG.24	0	6	4	3	1	1	0	0	7	1	8
CHOL.PA.2.1.	0	6	4	3	1	1	0	0	7	1	8
CHOL.PA.2.2	0	6	4	3	1	1	0	0	7	1	8
CHOL.PA.3.2.				3	1	1	0	23	5		8
CORGUA.1				3	1	1	0	0	7		8
CORGUA.14				3	1	1	0	0	7		8
F/A.5	0	6	4	3	1	1	0	0	2	1	8
F/A.6				3	1	1	0	23	1		8
F/A.7	0	6	4	3	1	1	0	23	1	2	8
F/A.8				3	1	1	0	23	1		8
F/A.9				3	1	1	0	0	1		8
GUAT.1				3	1	1	0	2	1		8
GUAT.12	0	6	4	3	1	1	0	0		1	8
GUAT.13				3	1	1	0	0	2		8
LAN.10				3	1	1	0	0	1		8
SB4.53	0	6	4	3	1	1	0	2	1	2	8
SB5.10				3	1	1	0	0	7		8
SB5.36				3	1	1	0	3	7		8
SB6.2				3	1	1	0	0	7		8
SB6.7				3	1	1	0	0	2		8
SB8.35				3	1	1	0	3	7		8
SB9.15	0	6	4	3	1	1	0	0	7	1	8
PAT.1	0	6	4	3	1	1	0	0		1	8
PAT.10	0	6	4	3	1	1	0	2	7	2	8
PAT.2	0	6	4	3	1	1	0	2	1	2	8
PAT.5	0	6	4	3	1	1	0	0	1	1	8
PAT.6	0	6	4	3	1	1	0	2	1	2	8
PAT.8	0	6	4	3	1	1	0	2	1	2	8
SB10.8				3	1	1	0	0	1		8
SB4.4	0	5	4	3	1	1	0	0	2	1	8
SB5.34	1	6	4	3	1	1	0	0	7	1	8
SB5.38	0	6	4	3	1	1	0	0	1	1	8
SB7.3	0	5	4	3	1	1	0	2	1	2	8
SB9.7				3	1	1	0	2	1		8
CHIS.1.4	0	6	4	3	1	1	0	0	1	1	8
SB5.19	0	6	4	3	1	1	0	3	1	2	8
SB7.5				3	1	1	0	2	1		8
SB8.1	0	6	0	3	1	1	0	1	7	2	8
SB8.21	0	6	0	3	1	1	0	1	5	2	8
SB9.14				3	1	1	0	3	5		8
SB9.9				3	1	1	0	2	2		8
AM.19	7	3	1						2		

Cluster size



Taille du cluster le plus petit	14 (6,4%)
Taille du cluster le plus grand	44 (20,2%)
Rapport des tailles : Cluster le plus grand par rapport au cluster le plus petit	3,14

Importance of the predicting variables

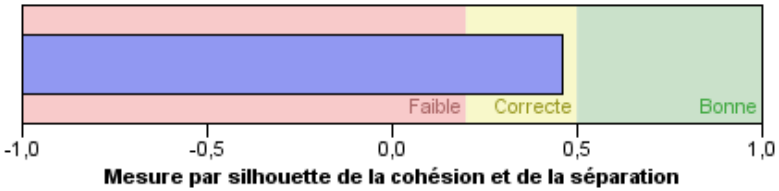


Model Used and Cluster Quality assessment

Récapitulatif du modèle

Algorithme	TwoStep
Entrées	7
Clusters	8

Qualité des clusters




```
TWOSTEP CLUSTER
  /CATEGORICAL VARIABLES=BodyST Slipping BodyDecoration BodyPostFiring
  /DISTANCE LIKELIHOOD
  /NUMCLUSTERS FIXED=8
  /HANDLENOISE 0
  /MEMALLOCATE 64
  /CRITERIA INITHRESHOLD(0) MXBRANCH(8) MXLEVEL(3)
  /VIEWMODEL DISPLAY=YES
  /SAVE VARIABLE=TSC_6498.
```

Clusters for Body sherds

Clusters

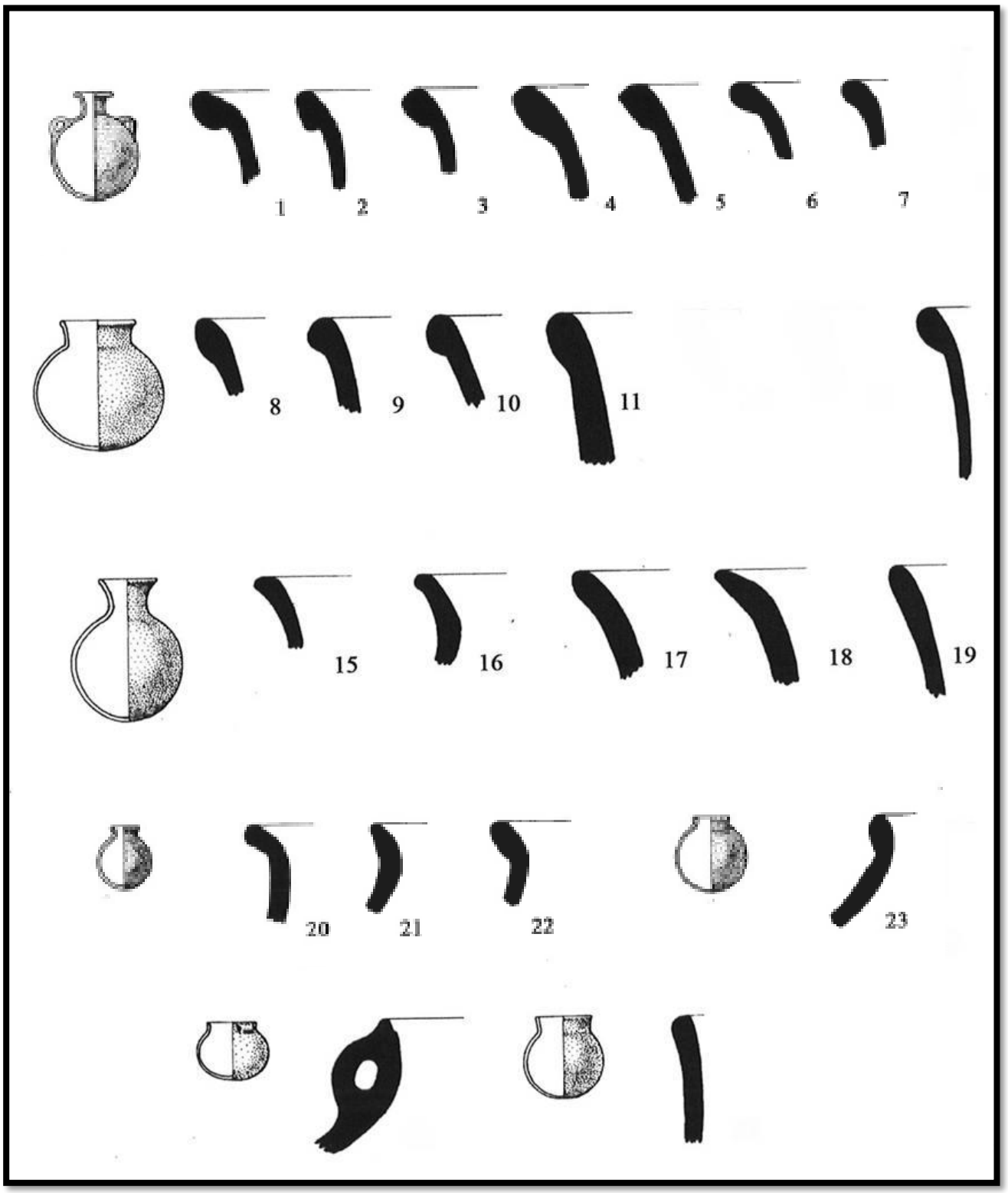
Importance des entrées (prédicteurs)
1,0 0,8 0,6 0,4 0,2 0,0

Cluster	8	6	4	1	2	3	5	7
Libellé								
Description								
Taille	20,2% (44)	15,6% (34)	12,8% (28)	12,4% (27)	12,4% (27)	11,5% (25)	8,7% (19)	6,4% (14)
Entrées	Body ST 3 (100,0%)	Body ST 12 (32,4%)	Body ST 2 (57,1%)	Body ST 3 (55,6%)	Body ST 4 (88,9%)	Body ST 2 (60,0%)	Body ST 3 (89,5%)	Body ST 23 (35,7%)
	Slipping 1 (100,0%)	Slipping 0 (100,0%)	Slipping 1 (100,0%)	Slipping 2 (66,7%)	Slipping 1 (100,0%)	Slipping 1 (100,0%)	Slipping 1 (100,0%)	Slipping 1 (92,9%)
	Body Decoration 1 (100,0%)	Body Decoration 0 (23,5%)	Body Decoration 1 (100,0%)	Body Decoration 1 (59,3%)	Body Decoration 1 (100,0%)	Body Decoration 0 (76,0%)	Body Decoration 0 (57,9%)	Body Decoration 7 (35,7%)
	Body Post-Firing 0 (100,0%)	Body Post-Firing 0 (100,0%)	Body Post-Firing 0 (100,0%)	Body Post-Firing 0 (92,6%)	Body Post-Firing 0 (81,5%)	Body Post-Firing 0 (100,0%)	Body Post-Firing 0 (94,7%)	Body Post-Firing 0 (92,9%)

Appendix B: Vessel Shapes, Wall and Rim Profiles (Baudez, unpublished manuscript)

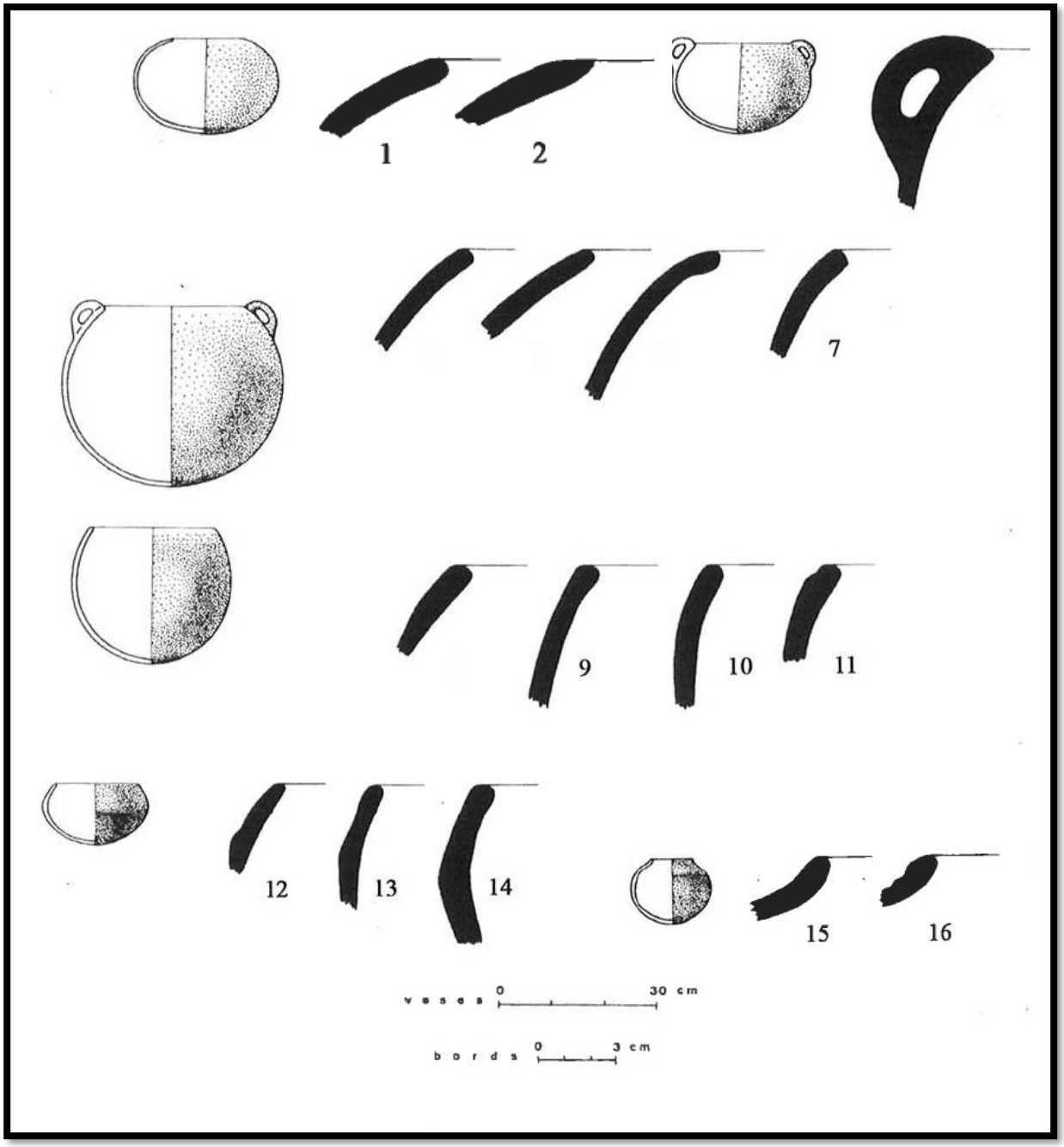
Chismuyo Phase Ceramics (Monte Libano)

Jars with restricted necks



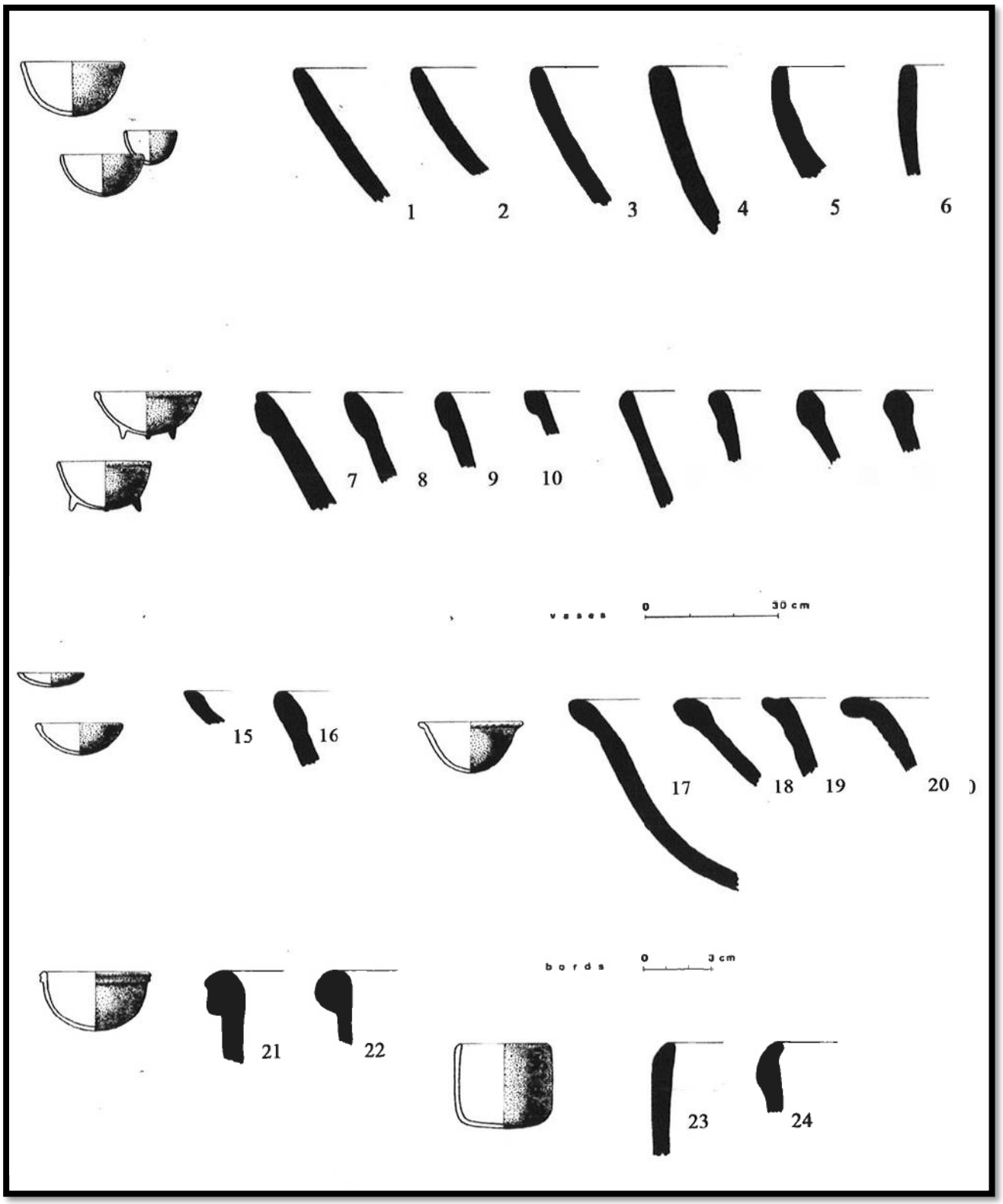
Types: Jeronimo Cepillado (1,6,18), Orion Rojo (2,7,8,10,12,17,20,23), Toalla Inciso (3,4,9,14,15), Auriga Cafe (5,11,13,16,19,21,22), Bolo Rosado (24), Muérdalo Naranja (25).

Restricted Vessels (without neck)



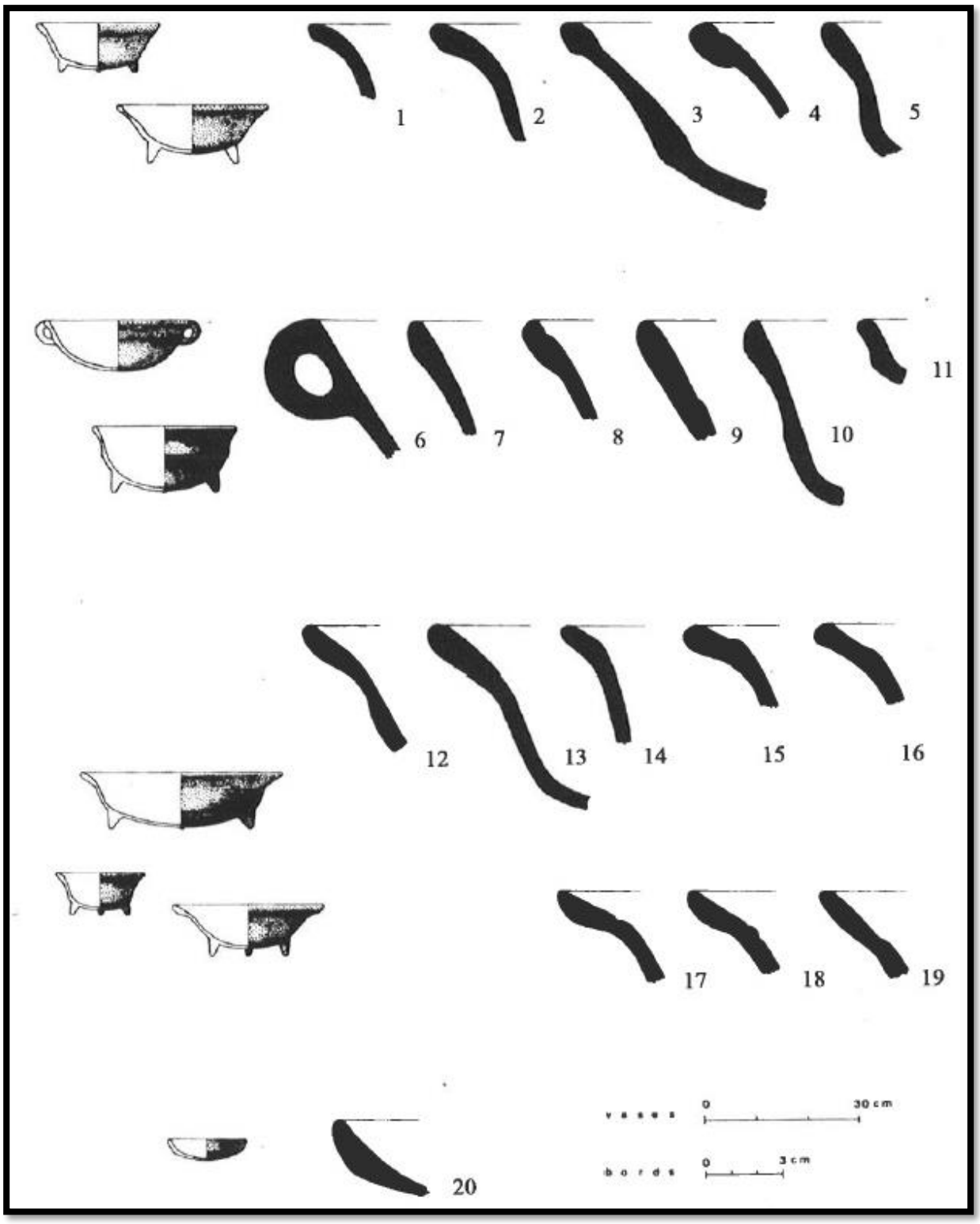
Types: Auriga Café (1,2,4-9,12,13), Ubaldo Rojo(3), Orión Rojo (10,14,15), Bolo Rosado(11,16).

Unrestricted vessels with simple contours



Types: Auriga Cafe (1, 6,7,8,21), Orion Rojo (2,4,5,9,10,14—16,22), Muérdalo Naranja (3,11,13[diam.24 cm],23 [diam.20 cm],24 [diam.18]), Bolo Rosado (12,19,20), Chepito Raspado (17[diam.24 cm]), Ubaldo Rojo (18).

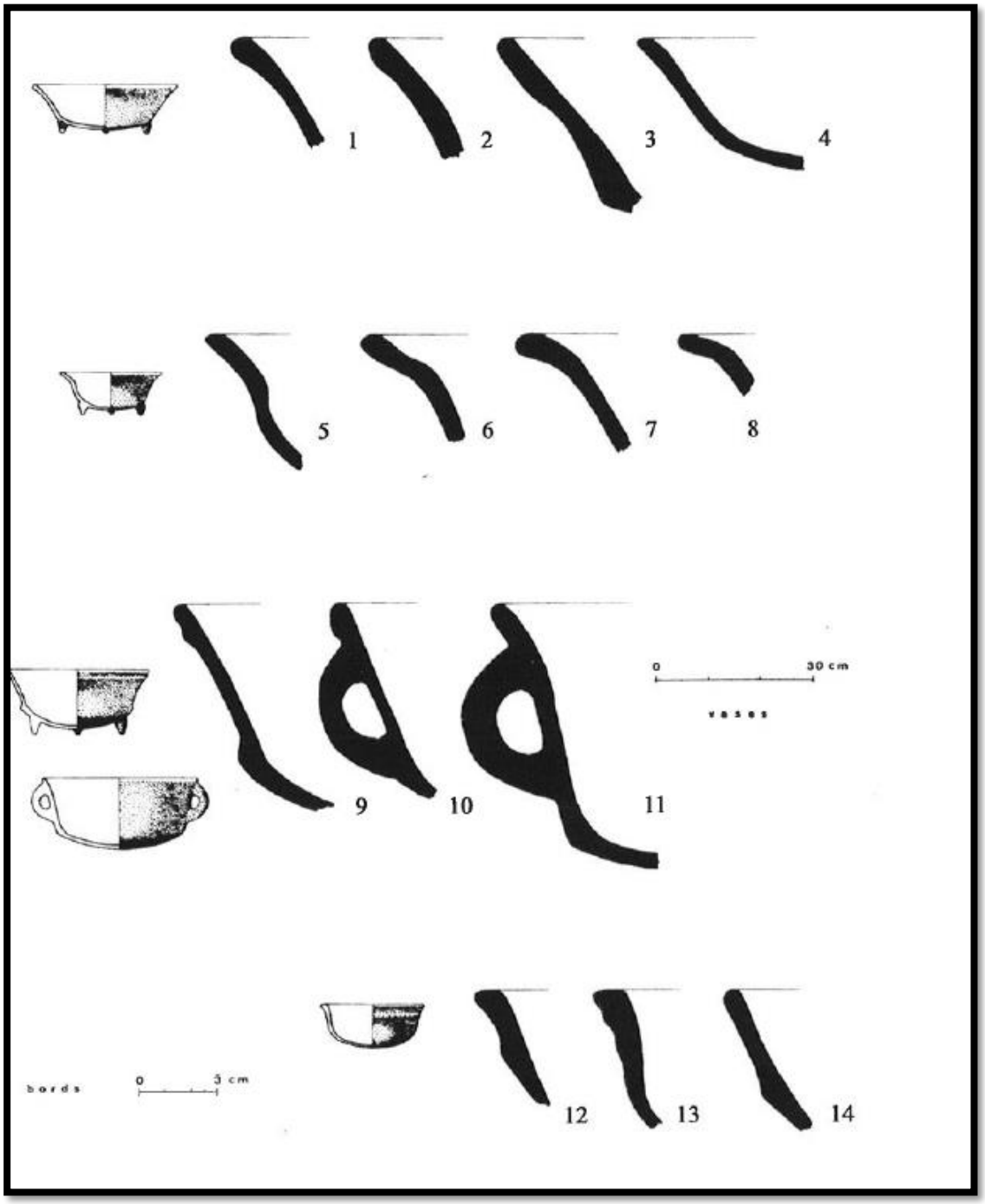
Unrestricted vessels with composite contour



Types: Muérdalo Naranja (1, 2 [diametro de la boca :26 cm], 3, 5,7,10 [diametro de la boca :29 Cm], 12, 13 [diametro : 40 cm], 14 [diametro : 18], 15 [diametro : 16],16,19). B010 Rosado (4, 8,9,1 1, 17,18), Toalla Inciso (6), Chepito Raspado (20).

San Lorenzo Phase Ceramics (Monte Libano)

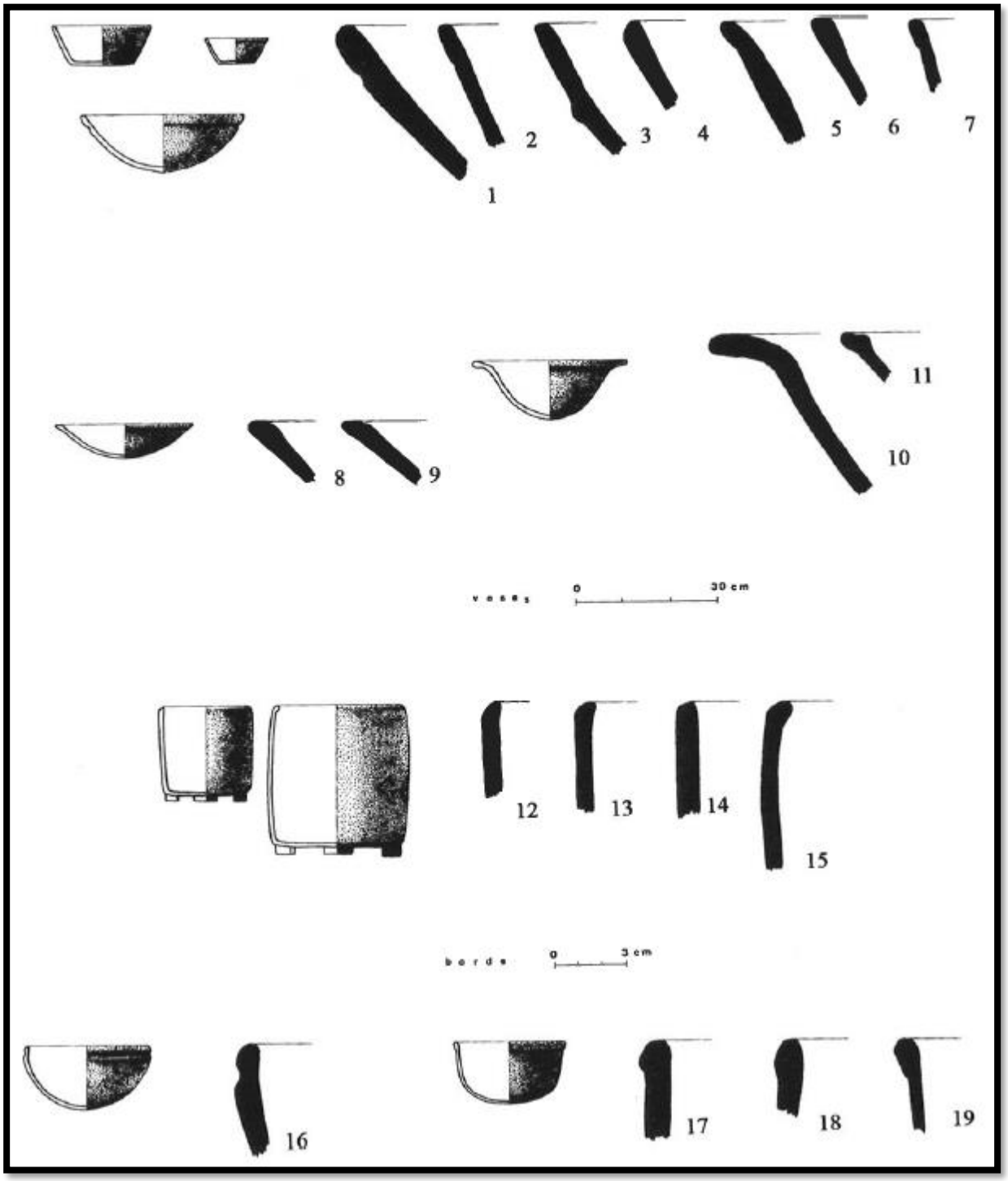
Unrestricted vessels with composite contours



Types: Goyo Rojo sobre Beige (5, 12, 13), Cipote Rojo sobre Beige (10,14 [diametro de la boca : 18cm]), Palmerola Negro sobre Rojo (1 1 [diametro de la boca :31 cm]), Chiri Policromo (1,2, 4,6,7),Janiché Policromo (3), Calicanto Policromo (8), Inciso no Clasificado (9).

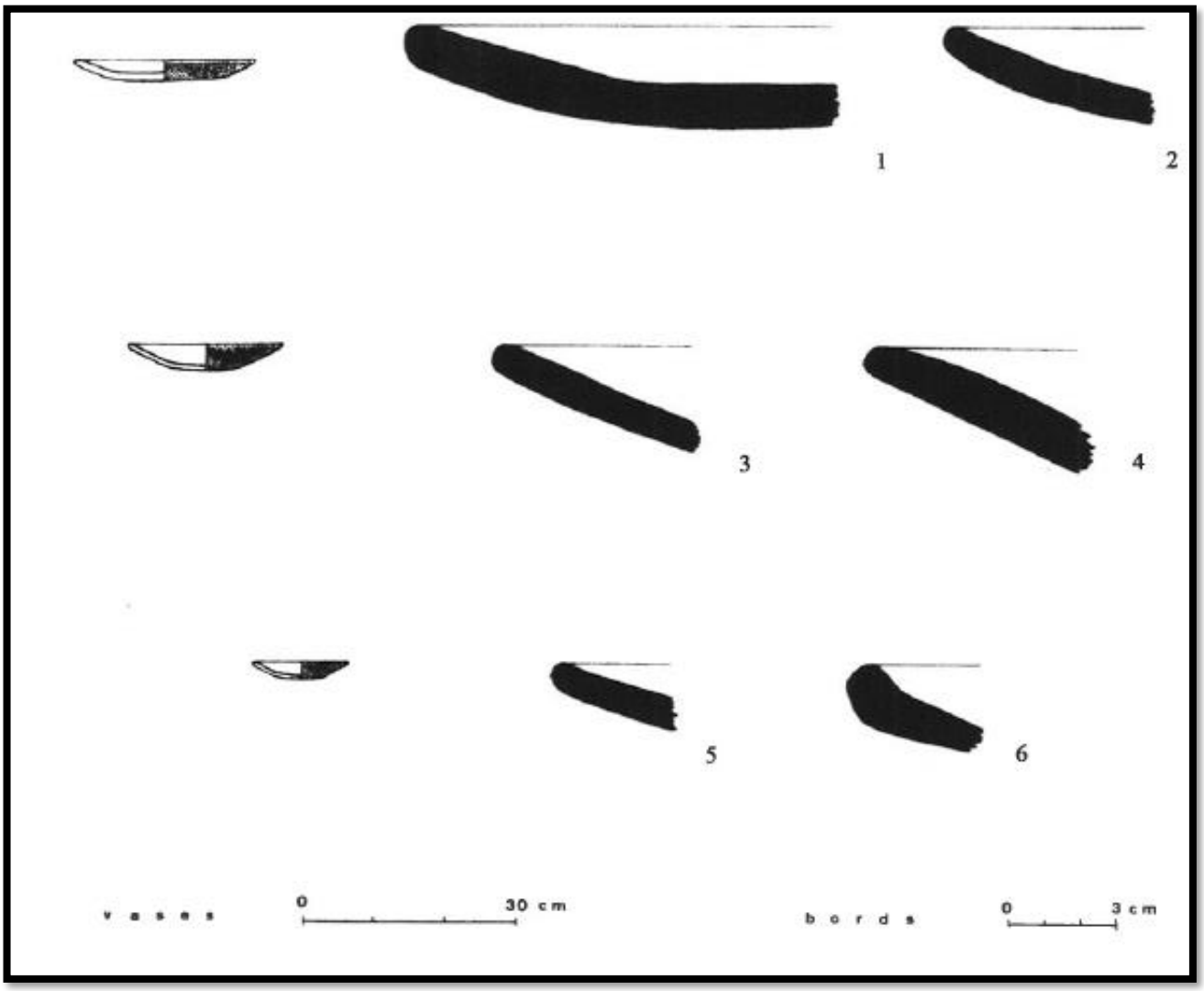
San Lorenzo and Fonseca phase ceramics

Unrestricted vessels with simple contours



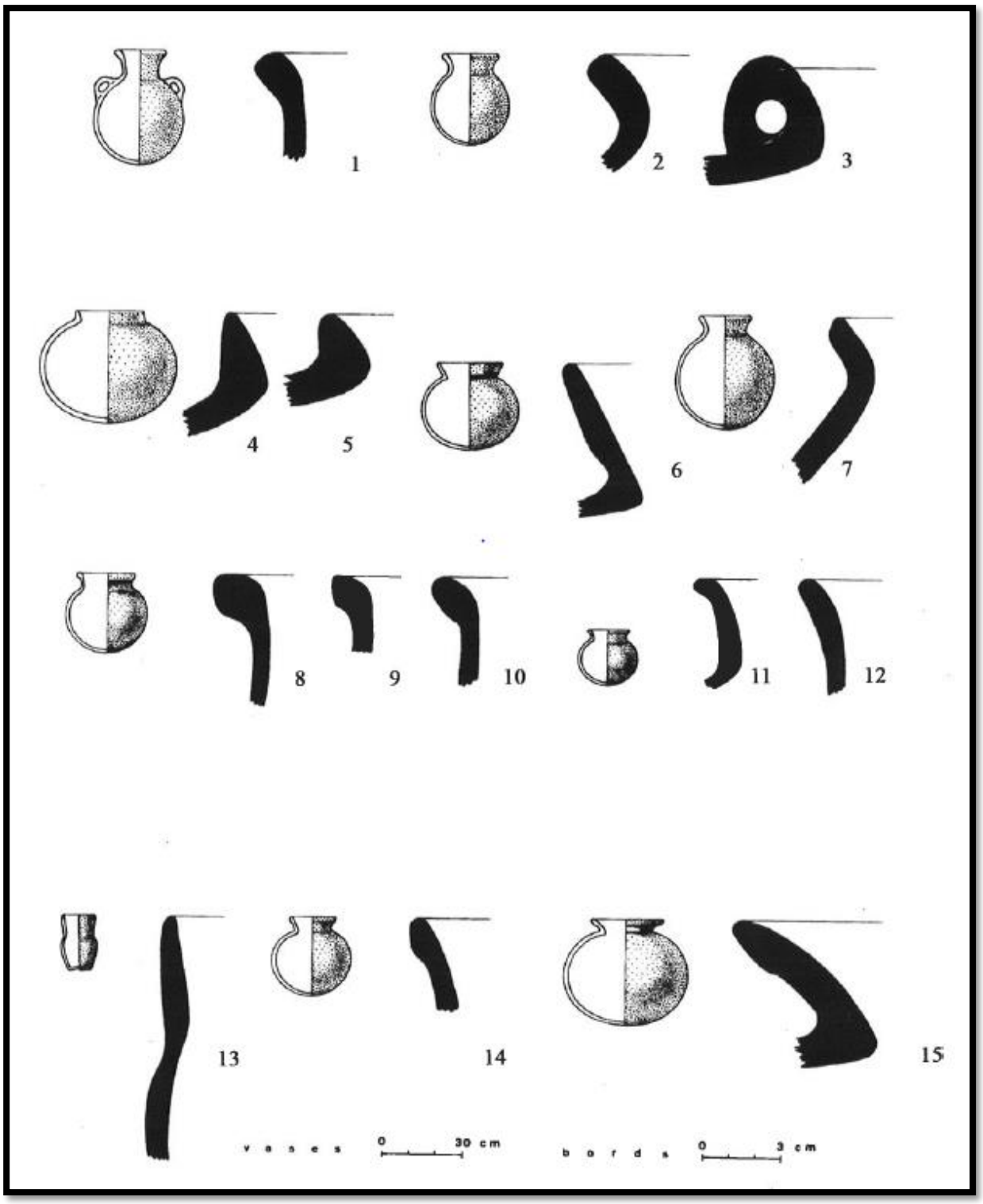
Types: Goyo Rojo sobre Beige (2,4,6-7,11), Cipote Rojo sobre Beige (1 [diametro 36 cm], 3 [diametro 30 cm], 16), Palmerola Negro sobre Rojo (5 [diametro 30 em], 10 [diametro 34], 15 [diametro 28], 19 [diametro 24], Calicanto Policromo (8,9), Chiri Policromo (12, 13 [diametro 20], 14 [diametro 26], Dragon Cafe (17), Hydra Rojo (18).

Comales and plates



Types: Dragon cafe (1 [diametro 26 cm], 2, 4), Hydra Rojo (3 [diametro 22 cm], 5 [diametro 14]), Chiri policromo (6).

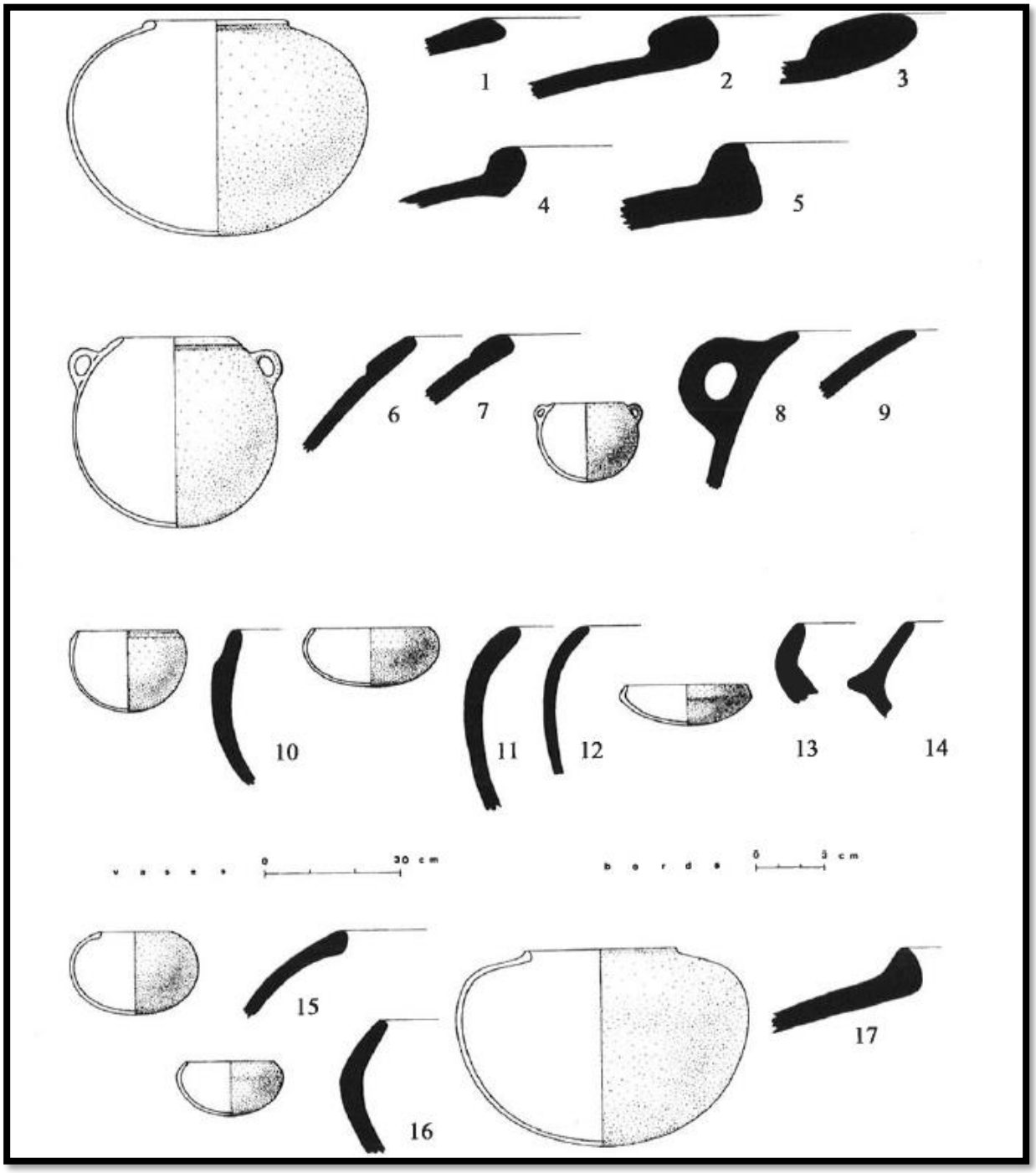
Jars with restricted necks



Types: Dragon Café (1-6, 15 [diametro :27 cm), Hydra Rojo (7), Triunfo Rojo sobre Rojo (8-10), Chiri Policromo (11-13), Chufia Policromo (14 [diametro :16].

San Lorenzo, Fonseca, Amapala, Malalaca phase ceramics

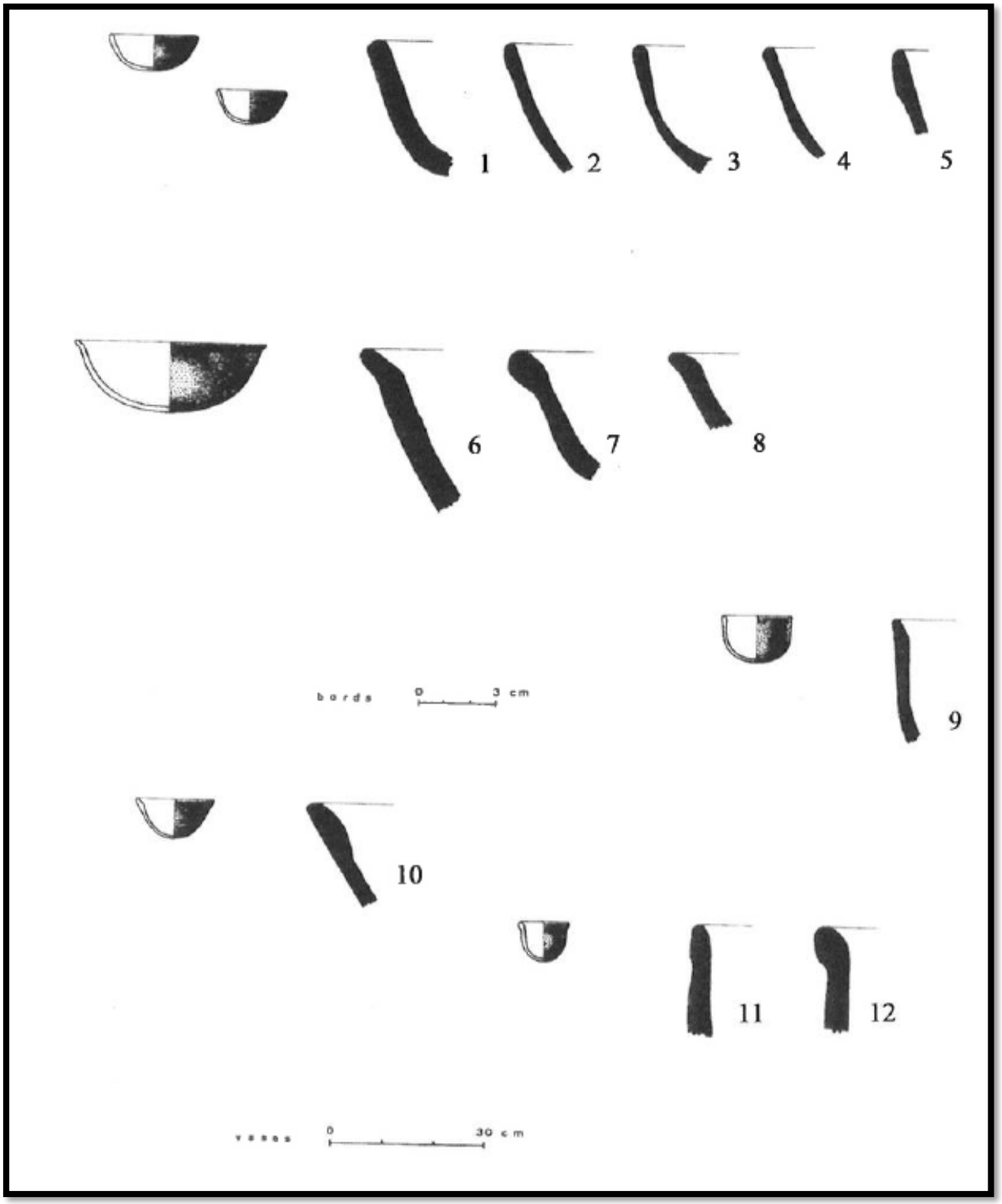
Restricted vessels (without necks)



Types: Hydra Rojo (1 [diametro :22 cm], 2, 3, 7), Dragon Cafe (4, 5, 6, 13), Palmerola Negro sobre Rojo (8, 9, 12), Cipote Rojo sobre Beige (10), Chiri Policromo (11), Pupusa Policromo (15), Sopapo Rojo (16), Sandia Cafe (17 [diametro 32 cm]), No clasificado (14).

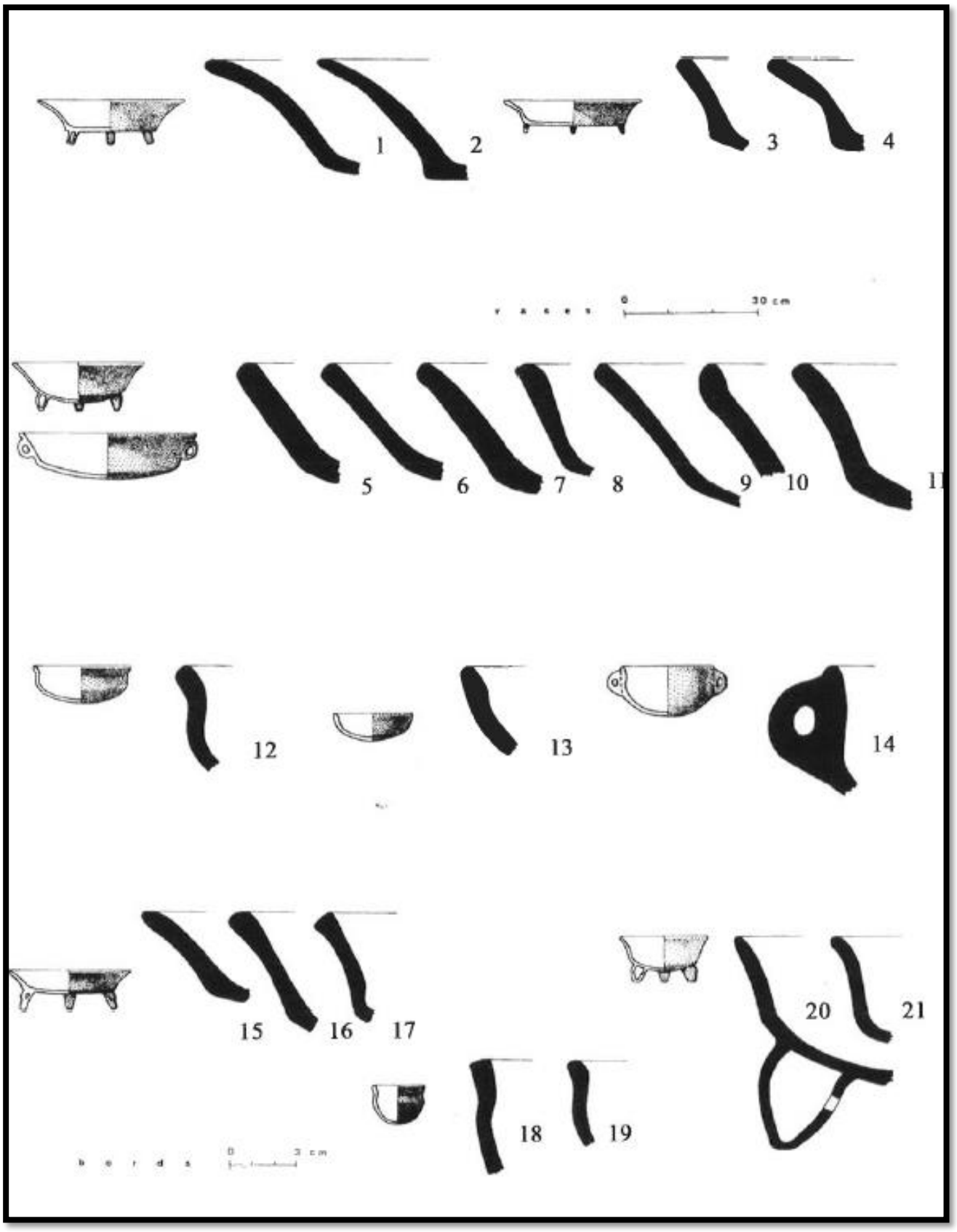
Fonseca and Amapala Phase ceramics

Unrestricted vessels with simple contours



Types: Tular Policromo (1, 6, 7) ; Guandique Rojo sobre Beige, variedad A (2,3,5) ; Guandique Rojo sobre Beige, variedad B (4,8) ; Pupusa Policromo (9, 10) ; Marcovia Beige (11, 12).

Unrestricted vessels with composite contours



Types: Janiché Policromo (1 [diametro : 32 cm]), Calicanto Policromo (2 [diametro :33 cm], Tular Policromo (3, 6, 7, 10), Langues Policromo (4 [diametro : 30 cm], Hydra Rojo (5, 14), Chiri

Policromo (8 [diametro: 28 cm], 9 [diametro : 30 cm], 12), Nagarejo Negro sobre Rojo (11 [diametro : 40 em], Apazuru Rojo sobre Rojo (13 [diametro : 11 cm], Papalén Policromo (15 [diametro : 28 cm], 20 [diametro : 30 cm], 21 [diametro : 18 cm], Pupusa Policromo (16), Catracho Policromo (17), Hicacos con depresiones (18,19).

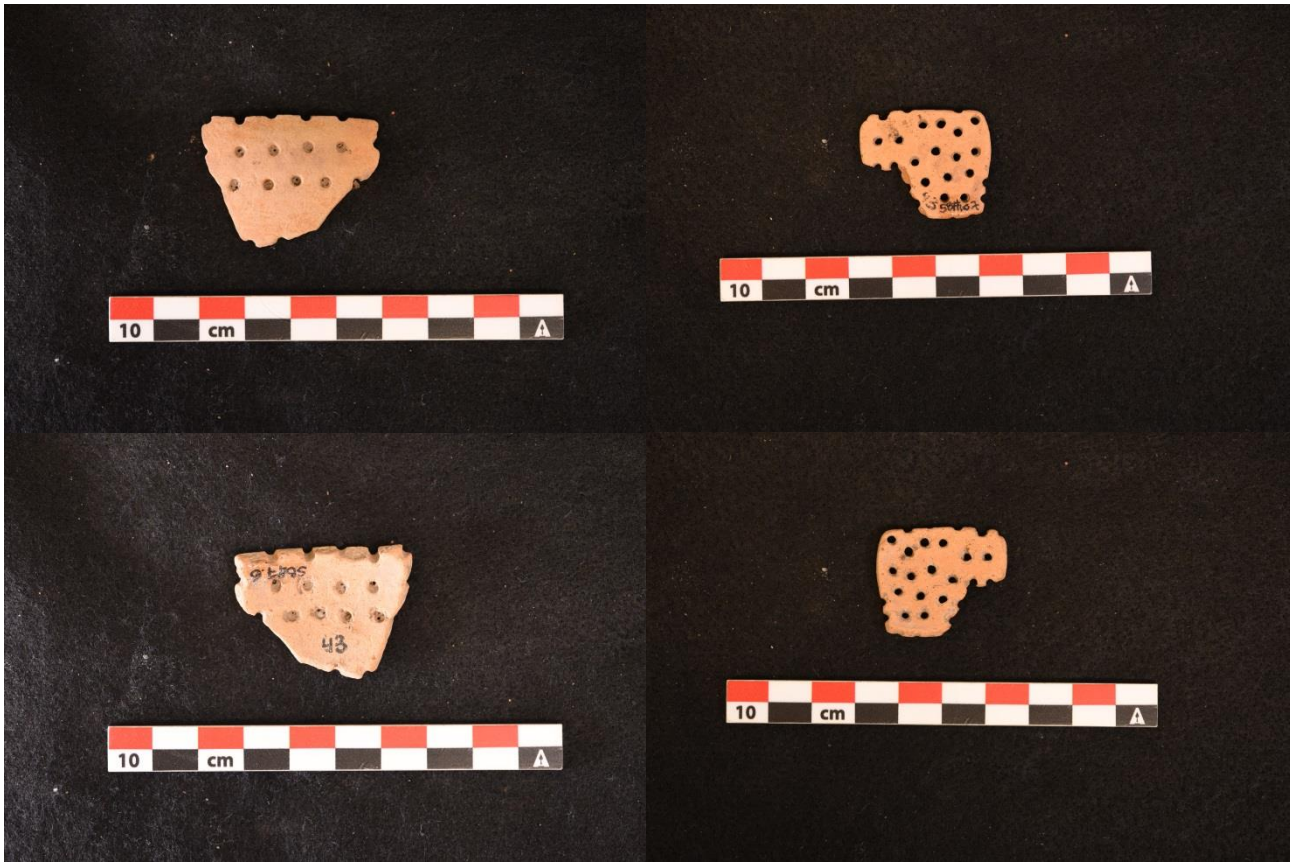
Appendix C: Pictures of encountered ceramic types

(Pictures by author and S. Casale)

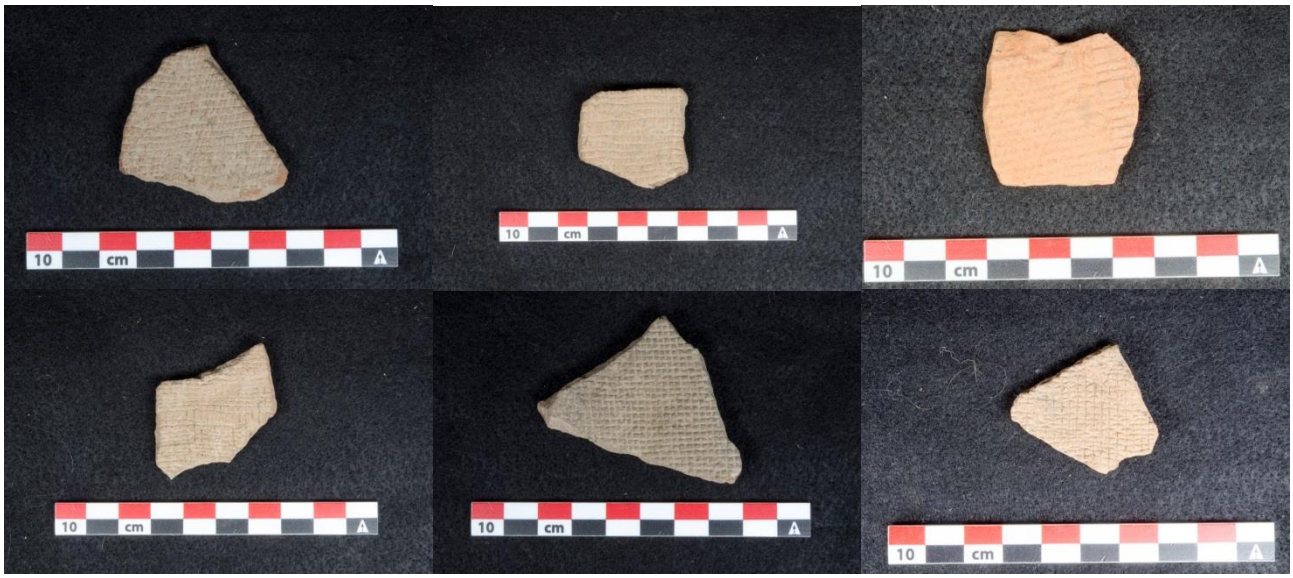
This appendix offers a picture guide to types encountered in the material analysis of Monte Libano, La Danta and El Espino. It will present only the types that were documented in our small assemblage.

Auriga Café

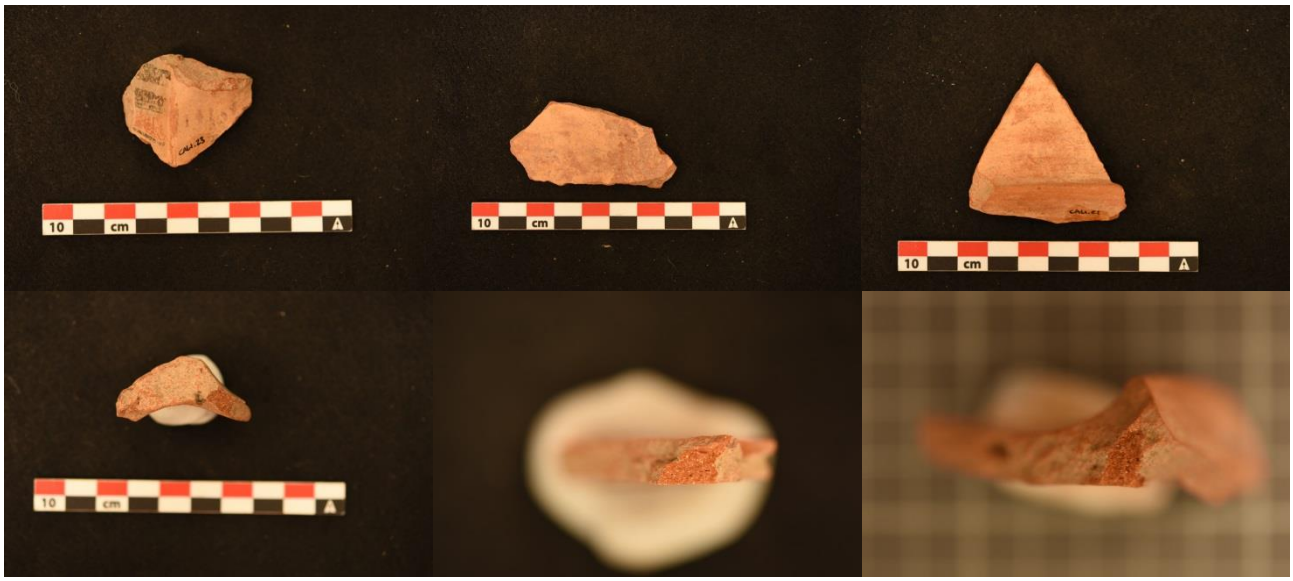
Bichin



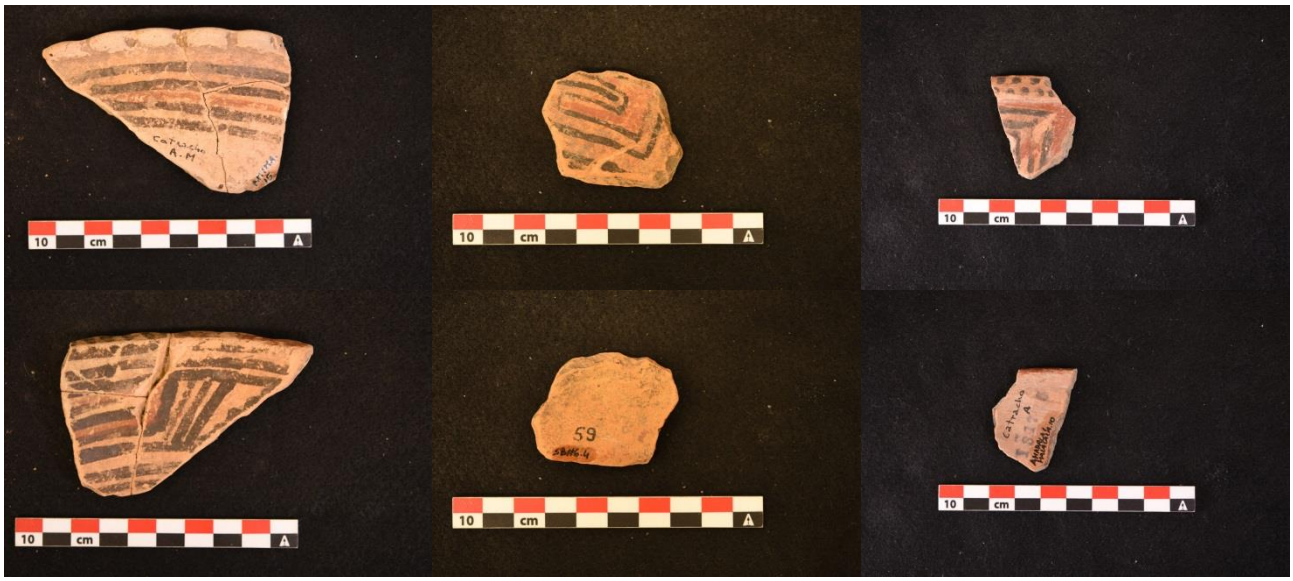
Cacaulito



Calicanto



Catracho

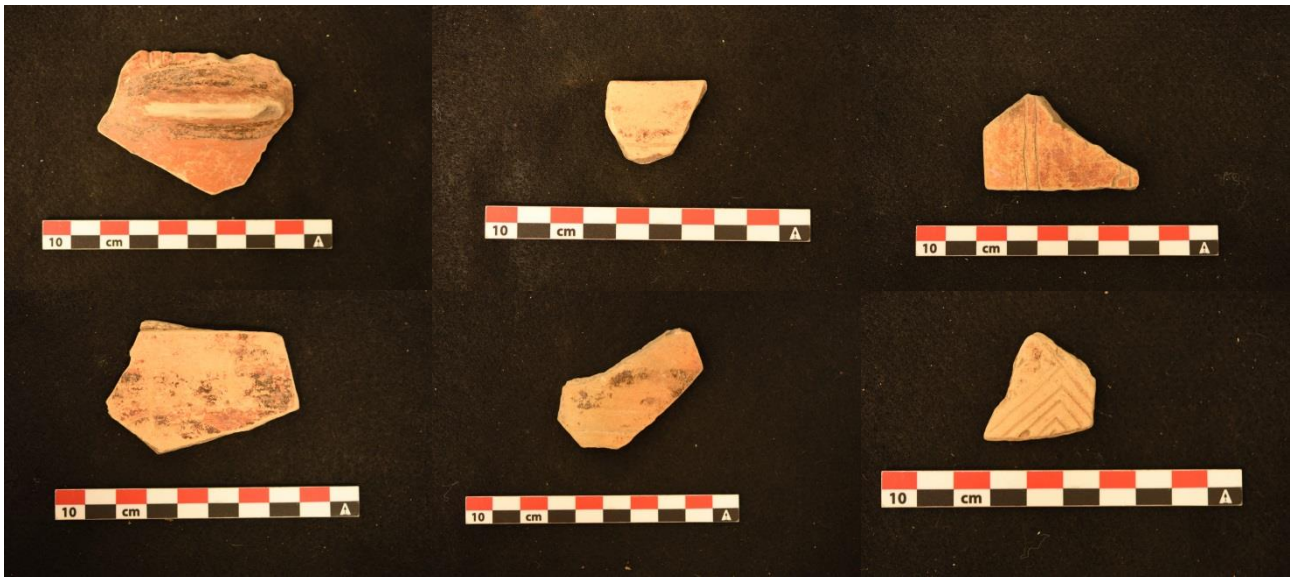


Chepito Gratté

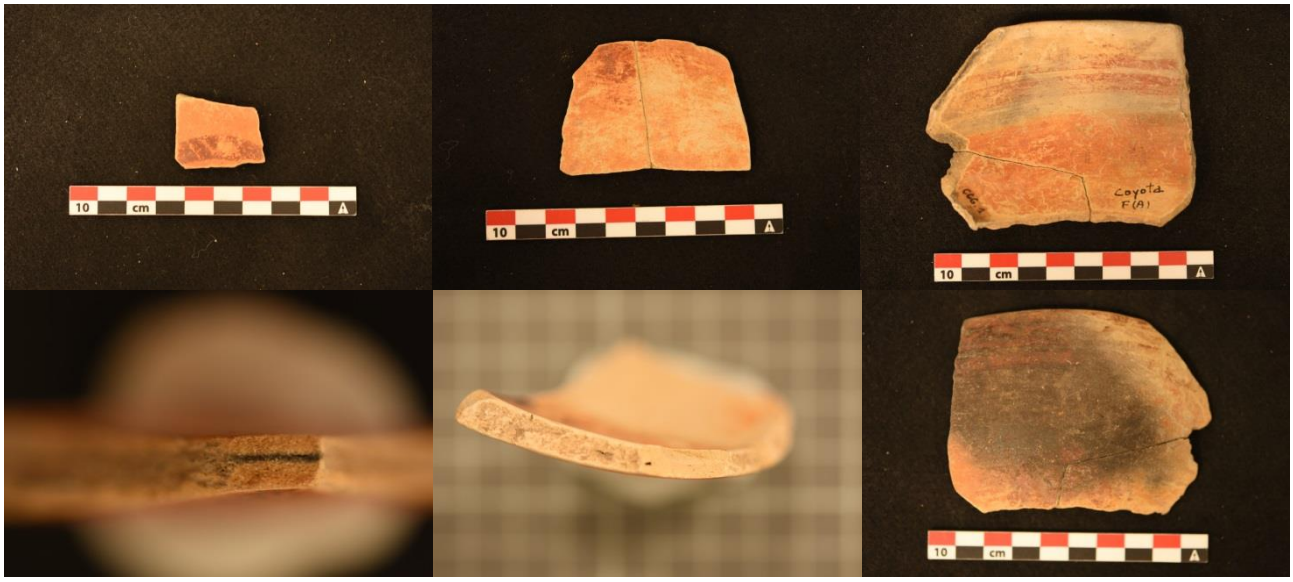
Chichunte Trichrome Incised

Chiri

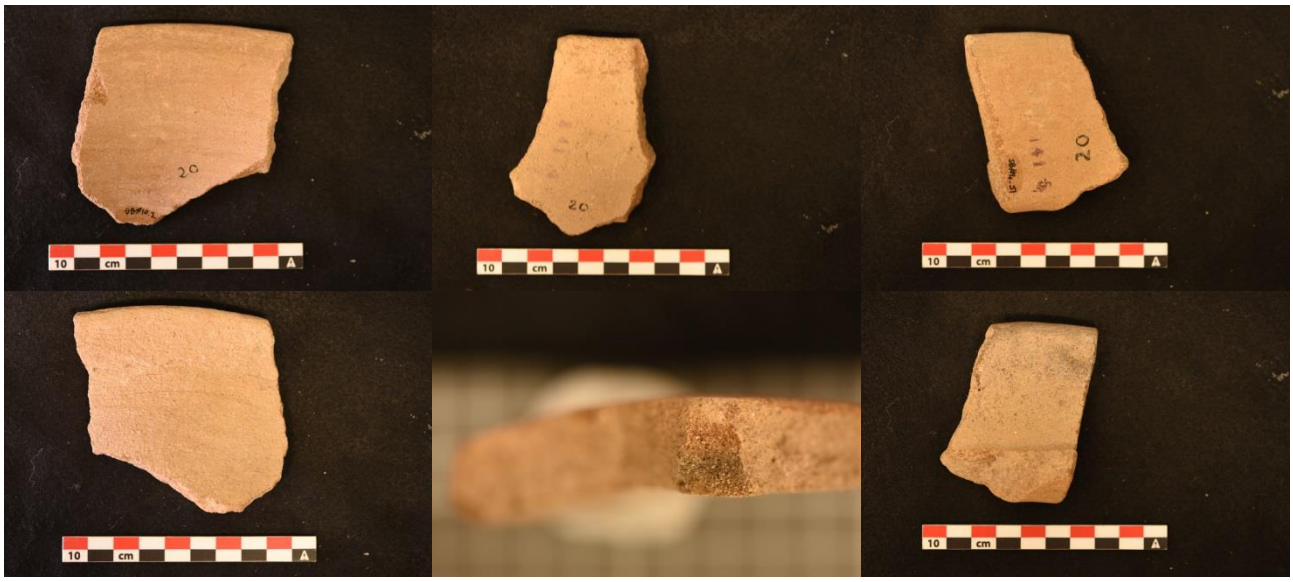
Corcovado



Coyota

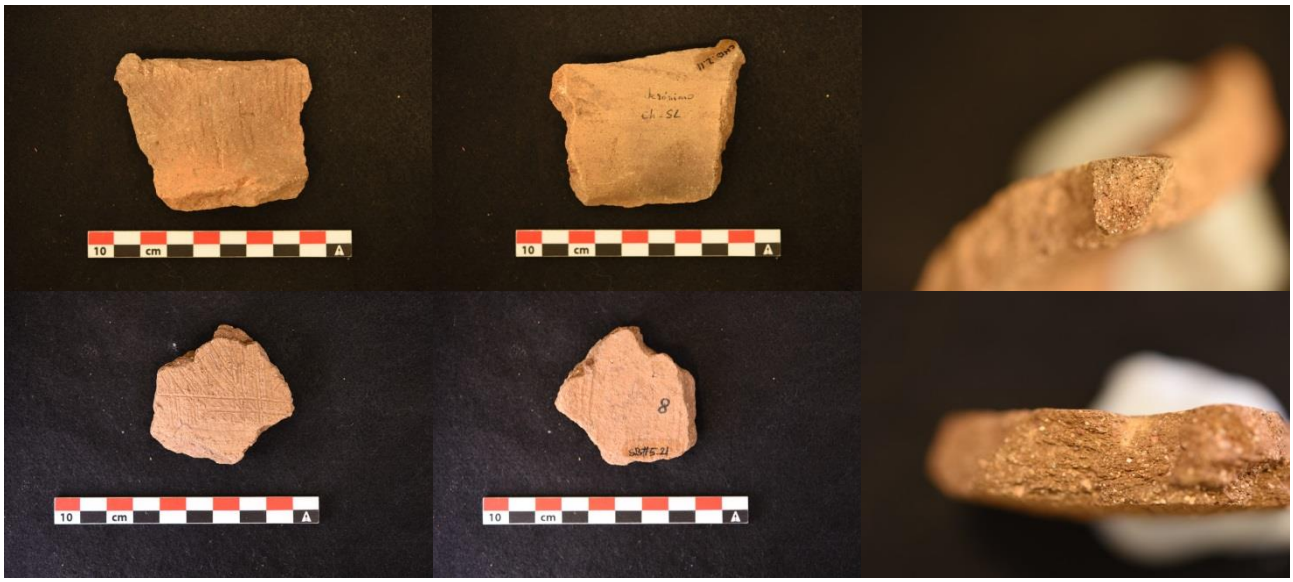


Dragón Café

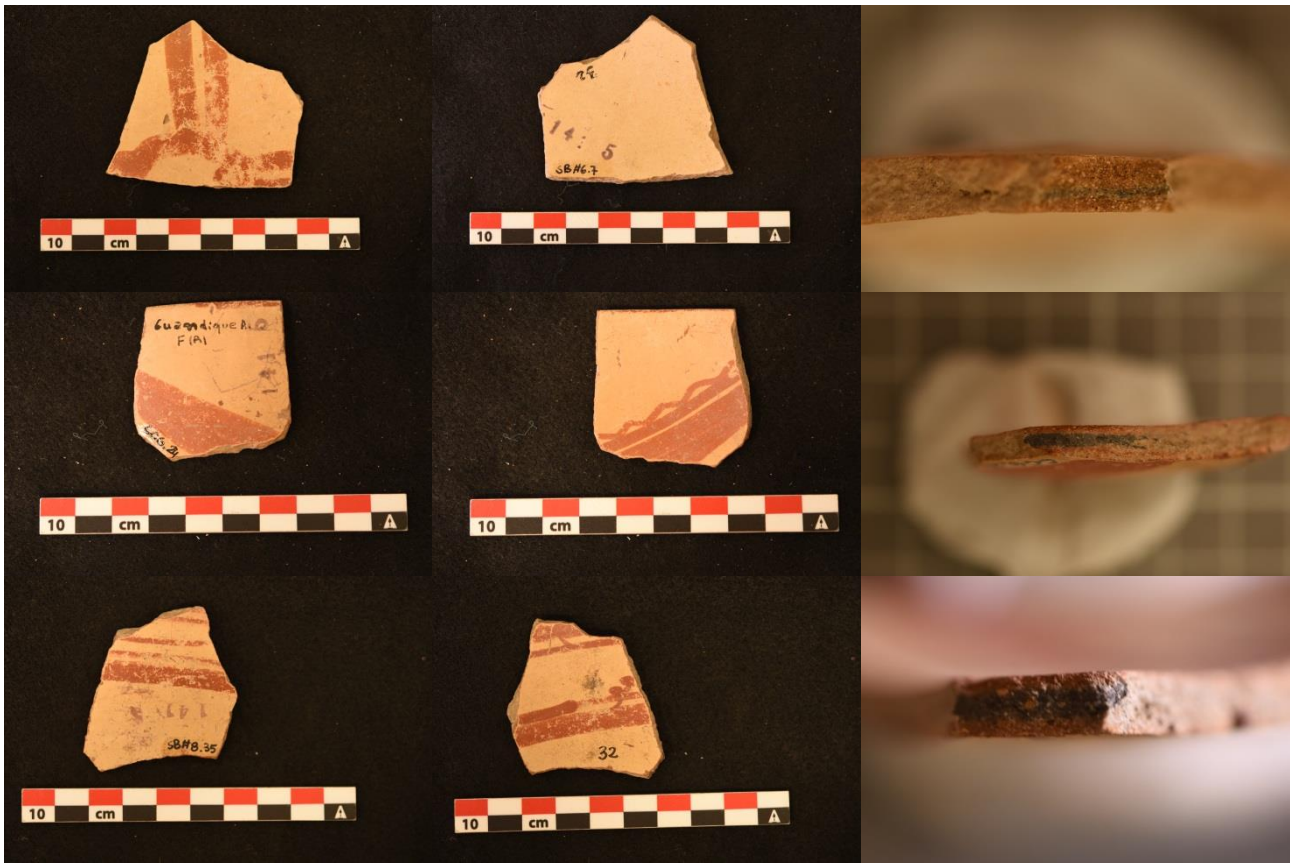


Estrella Ondulé

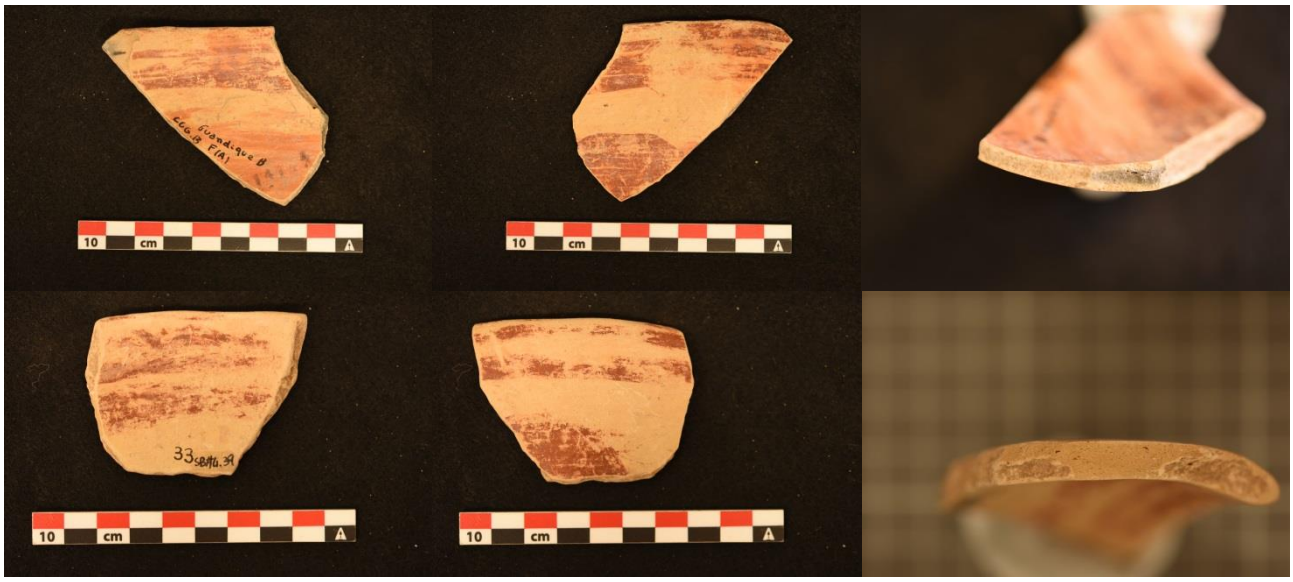
Geronimo



Guandique (variety A)



Guandique (variety B)



Guatales

Hicacos

Hydra Rojo

Jocomico

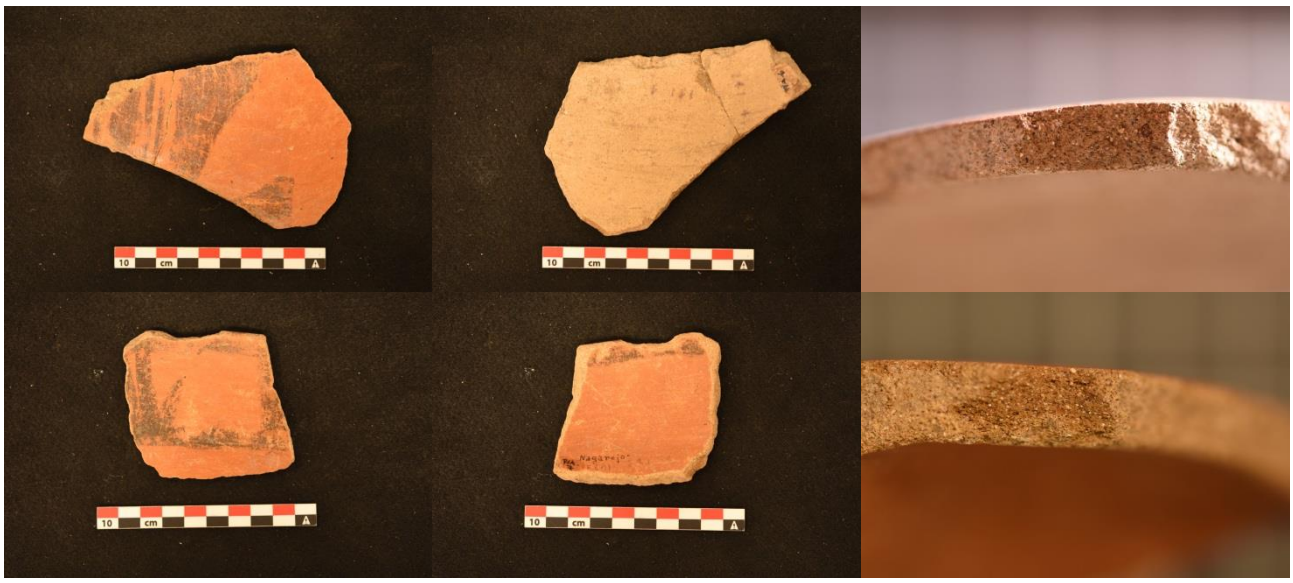
Langues

Marcovia

Monjaras

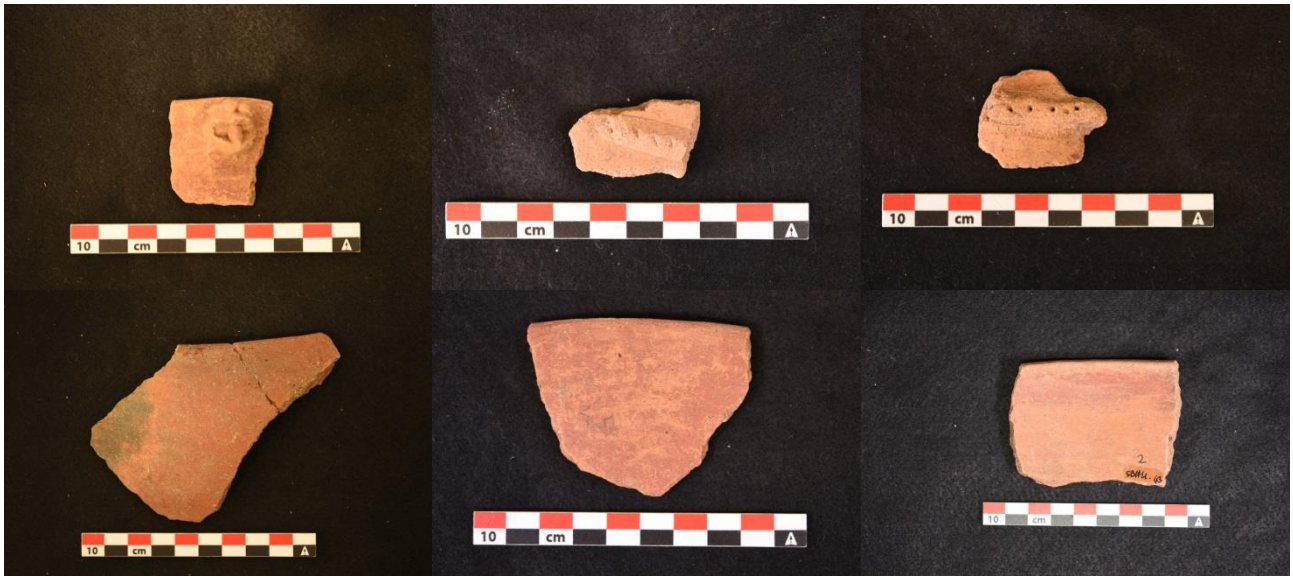
Muerdalo

Nagarejo



Namasigue

Orion Rojo

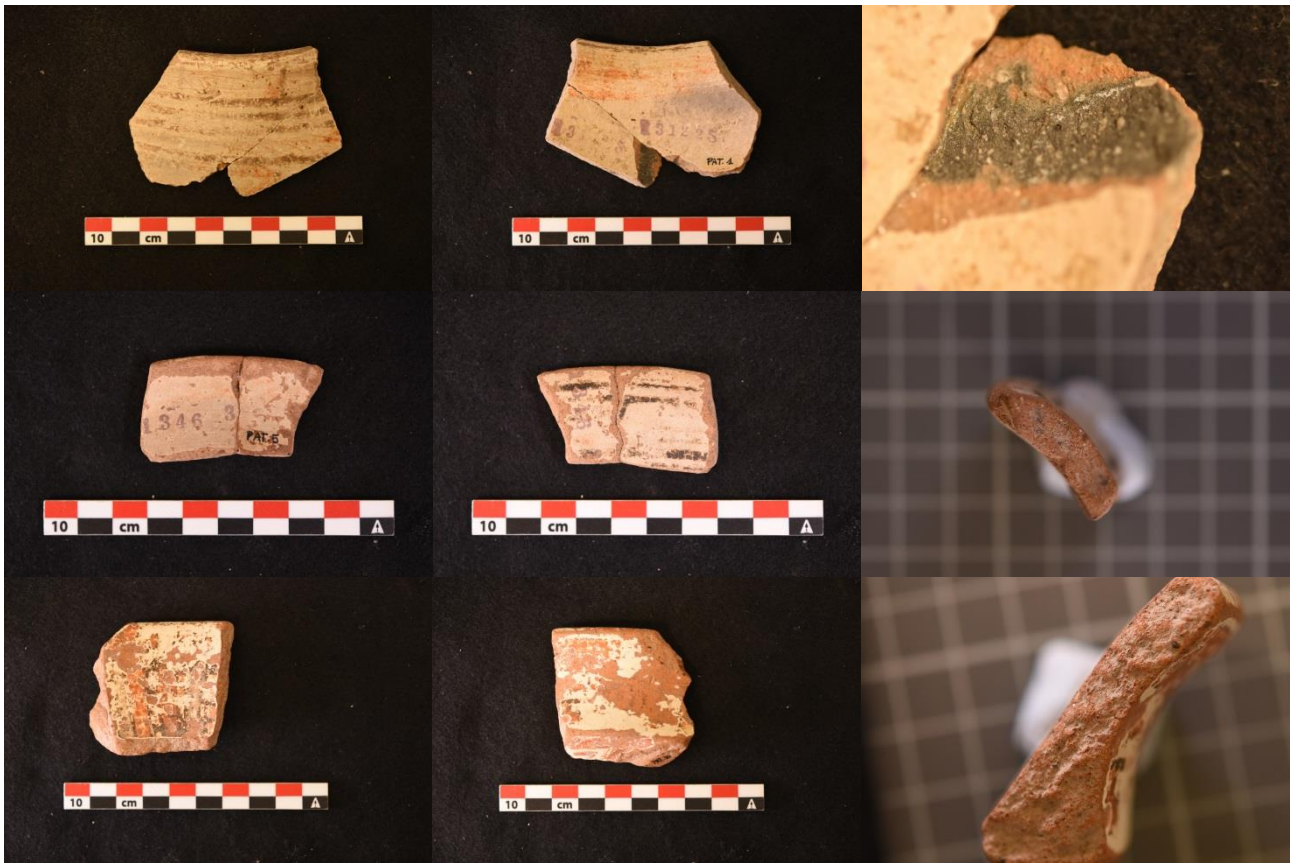


Palmerola

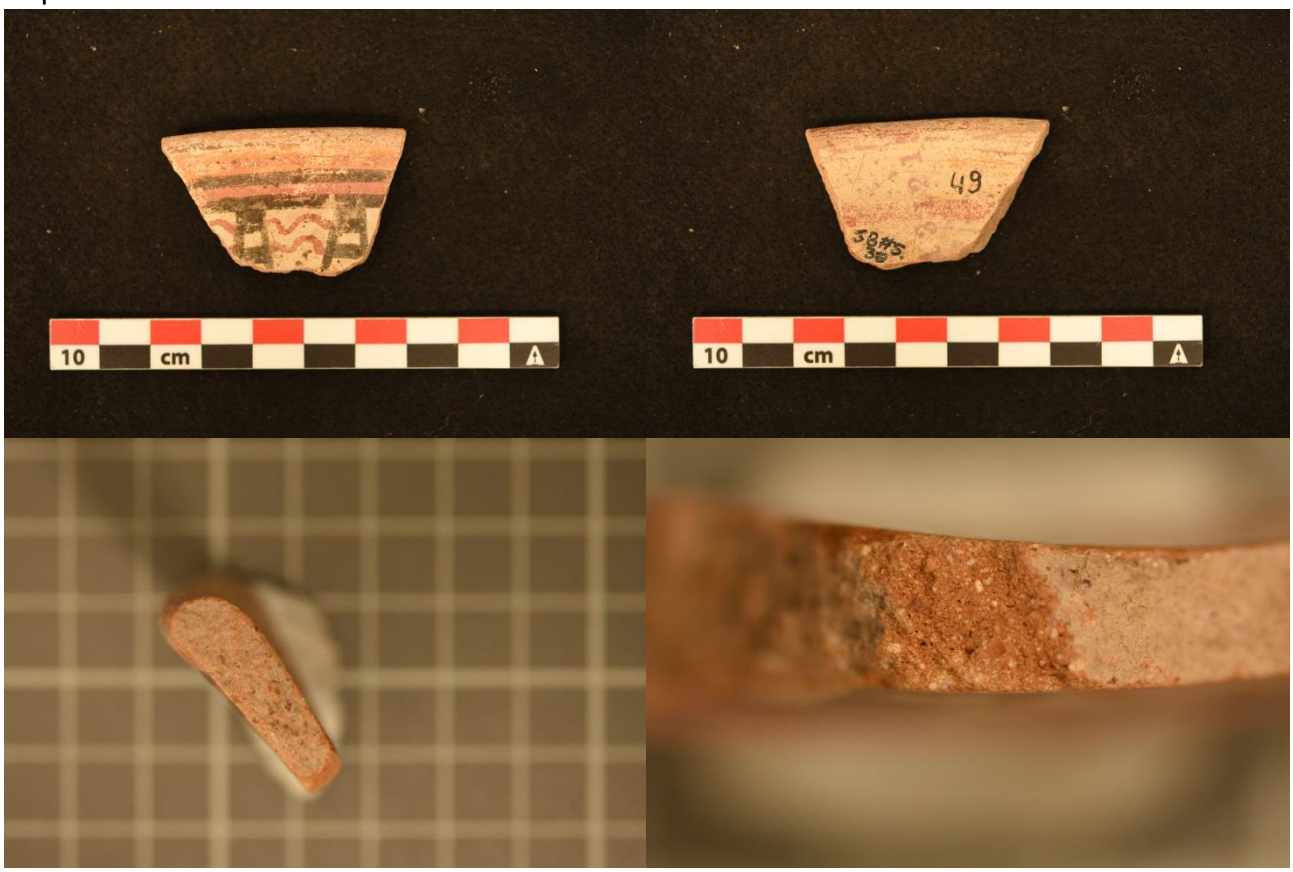
Papalón

Papaya

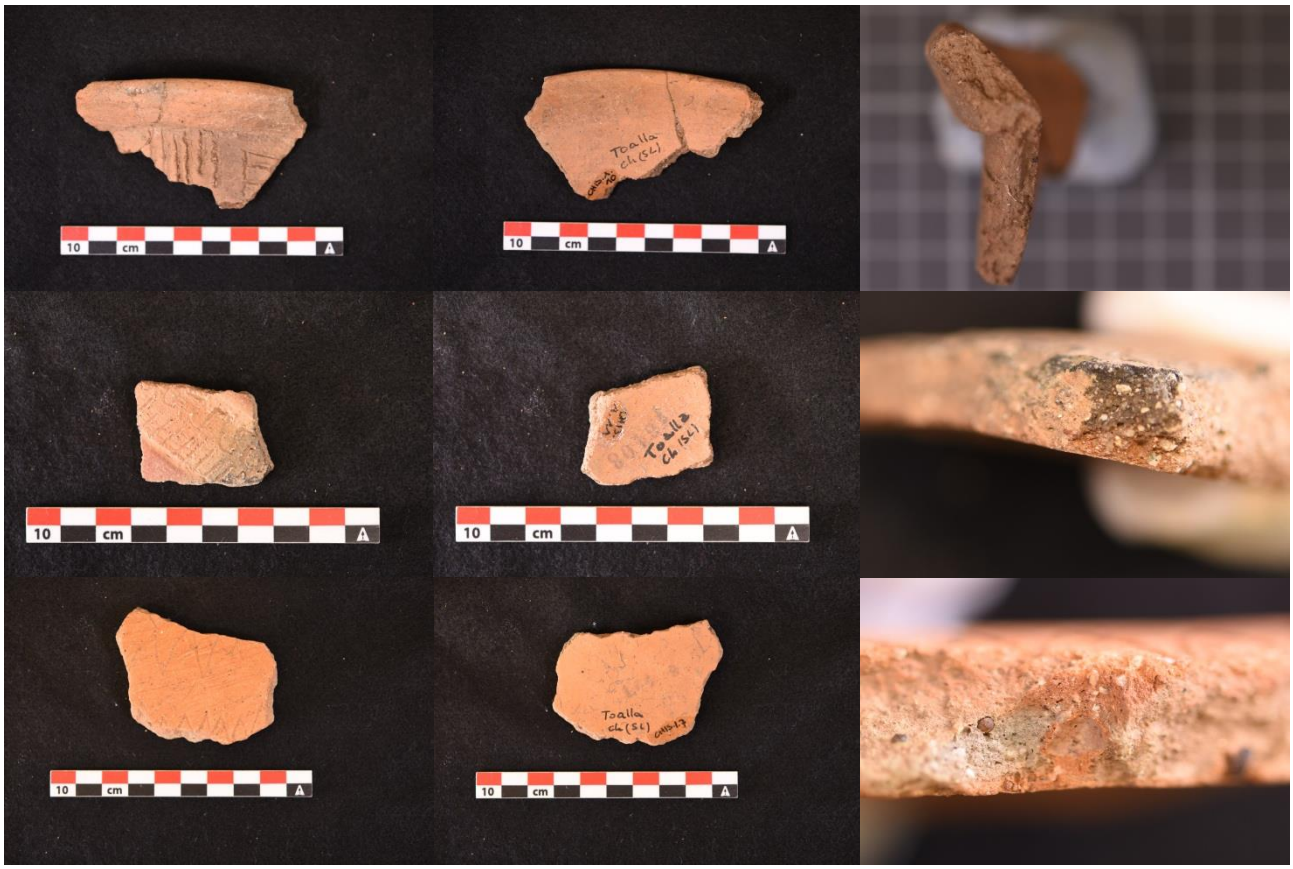
Pataste



Pupusa



Toalla

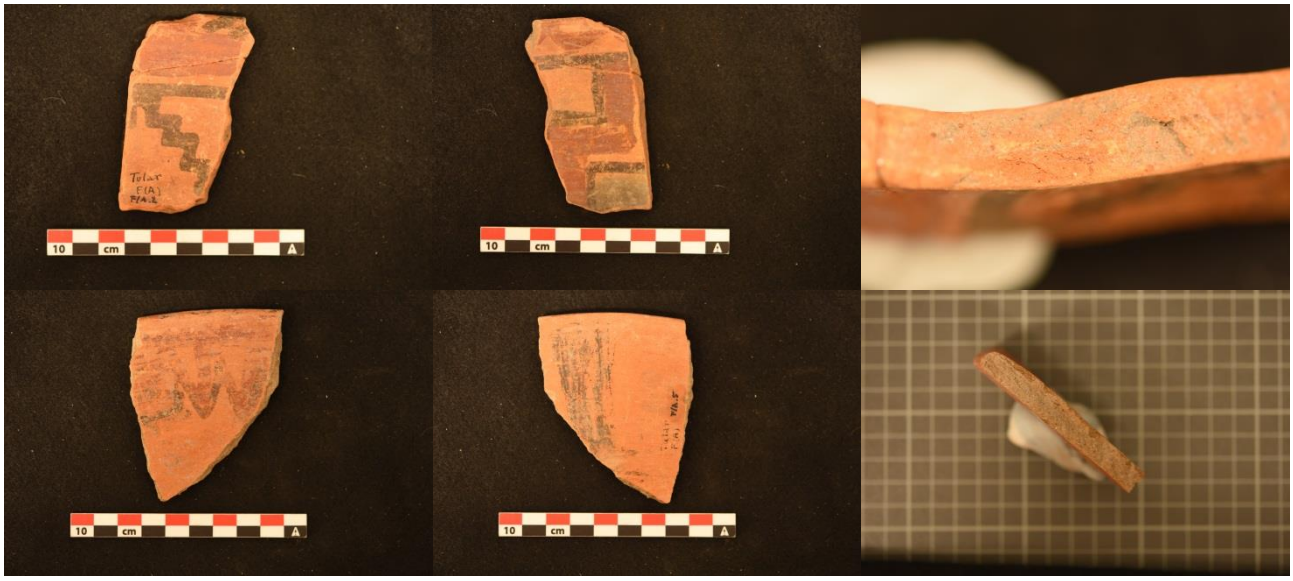


Tohil Plumbate

Tolondron

Triunfo

Tular Polychrome



Ubaldo

Vallejo

Appendix D