Life Across the River: Agricultural, Ritual, and Production Practices at Chavín de Huántar, Perú.

by

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Abstract

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In this dissertation I examine domestic life in an early Andean highland community. While these peoples' homes and material remains may evoke images of tranquil peasants living in quiet harmony with nature, I will challenge the assumptions inherent in that image. The community of La Banda was located directly across the river from a major ritual center. New data obtained by me and presented here reveal a community engaged in complex relationships with the temple of Chavín, the surrounding fields and communities, and the broader Andean world through the practices of trade, production, pilgrimage, and ceremony.

There are four major themes presented in this dissertation: ritual, domestic life, trade and importation, and production and exchange practices. These themes are discussed in relation to activities that occurred in the monumental center, in the domestic La Banda sector, and when assessing the relations that the community of La Banda had with communities and peoples from outside the Central Andean region.

Finally, the nature of local Chavín domestic life has been a long-standing concern of Andean archaeology. This question frames my research project conducted in La Banda, across the river from the temple of Chavín de Huántar. This project is the first to document significant horizontal excavations of domestic space. Previous work that analyzed daily life did not have access to contiguous domestic structures and was unable to compare domestic structures to others that bordered it. My La Banda project contributes to debates about ritual life and daily practice in early farming communities, the nature of plant and animal food production, and the place of exchange and production in a ceremonial center.

Christine A. Hastorf (Chair)

Life Across the River: Agricultural, Ritual, and Production Practices at Chavín de Huántar, Perú.

Table of Contents

List of Figures

List of Tables:

Acknowledgements:

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Chapter One: Introduction and Goals of the Dissertation

1.1 Introduction:

In this dissertation I examine domestic life in an early Andean highland community. While these peoples' homes and material remains may evoke images of tranquil peasants living in quiet harmony with nature, I will challenge the assumptions inherent in that image. The community of La Banda was located directly across the river from a major ritual center. New data obtained by me and presented here reveal a community engaged in complex relationships with the temple of Chavín, the surrounding fields and communities, and the broader Andean world through the practices of trade, production, pilgrimage, and ceremony.

The emergence and changing nature of ceremonial centers has long been an issue of importance in archaeology (Rowe 1963; Sharer 1969; Lathrap, Marcos et al. 1977; Burger and Salazar-Burger 1985; Crabtree 1986; Lange, Wheat et al. 1986; Gibson and Simpson 1998). Recent research has attempted to understand the intricacies of life inside and outside of these centers (Aldenderfer 1991; Blitz 1993; Silverman 1994). While previous archaeological research at Chavín yielded much knowledge about the role that ritual and authority played at the site (Rowe 1962; Burger 1984; 1985; Lumbreras 1989; 1993; 1995; Rick 2005; 2008) there are still outstanding questions about life inside and outside the center. Much of the finds from La Banda rely on juxtaposition with data from the monumental core, and several puzzles about the monumental core seem to be resolved by evidence from La Banda. The La Banda sector and the monumental core sector illuminate each other in a way that is satisfying to those interested in the daily life of inhabitants outside of the monument and those who are more interested in power dynamics and more elaborate formal displays of hierarchical organization.

There are four major themes presented in this dissertation: ritual, domestic life, trade and importation, and production and exchange practices. These themes are discussed in relation to activities that occurred in the monumental center, in the domestic La Banda sector, and when assessing the relations that the community of La Banda had with communities and peoples from outside the Central Andean region. Ritual is a dominant theme in research conducted at Chavín, which was postulated to be a center that attracted pilgrims from across the Central Andes. In this dissertation I analyze how ritual is discussed in archaeology and focus on how this practice has been conceived of at the site of Chavín. Additionally, I believe that some current approaches to ritual provide significant insights into past life at the center. Domestic and daily life is an important issue that I address through the analysis of architecture, material culture, and archaeobiological remains. Trade and importation are themes that appear in discrete sections of the dissertation when I analyze objects of non-local origin. The many and varied material goods that arrived at the site from outside regions are indications of contact with outside communities and people moving goods up and down trade networks. Production and exchange in many instances are linked to trade and importation. The production areas discussed in this dissertation enable a more complete analysis of these activities and how the people who worked in these areas interacted with the ceremonial center.

Finally, the nature of local Chavín domestic life has been a long-standing concern of Andean archaeology (Moore 1996:150). This question frames my research project conducted in La Banda, across the river from the temple of Chavín de Huántar. This project is the first to document significant horizontal excavations of domestic space. Previous work that analyzed daily life did not have access to contiguous domestic structures and was unable to compare domestic structures to others that bordered it. My La Banda project contributes to debates about ritual life and daily practice in early farming communities, the nature of plant and animal food production, and the place of exchange and production in a ceremonial center.

1.2 Organization:

This dissertation is organized into three major sections. In the first section (Chapters 2-5) I examine space, place, and time at Chavín. This introduction to the region frames the issues that I will analyze in later chapters. In the second major section (Chapters 6-7) I present the results of archaeological fieldwork and lab work; the architecture, food, ceramic, and lithic data are presented in terms of how these practices shaped life in the La Banda community. Finally, in the third major section (Ch. 8-10) I expand the results of these analyses to understand how my excavations contribute to our knowledge of past ritual systems, ecological, exchange and production practices. The results of this work create a vivid picture of a highland community that was on one hand immersed in local Andean ecology and subsistence practice, while on the other hand interacting with peoples and material goods from across the greater South American Andean region.

This introductory chapter presents an introduction to life across the river from the temple of Chavín de Huántar, Perú. The temple occupies a preeminent place in the literature of early societies in the Andes (Tello 1943; Lumbreras 1974; Burger 1995; Moseley 2001) yet relatively little is known about the people who lived outside of the temple. The material remains recovered during excavations of the ancient community of La Banda reveal that its inhabitants were intimately involved with activities in the temple and yet maintained a lifestyle that does not appear to have been overly dependent upon input from outsiders.

In Chapter 2 I present the Andean environment and local ecology. This framing of space and place is preceded by a discussion of ecology and ecological theory. Then I discuss households and the lived experience. This theoretical discussion of households provides definitions of the household as well criticism of previous household archaeology. Finally, I will discuss households as I found them in La Banda. My analysis of households is focused on the activities that occur in them rather than using them as a template for cross cultural analysis.

In Chapter 3 I discuss the environmental zones and the native crops of the region. Finally, I present some thoughts on how people fit into Andean place and space. This chapter describes the ecological setting of Chavín and includes discussions of people who currently live in the region.

In Chapter 4 I continue to place Chavín in context by presenting its culture history within the broader organizational schemes of Andean history, by offering a more extensive discussion of the "Early Horizon" and what this time designation means to researchers working at the site. This chronological analysis is followed by a temporal discussion of Andean Paleoethnobotany. The history of plant use in the region is important to my discussions of plant use by the inhabitants of La Banda.

Chavín de Huántar has been characterized as a ritual center since the inception of archaeological analysis of the site. In Chapter 5 I analyze ritual and religious experience at the site. I will review the work and scholarship of Julio C. Tello, John Rowe, Luis Lumbreras, Richard Burger, John Rick, and Jerry Moore as they relate to ritual activities that occurred at the site. My own analysis of ritual practices that occurred at the site is informed by the theoretical works of Catherine Bell.

The second section of the dissertation, chapters 6-7, analyzes the data that I collected during excavations. Chapter 6 presents the excavations conducted in the 2005 field season when many different teams were working in distinct sectors of the site. The material remains that we encountered that season were unexpected. Previous excavations in the La Banda sector uncovered relatively routine domestic areas whereas my excavations encountered a formal patio and a production area for ritual artifacts adjacent to this patio. Artifacts uncovered in this excavation are presented in this chapter and in the following chapters. The unexpected finds encountered in these excavations led to changes in the research trajectory as I was obliged to consider issues of value, production, processions, ritual, and sacred space.

The field strategy for the La Banda excavations is presented in chapter 6 along with the collection and recording strategies. I present the excavations through site plans, profiles, and photographs. The radiocarbon dates for La Banda are presented as is the stratigraphic history of the excavated areas of La Banda. The architecture is analyzed to allow for further discussion of the activities that occurred within these spaces. Finally, I discuss some of the non-biological material, ceramics and lithics that were recovered from the screens during the excavations.

I attempted to collect as much information as possible from the excavations, and the results of this endeavor are presented in Chapter 7, which contains information on the macrobotanical, phytolith, and faunal remains. Additionally, this chapter contains links to all of the methods and forms used in the field and in laboratory analysis. Finally, I will combine these different strains of archaeobiological analysis to discuss past food production and food use at La Banda.

The third major section (Ch. 8-10) expands the results of the previously presented information and analyses them to clarify how my excavations contribute to our knowledge of past ritual, domestic life, exchange, and production practices. Chapter 8 discusses crafts and production. I discuss anthropological theories of value in production in order to understand exotic or special goods found in La Banda. The shell and marine artifacts are presented alongside analysis of their sources. Many of these special goods appear to have been used in processions and rituals that occurred in the monumental center.

Chapter 9 serves to re-contextualize the data presented up to this point. Here I discuss what it was like to live at Chavín. The ritual and domestic lived life of the inhabitants of La Banda was distinct from that of other highland communities that existed at that point in time. They were engaged in significant exchanges with outside communities and produced goods to be used in rituals in the ceremonial center.

Additionally, the excavations in La Banda challenge our conceptions of what was ritual and what was domestic space.

In my concluding Chapter 10 I return to the major themes of ritual, domestic life, trade and importation, and production and exchange practices that were introduced at the beginning of the dissertation. I also highlight the conclusions reached, which also raise issues for future research. La Banda has been presented as a community embedded within a particular time and space and it is necessary to see this domestic settlement as a sector intimately connected and yet separated from the central temple, a point on the landscape that was always within sight and yet was not a home. The inhabitants of La Banda developed multi-scalar religious traditions power that had their own ceremonial focus. Finally, these people lived within walking distance of one of the most iconic and dramatic centers in the central Andes and yet were firmly entrenched in their own lives outside of the temple.

In sum this dissertation takes a local perspective and examines life in a domestic community located across the river from a major Andean ceremonial center. This unique opportunity to conduct contiguous horizontal excavations of domestic space was an exceptional opportunity not available to other projects. I took this opportunity to conduct thorough excavations in the La Banda domestic sector and expanded upon it by analyzing botanical material from the sector and completing laboratory analysis of all other major artifact classes recovered during the excavations. This project provides a compelling picture of life in the neighborhood and reveals what additional questions could be addressed with future work in the sector. From this point of view, across the river the temple, it is possible to understand not only the people and place of La Banda but it also the practices that occurred in other sectors of the site and in the ceremonial center.

Chapter Two: Ecologies and Andean Place and Space

2.1 Introduction

In this chapter I introduce theory that informs the archaeological analysis that I present in later chapters. Out of the four major themes addressed in this dissertation daily life is the broadest and the one most in need of elaboration. Domestic life means living in a space that is situated within a broader environment and our understanding of the environment is contingent upon knowledge of ecology. While ritual, importation, exchange, and production are also informed by ecology and household studies they are not as directly related to these fields as is the analysis of daily life.

Here I present two distinct bodies of theoretical work that are joined together because they inform my study of daily life. The first field of study is ecological theory and the second is the concept of the household in archaeology. As I will discuss here and in later chapters knowledge of ecology and the household are necessary to understand subsistence practices and other activities that occurred in these domestic spaces. The focus on life across the river from the temple means providing a detailed foundation for this analysis.

In the first half of this chapter I outline various approaches used to analyze ecological data. There are a variety of theoretical frameworks used for analyzing ecological history and I will discuss three of them, agroecology, historical ecology, and the "new" ecology, in terms of their similarities and differences. After a broad presentation of the three divisions of ecology there will be more specific sections. Each section will focus on some of the historical aspects of scholarship in the field and they will also include a section of relevant case studies that examine how these ecological theories are tested in practice. Work from many of the leading scholars in these respective fields will be discussed. Additionally, there will be a focus on research conducted in the Americas, my region of specialty. Within the Americas I will pay particular attention to studies that focus on the Andean region of Western South America. I will also analyze how these frameworks impacted my own work and interpretations of the data collected during the course of excavations at Chavín de Huántar.

In the broadest sense ecology is the relationship between organisms and their environment. All of the various strains of ecological thought examined in this chapter are concerned with the relationship of one organism in particular, humans, with their environment. Although this would seemingly lead into a discussion of human ecology, I will not maintain a particular focus on this school of ecological thought. This is because much of human ecology has been concerned with the detrimental effects of modern civilization on the environment; and, as this essay will make clear, many historical, agricultural, and "new" ecologists do not believe that only modern human groups have had detrimental effects on the environment. This is not to say that all practicing human ecologists only believe that modern humans have had detrimental effects on the environment, it is simply to state that other aspects of ecology are of more particular interest to my archaeological study of ecological thought.

2.1.1 Agroecology

The field of agricultural ecology, or agroecology, has been defined by many different scholars (Tivy 1990; Altieri 1994; 2000; Gliessman 2000; 2004). One of the most succinct definitions is:

> Agroecology is a scientific discipline that uses ecological theory to study, design, manage and evaluate agricultural systems that are productive but also resource conserving. Agroecological research considers interactions of all important biophysical, technical and socioeconomic components of farming systems and regards these systems as the fundamental units of study, where mineral cycles, energy transformations, biological processes and socioeconomic relationships are analyzed as a whole in an interdisciplinary fashion (Altieri 2000:12).

Following the guidelines of Altieri it can be seen that agroecology is a pragmatic science embedded within discourses of modernity, development, poverty, and genetic engineering. Within agroecology there is an explicit attempt to employ a bottom-up method of knowledge building. The local farmer and his techniques are a fount of knowledge for the agricultural ecologist who must balance concerns for high yields with the knowledge that poor farmers must continue to use and protect their land for generations. Evaluation of short-term cash crop output is not the ultimate goal in this scenario; rather, research focuses on local concerns and local practices for long term management. This orientation is of particular interest to archaeologists as they attempt to discern how people interacted with their land, plants, and animals in the past.

Agroecology is the study of agroecosystems, most often in the form of "traditional" agriculture. Before an in-depth study of "traditional"[1] agriculture is possible it is first necessary to examine how many traditional ecologists view or viewed the agroecosystem:

> Agroecosystems are domesticated ecosystems that are in many ways intermediate between natural ecosystems, such as grasslands and forests, and fabricated ecosystems, such as cities. They are solar-powered, as are natural ecosystems, but differ from them in several ways: the auxiliary energy sources that enhance productivity are processed fuels (along with human and animal labor) rather than natural energies; diversity is greatly reduced by human management in order to maximize the yield of specific foods or other products; the dominant plants and animals are under artificial selection rather than natural selection; and control is external and goal-oriented, rather than internal via subsystem feedback as in natural ecosystems (Odum 1997:287).

Many of the above statements carry the weight of "common-sense" for practitioners in the industrial West. However, deeper analysis reveals that many "traditional" agroforestry systems do not have greatly reduced diversity (Hecht 1995). It is against this backdrop that agroecologists attempt to argue for the future and past viability of small farms and other practices.

[1] In this analysis "traditional" is broadly farmers who use techniques defined as pre-Green Revolution.

As Gliessman (2000) noted, the phrase, "a whole is greater than its parts" has never been seen as revolutionary or challenging. However, the inherent wisdom contained within this statement has not been accepted or applied in much of modern agriculture. The current emphasis on monocultures, monumental amounts of energy input (whether it be in the form of fertilizer, mechanical harvesting, pesticides, genetic manipulation, or actively ignoring the knowledge of indigenous peoples) are all examples of the bias against holistic knowledge that exists in modern agro-business (Gonzales 2000). However, this does not mean that agroecologists are against large-scale production of food. Rather they simply want to see it produced in a sustainable and responsible manner. As such, they state that there currently exist levels of knowledge and skills that are capable of sustaining local farmers well into the next century.

Agroecology's focus on the ecosystem (Tansley 1935 cited in Gliessman 2000:231) means that the analysis and interpretation of many different communities is of primary importance to agricultural ecologists. The agricultural field itself is a type of ecosystem, "At the heart of agroecology is the idea that a crop field is an ecosystem in which ecological processes found in other vegetational formations such as nutrient cycling, predator/prey interactions, competition, commensalism, and sucessional changes also occur (Hecht 1995:4)". As such it must be possible to measure the diversity within the ecosystem, or field system.

There are several different types of diversity: alpha, beta, and gamma diversity (Gliessman 2000:231). Alpha diversity is a measure of species diversity within one single location. Beta diversity is measured across communities or habitats there is a variety of species and finally, gamma diversity is a measure of diversity of species across an entire region, such as a mountain chain. These diversity measurements are important when ecologists attempt to discern the relative advantages and disadvantages of distinct cropping systems:

> A cropping system with high beta diversity, for example, can often provide the same advantages as one with high alpha diversity while offering greater ease of management.
> Eventually the system reaches something called maturity, which may be defined as the full potential for energy flow, nutrient cycling, and population dynamics in that physical environment can be realized. Greatest diversity may not be reached at this stage. The loss of diversity greatly weakens the tight functional links between species that characterize natural ecosystems. Nutrient cycling rates and efficiency change, energy flow is altered, and dependence on human interference and inputs increases. For these reasons, an agroecosystem is considered ecologically unstable (Gliesmann 2000:232-233).

The concept of maturity outlined above is not the same as the concept of a "climax" community. Contained within the concept of a mature ecosystem is the notion that the system is still quite capable of change, however, if care is taken the system is more stable than early open communities. One classic example of a "mature" system is a field system mixed with tree growth, also known as agroforestry.

Agroforestry is one of many traditional practices in tropical settings (Altieri 1995:4). Agroforestry or arboriculture, swidden agriculture, house gardens, and nomadic gardens manage to combine humans and their plants with domesticated animals in such a fashion that trees may either be simultaneously growing amongst the other crops or they may be added sequentially:

> In South America, attention has been directed to several forms of traditional management of tropical forest resources: (1) the diverse, multi-storied swidden (shifting cultivation field) which protects the soil and allows for habitat recovery under long fallow (e.g. Harris 1971); (2) the house garden, or dooryard garden, also diverse and multistoried, but with a large component of tree crops and with soil additives from household refuse, ash, and manure (e.g. Covich & Nickerson 1966); and (3) the planting, protection, and harvesting of trailside and campsite vegetation ("nomadic agriculture" or "forest fields"), involving wild, semi-domesticated, and domesticated plants (e.g. Posey 1982, 1983:241-243, 1984). A related type of plant management is the manipulation of swidden fallows, a form of agroforestry involving a combination of annual crops, perennial tree crops, and natural forest regrowth (Denevan 1987:1).

The diversity of tactics employed by these tropical farmers leads to a state of production where it is not logical to consider that a field is ever truly abandoned, rather the field at various points in time exists along a gradational scale somewhere between full fallow and full swidden.

The Brush (2000) volume on the diversity of crop plants and management strategies was notable for its inclusion of diverse voices. Native scholars from different regions contributed to the discussion. In the Andes, Tirso A. Gonzales (2000) discussed the need to dissect terms such as *in situ* and conservation. Gonzales uses a spoken narrative form to dissect the culture/nature divide and emphasizes that humans are part of a larger community of organisms so they should not be removed from protected lands.

Earlier work on Andean agricultural systems (Brush 1981; Brush 1982) revealed the sophisticated field rotation and fallow practices of farmers in the Central Andes. These farmers often times have fields located in distinct ecological zones in order to grow crops suited to those elevations. These sites are farmed in different fallow rotations (Altieri 1995 :138): 1) corn/fava beans/corn/fallow 2) corn/corn/potato or fallow and 3) potato and barley/fava beans/corn/corn. Although not all of these plants are native to the region, the majority of them are and it is possible to imagine substituting lupines for fava beans and quinoa for barley. This attention to soil nutrition and pest control is indicative of a highly developed agricultural system well suited to the local environment.

Moving away from the Andes, a great number of agroecological projects consider the agricultural field to exhibit similar biological potentials and limits as an island. MacArthur and Wilson (1967) in their groundbreaking study of island ecology[2] found that when new species colonize an island they often fill a niche that they did not previously occupy. This is a similar situation to a newly plowed field. “The first pest to

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[2] Kirch (1997) did note that Wilson (1967) failed to notice the prehistoric impact of humans on islands in the Pacific and other areas.

arrive in an ‘uncolonized’ field has the opportunity to very rapidly fill its potential niche, especially if it is a specialist pest adapted to the conditions of the crop in that field” (Gliessman 2000:243). It is possible to apply this theory to agricultural fields because an “ocean” of other crops can surround one plot. This creates an island-like niche within the local ecosystem. These studies should allow agroecologists to predict the invasion of harmful pests and model means of preventing their entry into the field, or learning how to increase the arrival of beneficial prey insects. The theory can also be applied in a more rudimentary fashion by constructing an “island” barrier around important fields.

In conclusion, these traditional agroecological systems are part of the culture and are nurtured and maintained by the local farmers. In the Andes, there is an emphasis on working fields in distinct ecological zones and on maintaining the health of the system. The principles that underlie their sustainability and permanence are the result of past experimentation and attention to the local ecology.

2.1.2 Historical Ecology

Historical ecology attempts to study the broad intersections between humans, other organisms, and their environment over time. As the name historical would imply, it is the diachronic perspective that is particularly critical to the field. The temporal depth of these studies is such that both the environment and humans can be seen as mutually changing and impacting. Humans have altered their environment across wide boundaries of time and place and it is hardly fitting to believe that this mutual relationship only began with the onset of the industrial age.

Lentz, in his Americanist perspective, sees historical ecology as:

> Through an objective analysis of pre-contact land use practices, we can learn from past successes as well as failures. In terms of conceptual orientation, this volume follows the postulate that humans are components of a dynamic biosphere, constantly adjusting and manipulating the other biotic components to garner a greater share of the nutrient output (Lentz 2000:1).

An introductory glance at historical ecology leaves the impression that there are few differences, other than temporal, between it and other strains of ecology. However, the scholarly backgrounds of many of its practitioners, in anthropology and ethnobotany, lead to many new questions and problems. Additionally, it is not possible to leave unquestioned the typical divisions that exist in the natural sciences, between nature and culture (Ingold 1993). Historical ecologists must question their own discipline’s infatuation with the human condition. They must acknowledge that at various points in time other organisms have had a tremendous impact on the human condition (e.g. the extinction of the Pleistocene mega-fauna).

The emergence of edited volumes (Crumley 1994; Kirch and Hunt 1997; Balée 1998; Lentz 2000; McIntosh, Tainter et al. 2000; Balée, Erickson et al. 2006) with an explicit focus on historical ecology greatly broadened awareness of the themes and debates that exist within the field. A wide range of theoretical perspectives is included within these volumes. Balée (1998), and Crumley (1994) defined the discipline as a new theoretical perspective and they do not relegate it to a sub-section of anthropology. Several of the volumes (Kirch and Hunt 1997; Lentz 2000; McIntosh et al. 2000) explicitly included chapters by non-anthropologists (Dunbar 2000; Hodell, Brenner et al. 2000; Hsu 2000). This inclusion of data from outside the archaeological realm fits with Balée's vision of historical ecology.

Balée (1994:1) stated that historical ecology, "Is more than a methodological improvement over cultural ecology, cognitive anthropology, and certain list-oriented approaches common to economic botany and medical botany… it focuses on the interpretation of culture and the environment rather than on the adaptation of human beings to the environment." This definition concurs with Kirch's assertion that much early archaeological work in the Pacific assumed that human beings had had a negligible effect on the environment (see Murdoch 1963:151, cited in Kirch 1997) and that the environment could be considered a static entity that humans had to adapt to. Historical ecology emphasizes that human beings need to be seen as constantly changing the landscape, which was most likely never pristine or untouched (Balée 1998).

However, this does not mean that there are not significantly different perspectives presented in these volumes. Rival (Rival 2002:15) disagreed with Balée's conclusion on the historical transition of Amazonian peoples from horticulture to trekking, "Mobility is as much of a product of historical will and religious belief as it is a form of adaptation to the environment or to historical circumstances." The relative importance of social processes and individual agency is a theme that will be returned to later.

Whitehead (1998) argued that historical anthropology (e.g. Sahlins 1981; 1995) is a more appropriate concept for the study of human history in the past and that historical ecology will never fully encompass the specificities of human history that detail-oriented anthropologists demand of their data. In short, "such a project is only intermittently realizable, due to the limits of historical text and archaeological data, thus threatens to produce a situation where sequential functionalist explanations of different 'landscapes' are proffered as historical ecology."

Balée (1998:6-7) takes issue with Whitehead's separation of evolution and history and challenges it with his definition of landscape. Balée states that a definition of landscape that takes into account human praxis on the land will inevitably create synergies between evolution and history. History, in this sense, is not solely a description of temporal events, rather it can be seen as many processes and events that intersect in different arenas (social, economic, ecological, etc.). With new concepts of history and of quantitative analysis it should be possible to engage in a scientific pursuit of understanding human behavior in the past (Balée and Kidder 1998:407). This does not mean that historical ecologists should engage in the pursuit of constructing laws, rather, historical ecology can be seen as a means of incorporating humans and their knowledge back into the realm of nature.

Crucial to many arguments put forward by Balée (1998) is the concept of landscape. There are many different schools of thought on landscape, however, not all of them attempt to firmly place human praxis on to this special plane. Some of the more post-modern elements of archaeological thought refer to landscape (Bender 1993; Tilley 1994; Bradley 2000; Bender and Winer 2001) as a socio-political realm that can be usefully addressed through analysis of the phenomenological (relative) experience of space. Balée does not view landscape in the same manner rather he sees it as a sees it as a bridge to connect history and evolution, or as Crumley (1994:6) states, "the material manifestation of the relation between humans and the environment." Although these two authors are using the concept of landscape to unite two completely different arenas there are parallels between their arguments. Crumley takes landscape to be a material manifestation of a dialectical relationship and Balée uses landscape as a material entity that firmly situates history and evolution on the same physical terrain.

The use, structure, and layout of the land are not new considerations in the field of historical analysis. Braudel (1976) referred to long-term history as geological. He was a student of Marc Bloch, a founder of the Annales School which studies rural history and emphasized the importance of the *longue durée*. This was not to state that all long-term history was related to the physical environment, rather, it was to emphasize that the physical, social, and cultural realms were all interrelated. The inability to abstract one element of historical analysis from the web of relationships in which it was entangled was crucial to the field of historical ecology. The second scale of history was structural or social history. This was composed of group relations and more modeled behavior. Finally, there was individual and event history, which can be traced out on the landscape or it can be seen as the arena where the individual creates landscape through daily practices.

All of the case studies to follow are studies of the pre-contact Americas. A wide array of historical ecology studies has been conducted in the Americas (e.g. Bettinger 1998; Rival 1998; Lentz 2000).

In the pre-Columbian Americas all farmers were organic farmers. This does not mean that they did not genetically manipulate their crops. Humans have selected for certain traits (i.e. high yields, indehiscence, caloric output, spiciness, mind-altering characteristics) since the beginning of their time on this planet. However, these pre-contact farmers were significantly different than their modern agro-business counterparts. One of the primary differences was energy input. The massive amounts of energy applied to fields in the form of mechanization, pesticides, fertilizers, mulch, was unheard of in the past when most of the energy came from human and animal exertion, along with human and animal waste products.

The Lentz (2000) volume on landscape transformation in the Pre-Columbian Americas is particularly useful in discussing the state of historical ecology in the American context. Two articles, Erickson (2000) and D'Altroy (2000), focus on the Andean region. Of the two articles the Erickson article more specifically addresses definitions and debates surrounding the concept of landscape and human modifications on the land. The D'Altroy article has a more economic slant describing the variety of vegetation and crops that occurred throughout the Inka realm.

Erickson's many studies (1988; 1993; 1998; 1999; 2000) of agricultural landscapes around Lake Titicaca verified the tremendous amount of human-induced landscape changes that occurred over thousands of years. His argument (1999) that humans dramatically and actively changed the landscape confronts, what he terms, "neo-environmental determinalism" in Andean research. For Erickson (2000:317):

> Humans have so altered the natural landscape that it no longer exists and probably has not existed for thousands of years. Humans also played an important role in

> maintaining and increasing biodiversity of natural resources of the basin. The long-term development of the Andean landscapes is discussed in terms of archaeological, historical, and ethnographic evidence. This record shows that rural farming peoples survived, and even thrived during periods of climatic perturbation and environmental change. Much of what has been interpreted in paleoclimatic studies as climate change may in fact be anthropogenic perturbation of the regional environment.

This critique of Kolata (1996) and colleagues' analysis of environmental data deployed theory from the fields of phenomenology, landscape, and historical ecology to question whether or not environmental change could have been the primary driver in the "collapse" of the Tiwanaku State. While much of Erickson's (1988, 1993, 1997, 1998, 2000) work has thoroughly documented the extent of human modification of the environment this does not completely eliminate the possibility that the environment can be the prime mover in a period of cultural change. Finally, palynologists have noted the impact of humans on the pollen record and in ideal situations they are trained to filter out human disturbance from climatic change (Cameron L. McNeil 2009).

The premise for much of Erickson's work were the surveys conducted by W. Denevan (1966) on the extent of raised field technology throughout the Pre-Columbian Americas. Through extensive aerial, digital, ground, and archaeological survey Erickson (1995:70) confirmed Denevan's (1966) initial surveys that reported thousands of hectares of raised fields in *Llanos de Mojos* region of Bolivia. There may have been as many as 173,000 ha of constructed terraces throughout the Americas as a whole (Erickson 1997:66). The remarkable extent of these terraces taken with the tremendous amount of labor that went into their construction lead Erickson and others to attempt to reconstruct (as described above in the agroecology section) these systems.

D'Altroy (2000) takes a less human-centric perspective on land use in the Pre-Columbian Andes. His account (D'Altroy 2000: 359) documents how the Inka maintained access to a variety of different zones in order to mitigate the profound effects of environmental catastrophes such as: earthquakes, floods, unpredictable climatic cycles, drought, frost, and other natural forces. These forces and the dramatic mountainous landscape (D'Altroy 2000: 360) created and create "inescapable constraints" on the practices of local peoples. However, D'Altroy does note the impact of Andean societies on the land around them (D'Altroy 2000: 384). These changes to the land were not solely economic. Aesthetics and symbolic space were also crucial in the development of these human landscapes.

Another case study that could easily fit within the rubric of historical ecology is the groundbreaking work conducted by Hastorf and Johanssen (1999). Their analysis of changing Andean wood burning practices over time reveals many interesting shortcomings of theories that consider nature a static element that mediates human behavior. As the people of the Mantaro Valley began to experience an increase in population they did not clear the area of trees and begin to gather less ideal sources of fuel. Rather than rid the area of trees the people of the valley actually cared for more trees, certain taxa in particular, that historical and social analysis revealed to be culturally important to these people (Guaman Poma de Ayala 1956 (1615); Cobo 1979 [1653]). These multiple data sets (macrobotanical, historical, and cultural) demonstrate that the environment is not only reacted to, rather it is modified and imbued with human knowledge and culture. "We are not implying that economic factors are unimportant when trying to understand a cultural sequence but that a purely economic explanation is not sufficient" (Hastorf and Johannessen 1999:75).

The debates about whether historical ecology is an emergent paradigm, method, or school of thought (Balée 1998) have not been resolved. However, almost all practitioners agree that it must include data from many fields (palynology, geology, paleoethnobotany, geography, history, etc.). Multiple lines of evidence are crucial to the concept that successful descriptive sciences must employ multiple working hypotheses (Chamberlain 1965 (1897)) to come to acceptable solutions. Hypotheses can never be proven correct but the use of multiple lines of evidence means that there are some that can be seen as more valid than others. For this reason, much of processual archaeology that termed itself evolutionary never fully lived up to that statement because it took evolutionary theory to be a predictive science bent on creating rules, rather than one that is inherently historical.

Kirch (1997:19) provides a fitting ending to the debate:

> Historical ecology consists of more than simply cataloguing the varied impacts and effects of humans in a landscape over time; its aim is ecological understanding, including the complex and reciprocal connections linking human populations with the myriad of other life forms that share their world.

2.1.3 The "New Ecology"

The "New Ecology" set out to challenge the fixed view of nature as well as many of other aspects of classic ecological thought. The 1980s were a time of great debate in the field of ecology:

> Ecologists are in a period of retrenchment, soul searching, 'extraordinary introspection,'….This follows on nearly three decades of heady belief on the part of some ecologists….that communities are structured in an orderly and predictable manner, and of others that information theory, systems analysis, and mathematical models would transform ecology into a 'hard' science (McIntosh 1987:321).

In general, critiques of previous schools of intellectual thought often over dramatize the rigidity of the theoretical stances of their intellectual forebears, an example of this situation would be the dissection of the concept of a "climax forest" [3], a concept long known within the field of forest ecology to not fully encompass the realities of forest

[3] The notion of a "climax forest" was a classic tenet of ecological thought (Botkin 1990:52), based on the idea that if nature were left alone it would eventually reach a form of static state.

composition without the input of humans. This does not mean that the critiques are not without value.

The “new ecology” moved away from the fixed definitions used in human ecology and began to take a more nuanced view of humans and nature as components in a relational system. The inclusion of more current trends in evolutionary theory that do not depend entirely on fixed values was critical in the development of the “new ecology”. To this respect, the inclusions of plant ecologists will be highlighted.

The emergence of the “new ecology” as a framework is difficult to pinpoint in time. However, it is clear that by the 1960s and 1970s (McIntosh 1987) there was a growing literature on non-equilibrium conditions and the importance of patchiness, disturbance and other factors (Price, Slobodchikoff et al. 1984). Perhaps the most lasting statement from this seminal volume was, “those pesky “biological details” matter a lot, because they reflect the violation of orthodox cooking-pot assumptions in the daily lives of real organisms” (Colwell 1984:389). This emphasis on the lack of stability in systems and the inability to abstract nature as a constant was a challenge to the existing paradigms in ecology and human geography (Zimmerer 1994:108).

Colwell (1984:388) boiled the problems of community ecology down to four main assumptions: the homogeneity of ingredients, continuity of ingredients, homogeneity of interactions, and continuity of interactions. The first assumption is the most crucial, and is the one on which many of the following claims are based. This assumption is that there exist abstractable elements across species (i.e. a leaf is a leaf). The critiques of this assumption, and the three following assumptions, acknowledge that with closer analysis no element can be removed from the web of relationships in which it is woven. Similar findings (i.e. the Heisenberg uncertainty principle) have been found in physics when attempting to measure objects on minute scales. However, this does not mean that ecology is lost in a web of relativity for all sciences must acknowledge that all successful theories or definitions have initial conditions, without these conditions results will differ (MacArthur 1972:257-259, cited in Colwell 1984:394).

Botanists noted in the 1920s, and earlier, that species reacted uniquely to environmental factors (Botkin 1990:98). They had two major critiques of the rigidity of ecological systems as envisioned by zoologists: 1) the co-occurrence of two species is simply an accident of similar adaptations, not a mutual dependency. 2) The type of species that dominates a landscape changes continuously in space; there are no sharp boundaries between communities. Thus, there is no inside and outside of a superorganism. If there are no sharp boundaries, then the superorganism cannot really exist. Although botanists realized the strength of these assertions, and the critical need to include time and space in field strategies, not all of their advise was headed at the time by the ecological community.

Daniel Botkin’s work (1990, 2001) has been crucial in defining the “New Ecology”. As with most academic prefixes, i.e. post or new, the term new has lost value over time. For this reason Botkin (1990) choose to term the new emphases in ecology “discordant nature”. The emphasis on the lack of harmony in nature is crucial, all too often systems theory could not predict the future changes in an environment. With advancing computer technology it was no longer possible to state that old systems models of populations were accurate, and that anomalies were rarities. Instead it was found that the populations of some organisms experience wild swings in terms of numbers and density. However, once equilibrium is no longer assumed computer technology is capable of running multiple models with greater degrees of possible success. Although researchers may no longer have the gleam of predictive certainty their results are often more reliable when chaos and uncertainty are acknowledged portions of the analysis.

Before engaging in a full assault on systems theories it is first crucial to analyze and acknowledge the importance of some of these theories. Systems theory in ecology (Odum 1983), not only had important repercussions in the ecological sciences but it along with related fields of systems analysis was a key component of the "New Archaeology". These theories held the biophysical environment to be a stable entity and that species survival was determined by competitive exclusion and niche specialization. Intense fieldwork (Zimmerer 1991) has proven that concepts such as niche specialization and competitive exclusion often do not hold up under close examination.

The work of Brush (1977, 1980) and Mayer (Mayer and Fonseca Martel 1979) was fundamental in documenting the distribution of distinct potato landraces in different environmental zones. However, the discrete surveys of Zimmerer (1991:176) revealed that the environment was not always the stable confining factor:

> "Spatial patterning of native potato cultivars is characterized by a high rate of endemic distributions in micro-regional areas. The spatially discrete distributions of most cultivars do not correspond to several prominent selection pressures including elevational environments and the distribution of culinary preferences among long agriculturalists. Instead, the spatial coalescence of endemic distributions conforms most closely to agricultural areas articulated through networks of seed exchange, so-called cultivar regions".

The practical demonstration of the primary importance of human agency and cultural values in where to plant crops reveals that no one element of the equation can be artificially maintained as a constant in order to create broad general rules of plant ecology. The environment, and altitude in particular, is a restraining force on potato cultivation, however, it is not the sole factor influencing small farmers choices.

While not classified as a practitioner of the new ecology Carl O. Sauer was a geographer who acutely realized the importance of human agency and activity in shaping the material world. His work (Sauer 1952; 1966) clearly depicts the extent to which humans have manipulated and changed the world around them, while at the same time acknowledging that the environment and landscape (Sauer 1956) may have been a primary factor in many events in human history[4]. The clear focus on humans and their role in changing the face of the planet was reflected in his essay in the William Thomas (1956) volume: Man's Role in Changing the Face of the Earth.

Sauer's article (1956) entitled, "The Agency of Man on the Earth", is of interest to modern readers for many reasons. Although the word agency at this point in time was not imbued with post-structuralist meaning the article is clear in its intent to document the

[4] Few modern scholars would agree with Sauer's account (1952) of the origins of agriculture. Although there are serious disagreements with the exact claims of his book it must be noted that he emphasized the key role that tropical and neo-tropical regions may have played in the development of domesticated crops.

changing patterns of human behavior on the landscape. The article presents a clear sense of choice and human decision making that is partially structured by the economic nature of humans but is also structured by other factors. According to Sauer man is pre-disposed to deform the pristine environment. We are inherently fallible. This means that at no point in time, if there were humans nearby, was the environment undisturbed.

2.1.4 Concluding Thoughts on Ecological Theory:

Not all of the changes that have come with the "new ecology" have been received with open arms (McIntosh 1987:321). This was due to the state of ecology (McIntosh 1987) before criticisms were acknowledged:

> Some theoretical community ecologists believed that during the 1960s and 1970s community ecology had undergone a paradigm shift (a revolution in the Kuhnian sense) to become a theoretical, mature, nomothetic, predictive science. They considered this science to be based on recognition of patterns susceptible to analysis by rules governing species distribution and abundance and subject to explanation and prediction on the basis of biological processes-notably competition for limiting resources. Systems ecology offered a new holism.

The criticisms that ecology's models were not truly predictive and that systems theory was not a "hard" science were damaging to many ecologists because it seemingly eliminated the value of their work. Without the capacity to successfully predict and model nature would the broader public listen to the concerns and warnings of ecologists? This paradigm shift was not to be taken lightly.

The concern that the "new ecology" would prevent ecologists from creating meaningfully statements about the future of the planet, or the detrimental activities of humans on the planet, has not been born out. The field of agricultural ecology provides striking evidence that ecologists can continue, if on a lesser scale, to predict ecological processes when they take into account random variation and the repeated nature of chaotic events.

Agricultural ecology began to take into account the effects of external stimuli and inputs in agricultural systems, previously considered to be closed systems. The focus on local conditions and local knowledge led agricultural ecologists to document parameters that produce sustainable yields for small farmers (Altieri, Anderson et al. 1987). These parameters are not absolutes and they must take into account the shifting nature of soil chemistry, nutrient quality, moisture, and labor inputs. As the knowledge of what constitute successful long-term practices grows certain rules can be established, but they are always contingent on local factors.

Carl Sauer's warning (Sauer 1956:360) against insensitivity to "native systems of living with the land" and against others values is a fitting final note. If ecologists are to develop theories that are locally and globally applicable they must be willing to change their ways and examine their data. If those pesky details bog down the theories and paradigms perhaps there is a flaw within those systems and they must be held up to increased scrutiny.

Table 2.1: Ecological Perspectives

Theory and Method:	Agroecology	Historical Ecology	New Ecology
Conception of diversity:	Agricultural fields can provide reservoirs of diversity	Landscapes evolve and many techniques and means of preserving diversity have been lost.	The concept of diversity needs to be constantly changing as the elements in a field are always in flux.
Political Advocacy:	Advocate for poor farmers and organic techniques	Advocate for a more sophisticated understanding of the past and a need to look beyond 'the site'.	There is not a pristine or climax condition for the environment and as such communities are never static.
Temporal Depth:	Focused on assisting current farmers mitigate the complex relationships between themselves and global market conditions.	Humans have impacted the 'natural world' as long as they have been present on this planet	The past was disjunctive and shifting, as is the present, and there should be greater emphasis on studying change across time and space not just between 'communities'.

2.1.5 Ecologies: A Discussion

Archaeologists are often accused of borrowing their theories and methods from other sciences. While this is true to a great extent there is not necessarily a problem with this situation. A greater problem may be that other academic disciplines have not borrowed enough from archaeology. An examination of the Annual Review of Ecology reveals that there are few, if any, studies that explicitly note the importance of long-term history. The historical aspect of ecology is crucial, and as Kirch pointed out of David Steadman's (1997) work, without a baseline ecologists will never be able to measure the impact of modern humans on the environment. These long-term histories may be chaotic or ordered, but without them it is impossible to examine global change.

In this chapter section I discussed ecologies; these ecologies have been separated and confined to three distinct sections but it should be clear that all three varieties of ecology can and do mutually inform one another. The emphasis on temporal values in historical ecology is acknowledged in the "new ecology" when studies reveal that nature never has been and never will be in a fixed state. Agricultural ecology engages in local approaches that do not force global perspectives on local situations. Emphasis on the patchiness of the landscape and of agricultural practices on that landscape more closely parallel practices of the past. Historical ecology may eventually reveal farming systems of the past but it will not be able to do so without examining the agroecology of modern peoples. Historical ecology must continue its broad based approach in order to more successfully chronicle landscapes of the past and present.

2.2 Introduction to Households

Here I change focus on the domestic realm into which many biological materials entered, were transformed, and became part of the material record. The household is a concept with a long history of study and in this portion of the chapter I present some of that history as well as stating where I believe past scholarship informs my own work in La Banda.

The La Banda sector (Figure 2.1) that is the focus of this dissertation is a domestic area across the river from the monumental center.

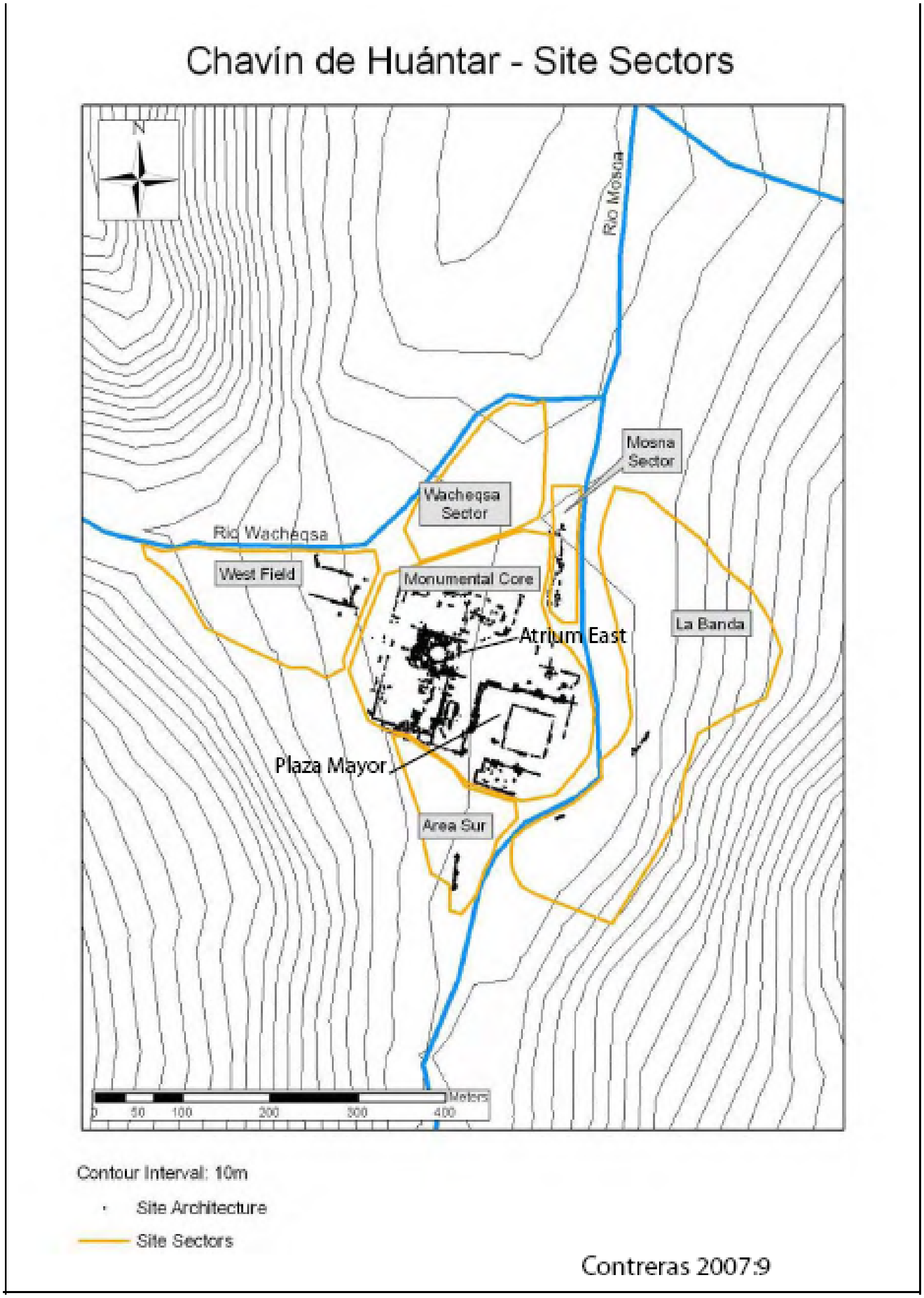

Figure 2.1: Sectors of Chavín de Huántar (modified from Contreras 2007:9).

Because the focus of this dissertation is analysis of evidence of domestic life at Chavín de Huántar, in which I presume that the household is a basic unit, this chapter will explore concepts of households and the lived experience in households. While there is a large literature on households (Ashmore and Wilk(Wilk and Rathje 1982; 1988) and the domestic mode of production in archaeology (Sahlins 2000), there have been fewer discussions of these themes in Andean Archaeology, except in (Aldenderfer 1993) and D'Altroy and Hastorf (2001). The role of households at Chavín has so far been opaque. This is partially due to the fact that many of the houses of the inhabitants of the people who built the temple of Chavín are assumed to lie underneath the homes of the current inhabitants of the modern town of Chavín (Burger 1984). The recent discovery of a large contiguous archaeological community in the La Banda sector has uncovered remains that are enabling an analysis of the households and domestic lives of the people who lived across the river from the temple (Rick 2008).

2.2.1 Emergence of the Household Concept

Households have been a focus of analysis and debate in social science since the 19th century. Households have been recognized as a minimal social unit above the individual that are quite common, in one form or another, across time and space. The form of the household and its relation to kinship groups varies greatly across cultures and through time, but there is often some live-together unit that has an emic name. House societies are one example of these groups that will be addressed later in the chapter. In any event, the data from La Banda analyzed in this dissertation needs a clear definition of 'household' that will help organize the data and stand up to theoretical examination.

The household really emerged as a fundamental unit of analysis in the work of Marx and Engels (1972 (1884)). Marx (1970 (1859)) proposed a science of history – with laws and predictions – and saw the relations of production as the fundamental structure of any society and the proper analytical level for these laws and predictions. For Marx, the emic social structure is a derivative and sometimes obscuring reflection of those productive relations. This Marxist approach posits a true basis of social organization, and a misleading cultural superstructure. Marx and Engels primarily based their theory on the empirical work of Lewis Henry Morgan (Morgan and Leacock 1974 (1877)), who along with Maine (1861) had established that the terrain of anthropology was to be kinship systems, primitive man and "Ethnical Periods" (Kuper 1988:66). The Marxist innovation was to take the household as a traditional, pre-capitalist, unit of economic production and therefore an important unit of social analysis.

It is not easy to trace the history of Marx's influence upon anthropology, for early anthropologists also had a great deal of impact on Marx and Engels, as is notable in Engels' *The Origins of the Family, Private Property and the State* (Engel [1884] 1972). Engels makes extensive use of Morgan's work, and as Kuper (1988:42) noted, "[Morgan's] theory was appropriated early on by Engels, whose particular interpretation still has its supporters." The Marxist tradition continued throughout the 20th century as one trend in anthropology, whether or not self-described as 'Marxist', and is seen in the positivist urge to make the discipline 'scientific' – based on hard data and mistrustful of grand or speculative theory.

In the early 20th century, Boas raised many lasting questions regarding the use of crude evolutionary formulas and other reductionist theories within anthropology. In his work, Boas challenged the base/superstructure dichotomy that Marxists propagated. Boas and his influential students advocated for the intractable variability of the ethnographic record and stated that it could not be easily compiled into any one simple reductionist schema. This same critique reappears later in the 20th century, when feminist scholars and others question some of the simpler schemata of the processualists.

Meanwhile, in the 20th century, the material nature of archaeological fieldwork, and artifacts in general, led many archaeologists to favor a Marxist approach. V. Gordon Childe (1939) was a pioneer in the field and his work on the "Neolithic Revolution" greatly influenced Leslie White, who, according to Sahlins, described society as a layer cake:

> Technology was the basis. The middle level, social structure, was determined by the technological base, since it consisted primarily of an organization for putting technology to work. Ideology, the top layer, could only be a reflex of the way people were related socially and of the knowledge of the world to which they were lead by their technological activity. (Sahlins 2000:515).

It seems as if the household emerged as an important focus of study, but the practitioners of anthropology and archaeology did not require a neat definition of household to answer the questions they posed. Their focus was on the top layer (ideology) and the bottom layer (economics), or on the collection of reliable data. We see, in general, that over a long period during the emergence of the field of archaeology, there was an ongoing tension between the building of theories and responsibility to data.

2.2.2 Processual Approaches and the Household Unit

Processual archaeology was concerned with modeling the evolution of societies as expressed in the archaeological record. Beginning in the 1950s, Binford, among others, made it a point to use artifactual findings to build an anthropologically relevant picture of the past (Binford 1964; Flannery 1976). Carneiro's work in the 50s and 60s, led to the publication of *A Theory of the Origin on the State* (Carneiro 1970), focused on the fourth level of complexity in observed social organizations: the state, which was seen to be the final step from band to tribe to chiefdom to state. These stages of social organization were distinguished and defined by their number of hierarchical levels, and these social levels are occupied by houses (which were not an important subject of Carneiro's work), which are the loci of household activities.

In the early anthropological household literature, writers construct arguments about the role of the household, as though the household were an agent responsible for the reproduction, consumption, and production of the individuals in the society (e.g. Willie 1953). Shared management of functions, such as productions and consumption, are the characteristic activities that make 'household' a more anthropologically relevant unit than 'house'. A minimal unit like the household was necessary if one examined the workings of larger societal structures. However, most of the classic work on societal organization and the differences between chiefdoms and states were more focused on administrative levels and other issues of control.

Hammel and Laslett began their seminal demographic work by describing the varying types of kinship systems that can reside within a single compound. As their work progressed it became clear that they were attempting to validate the general assumption that the nuclear family of a mother, father, and children, lived within a single residential unit. Their failure to arrive at a systematic model that could cover great synchronic and diachronic distance did not lead to the conclusion that the enterprise was impossible, rather Hammel's later work (Hammel 1984) extended this search.

A central component of this later work was his examination of definitions (Hammel 1981). Hammel's work acknowledged that the sheer profusion of emic terms for the household made the entire endeavor to construct a cross-culturally etic definition of the household tenuous at best. The household is impacted by many factors and within any one "culture" there may exist as many emic definitions of the household as there are members of that "culture". However, Hammel continued his search for a "deep structure" that could reliably predict the manifestations of a culture. In the end he was left with this definition, "The household in any society… is that social group larger than the individual that does not fail to control for its members all those resources that any (adult) member could expect to control for himself" (Hammel 1981: 21). The definition of households was inclusive enough to allow for continued research. To paraphrase, the house is not one person but rather the slightly larger unit that enables individuals to maximize their holdings while only sharing them with a small number of people (Hammel 1981). The need for a working definition is a manifestation of the concept that demography (or archaeology) must be quantitative in order to have value.

The need to have such cross-culturally identifiable units in order to analyze larger societal rankings was the impetus for the work of the processualists Wilk and Rathje (1982), who stated that there was a middle-range theory gap. Archaeologists did not always have a firm basis for connecting what was found in the ground to a model of the society that left the material in the ground, and Wilk and Rathje emphasized the household as a unit that would be useful in theory formulation. Wilk and Rathje (1982) asserted that any definition of the household had to include three elements of the household: 1) its social dimension 2) its material nature and 3) the behavioral activity it performs (Wilk and Rathje 1982: 618). This was an important step in realizing that a house was not necessarily equivalent to a dwelling unit. The *function* of households was of primary importance and four functions of the household were identified: production, distribution, transmission and reproduction (Wilk and Rathje 1982: 621). Using this analytical framework, rules governing the conduct of the household in times of plenty or in times of want were created. However, the most important step was assigning the household functional roles in the life of a small group of people.

Throughout the 1980s there was an increasing interest in household archaeology among processualists (Clark 1972; Flannery 1976; Clark 1977; Kramer 1982; Haviland 1988; Leventhal and Baxter 1988; Whalen 1988; Beaudry 1989; Ciolek- Torello 1989). Ashmore and Wilk's (1988) volume incorporated Hammel's definition of the house as the "smallest grouping with the maximum corporate function" (Hammel 1980), as the authors explicitly addressed the problem of distinguishing between the dwelling and a co-residential group. Thus, their definition of the household focused upon its activities and de-emphasized its role in kinship systems. Once again the household was an ‘abstractable’ element and therefore comparable across time and space as long as the comparison was made with households embedded within similar “developmental stages”.

2.2.3 Feminist Archaeologists and the Lived Life

In the 1980s and 1990s, one important criticism of the household concept was raised by researchers who have been identified as feminist archaeologists. If the goal of processual archaeology is to gain anthropological understanding of past life on the basis of the archaeological record, then the intense discussion of the household as a stepping stone to analysis of large social and economic units was losing sight of the most crucial anthropological unit, the individual. Some individuals are women; and the traditional focus on the household as a functional unit misses the lived experience of the individuals who comprise the household.

As archaeologists began to engage with feminist theory, they began to see complex social relations in the domestic arena-- an area previously postulated to be little more than a unified functional space where random women would work. However, these feminist archaeologists did not merely see women in these domestic realms, they saw members of all genders enacting and creating social relations that extended throughout all of society. One scholar was Henrietta Moore (1988) who criticized the roles typically ascribed to women in anthropological literature, such as carrying out the subjugated domestic work throughout all time and all cultures. In her scrutiny of the anthropological literature, she argued that close analysis of the varied dynamics that occur within particular households, necessitates further inquiry (she argued that the household cannot be compressed into the role of a single actor).

Ruth Tringham’s work (1991) on the role of women and the activities that they perform in houses helped push archaeological thought beyond the idea that women could only be studied as part of a process. Tringham called on scholars to move beyond the “faceless blobs” typically postulated to reside within households and to begin seeing individuals in the pictures of the past. While she did unequivocally challenge the idea that the household is the minimal unit of social reproduction, her call for the addition of faces to the picture carried the implicit concept that the household cannot be taken as a unitary actor reproducible across all time and space.

While Tringham found the practice of creating life histories of houses enabled her to focus on the processes (Tringham 1994) within the houses. Yet other archaeologists found that detailing individual lives to be a problematic endeavor. As Gero (Gero 1992:13) noted, placing women into stories of the past is difficult if one does not essentialize current gender norms and apply them to the past. The material residues of past behavior can be interpreted from a variety of perspectives and this problem is compounded if one is disallowed from presuming that a woman would have been the one using an awl or cooking a meal in a particularly fancy pot. Her point is that the universalization of some aspects of sex and gender is needed in the elucidation of past behaviors to avoid myriad problems.

Joyce and Gillespie’s (2000) volume on house societies marked an important step forward for household archaeology. In this volume they attempted to address the continuing problem of how to identity is produced and reproduced in society. While they did call upon Lévi-Strauss’ concept of the house society, they did not take it to be the last piece of the puzzle in kinship theory, as he had presented it in some writings (1982; Lévi-Strauss 1987). Within the space of the house it is possible to see the cyclical nature of interactions between the individual and society. This does not mean that the discourse of power exudes its most significant effects within the confines of a singular compound rather this work postulates that the house is simply one space in which individuals recreate their worldview, a la Benjamin (Adorno, Lonitz et al. 1999) and De Certeau (1998). Finally, the De Certeau essay leads us to wonder whether or not we should simply refer to houses as co-residential groups, rather than placing our own emic term upon these spaces.

One other issue beyond the household is the supra-household. Mary Weismantel (Weismantel 1995) notes that native Andean scholars/activists often postulate (Macas and Instituto Científico de Culturas Indígenas (Ecuador). Amauta Runacunapac Yachai. 1991; Choque, Delgado et al. 2000) that the social structure *ayllu/llaqta* (family/village) stands in contrast to the modern society, and that it is a timeless minimal unit that resists the norms of the dominant capitalist culture. While many anthropologists are sympathetic to the agendas of these scholars they are troubled by the activists' use of essentialist notions of community. However, if there is any lasting lesson to come from this chapter it is that theory should trouble us and force us to reinterpret previous interpretations. If we as archaeologists are to advocate for multivocality (Hodder 1990) then we must realize that various concepts, located at all points across the theoretical spectrum, may be employed by others. And if we are to avoid colonizing the past as well as the present then we must allow these disparate voices to be raised and heard.

In sum, feminist archaeology showed that another, person-oriented, view of societies was needed to illuminate the anthropological results of archaeology, but the movement has not produced an alternative definition of the household that is relevant to this dissertation.

2.2.4 Household Defined

In this dissertation, a definition of the household is adopted from D'Altroy and Hastorf (2001). The UMARP project that engendered this definition was processual in orientation and was active in the period from 1977 to 1986, during the processual household debates cited above. Over the course of the project, D'Altroy and Hastorf worked with the definition of Netting (1989), but modified it to address the concern that individual experience within the household needs a place in theory. While the term household is constantly in need of reassessment I follow the general terrain outlined by the UMARP Project:

> The concept of the household, like the domestic economy, has come under renewed scrutiny in the last two decades. We find Netting's (1989:231; see also Wilk and Netting, 1984) concept of a household useful: "a socially recognized domestic group whose members usually share a residence and both organize and carry on a range of production, consumption, inheritance, and reproductive activities whose specific contents varies *[sic]* by society, stage in the life cycle, and economic status." This behavioral definition shifts away from analysis in terms of kin structure (e.g., Murdock, 1949; Goody, 1972; Laslett and Wall,

> 1972). The reorientation is deliberate among many researchers who have sought analytical categories based on how societies and their members live their activities and social relations that are independent of how they conceive them (D'Altroy and Hastorf 2001: 9).

The emphasis on activity and function in this definition makes it appropriate to the analysis of the La Banda data, since the artifacts collected suggest production and consumption activities related events that occurred in the ceremonial center. At this point in time, I engage in a minimal comparative analysis of La Banda architecture to other sites. Rather, lived life and the activities that happened within this physical setting are the important aspects of my analysis.

2.3 Concluding Thoughts

In this chapter I presented two distinct corpuses of work ecological theory, three ecological perspectives, and the household in archaeology. These two bodies of thought are united again in later chapters when I discuss domestic lived life and food practices in La Banda. Additionally, ecology and the house are important themes in my discussions of exchange and the production of exotic ritual goods as most of these goods were made from biological material and were constructed in the household.

It is impossible to understand the subsistence practices of the inhabitants of La Banda without first discussing farming and agricultural strategies. This chapter presented specific forms of agriculture that are practiced in the highland Andes and discussed how these forms of growing feed inform our ideas of past agriculture. As mentioned here all pre-contact agriculture was organic and these farmers had few external fertilizers, other than dung and spoiled food, they could introduce into the system. These findings are necessary components for creating a nuanced vision of past daily life. Once an image of how farmers practiced agriculture is formed it is possible to create a vision of how these people moved through their daily lives.

The household was discussed by studying how archaeologists' conception of the house has changed over time. One key point raised by feminist archaeologist was that it was necessary to consider the activities that happened within the household not just consider the house as a minimal unit that replicates society. This focus on peoples' lives is part of my study of daily life at La Banda. I, like Hastorf and D'Altroy, chose not to focus on kin relations but rather on the production, consumption, and other activities that happen within this space.

This chapter provides a framework for understanding all of the chapters that follow. This discussion transitions into discussions of Andean space and place, ritual, and Andean timeframes. These future chapters are based on the concept that long term processes and daily life inform all aspects of life, and these concepts are derived from my studies of historical ecology and household archaeology.

Andean Space and Place

3.1 Introduction

In this chapter, I elaborate on the concepts of space, people, and place in the region. I present the geology, native plants, and agricultural practices of the region as well as additional relevant information on the Andes. The discussion of ecology, as well as the analysis of Andean space and place, help frame the setting for the archaeological analysis of the La Banda community.

The chapter moves from permanent features of the landscape, such as the geology, to more deviating aspects of the environment such as the climate and the local ecology. There are discussions of Andean people and the roles they play in maintaining and changing the landscape. Finally, I move on to discuss some modern agricultural practices and the parts that different members of the community perform when working in their fields.

As this is the first time in the dissertation that I seriously discuss the importance of Chavín's physical location in the Andes it is necessary to describe the geography of Peru. The country is located in western South America (Figure 3.1) and the coast is marked by the presence of forty major rivers (Figure 3.2) that flow down from the highlands through the desert into the Pacific Ocean.

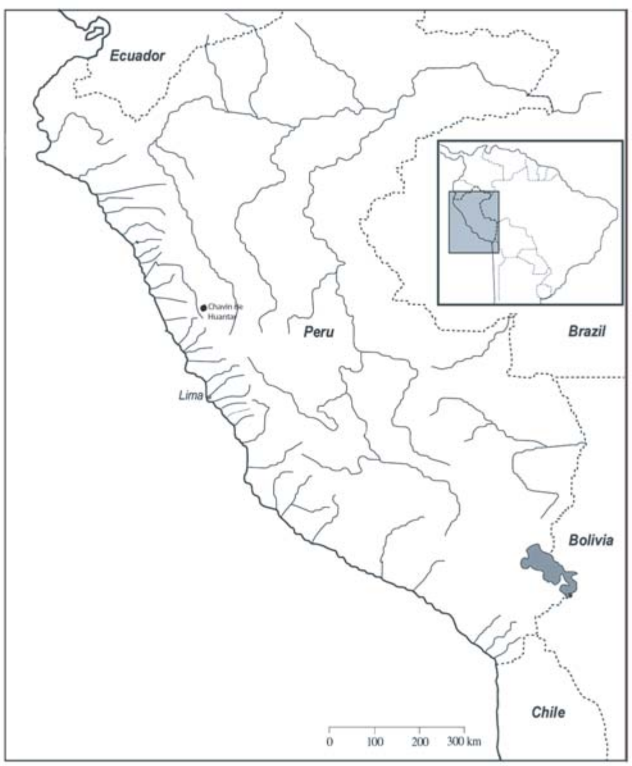

Figure 3.1: Map of Peru and Andean Region (modified from Hastorf 2008:83). The Marañon River is the major river east of Chavín de Huántar.

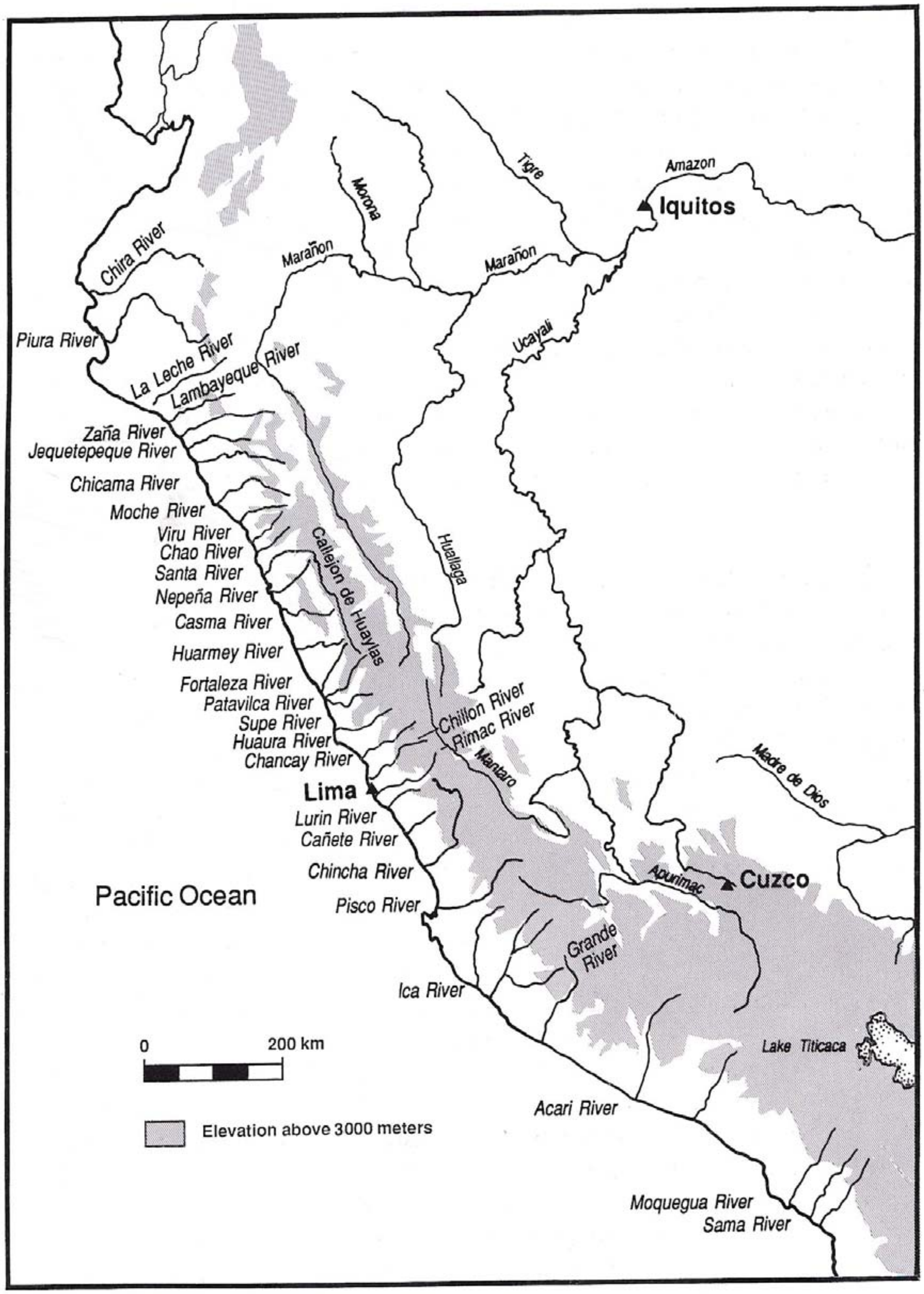

Figure 3.2: Rivers of Peru, from Burger 1995: 13

3.2 Geology

The Cordillera Blanca's towering peaks separate Chavín from the coast. However, the western edge of the Andes leads relatively smoothly down into the Amazon drainage. From the site of Chavín the Mosna River (Figure 2.1) flows north out of town and eventually joins the Rio Marañon (Figure 3.2) before leading down to the Amazon.

The geology of the *Callejón de Conchucos*, the valley directly east of the *Callejón de Huaylas* (Figure 3.2), shapes the story of Chavín in a myriad of ways. The *Cordillera Blanca* in Ancash is one of the most densely mountainous regions on earth. There are over 20 peaks over 6000 masl in the 100km region surrounding Huaraz. The geology not only impacts the difficulty in travelling to and from Chavín but it also dramatically alters local agriculture and resource production.

The bedrock geology of the region has been studied at both the macroscale (Cobbing et. al 1996) and the microscale (Turner, Knight et al. 1999). At the macroscale the local mountains are mainly composed of hard granitic rock that has been subjected to violent upheavals. This granitic rock was mined by the ancient Chavín inhabitants for construction purposes. There are also significant inclusions of sedimentary rocks in the chain and they were more accessible to miners and in many instances are located close to the site (Turner et. al 1999:48).

The microscale geology reveals that much of the valley slopes consist of bedrock covered by thin soil or other deposits. It is apparent that the Mosna River was dammed by a landslide at some point in pre-Chavín times (Turner et. al 1999:55). This crucial event created the broad floodplain that the modern town of Chavín now sits on. While this geologic event has not been dated there are Chavín period structures above the flow (Burger 1984; Diessl 2004). It is probable that the Mosna River was dammed by an earth flow in the early Holocene and a small lake was created. The river eventually broke through this earth wall and began to erode the earth escarpment that had contained it.

The modern town of Chavín (Figure 3.3) is placed on a 2.5km long by 1 km wide ribbon of alluvial land (Contreras 2008:101). This flat expanse of arable land located beside a non-seasonal river is an auspicious place to begin a settlement. Flat alluvial land suitable for agriculture with easy access to a consistent water supply is rare in the area. This could mean that Chavín was constructed in this region in part because there was flat farmland available.

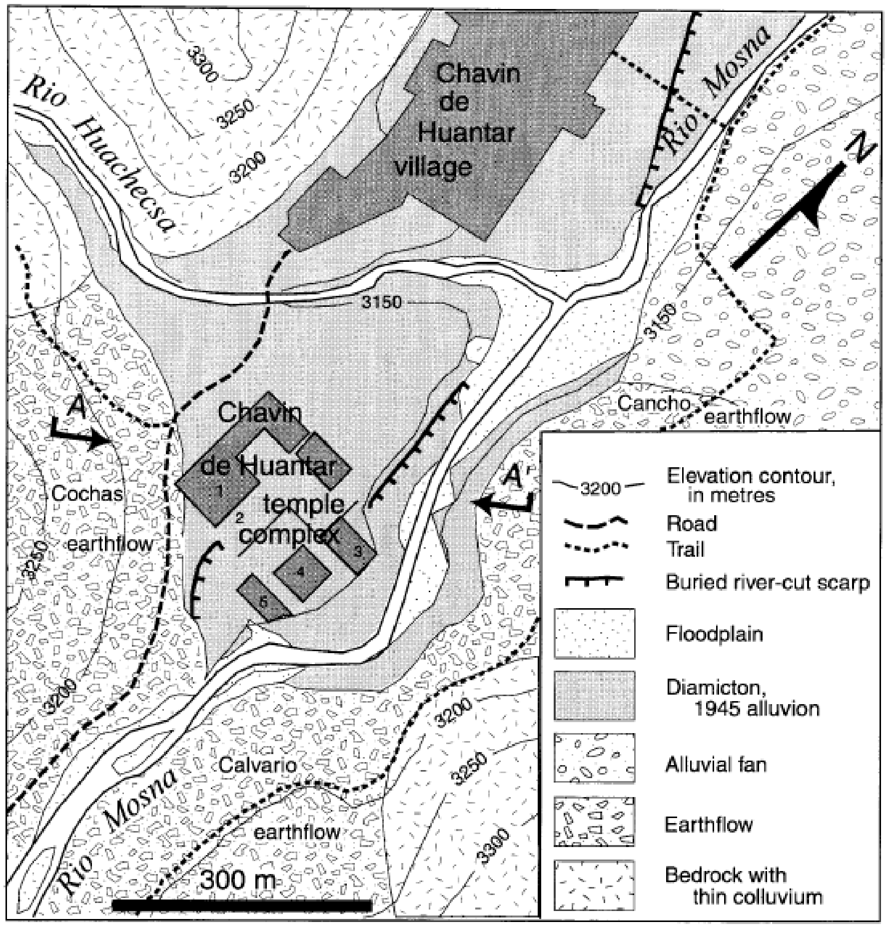

Figure 3.3: Chavín and local earthflows, the modern town is on the floodplain. From Turner 1999: 50.

Across the Mosna River from the main temple of Chavín lies the La Banda Region. This region is a tell-like construction of building placed on top of building. However, my research in the region also revealed the presence of an ancient riverbed. Underneath the region excavated in 2005 sand riverbeds were encountered under three units. In this region it appears that the site was built directly on top of old riverbed, meaning that this land was unlikely to be useful for agriculture at the time of the construction of these settlements. This would have made it a good place to build a domestic settlement that had easy access to the main temple and the flat alluvial floodplain north of the temple.

There are three major earthflows (Figure 3.3) in the immediate area surrounding the temple of Chavín, see (Turner et. al 1999:50). While the Cochas earthflow to the southwest of the monument is the largest mass and poses a long term threat to the structural integrity of the temple, it is not the earthflow of most pressing concern to this project. This is because the Cocha earthflow does not extend to the east of the Mosna River. In the La Banda region east of the temple there are two major earthflows, the Cochas and Calvario earthflows. Both of these land movements share a similar source of material, upslope from the valley bottom, which means they are composed of similar materials. The earthflows are extensively cultivated although the Cochas earthflow is divided by a stream which serves as an additional source of irrigation water for the region which in general lacks adequate or facile access to sources of irrigation.

3.3 Ecology and Paleoethnobotany of South America:

In this section I cover a wide geographical, theoretical, and methodological expanse. As such it will be necessary to limit the discussion of particular subjects. I initially describe my own particular orientation and region of study. As a North American who works in Latin America I will use different terminology than a Latin American would use, these differences extend from the most basic to the most grand conceptual categories. Even the term South America is value-laden as people from the southern reaches of the Americas do not consider themselves to live on a distinct continent, in their schemata the Americas are all one continent. South America is considered to be a region of this continent. Additionally, many North American archaeologists who work in the countries that form the western spine of South America refer to themselves as Andeanists, a term that has more specific connotations in the countries that actually contain portions of the Andean mountain chain (Stanish 2001). Peruvian archaeologists who work on the coast would be reluctant to describe themselves as Andeanists yet when they come to conferences in the United States they find that their research and cultural area has been subsumed under the title of a neighboring zone (much of this difference has to do with the fact that most schools in Lima and other urban areas continue to teach the Spanish tripartite division of the country's regions). These biases aside there are numerous arenas of terminology and research in which North and South Americans agree.

There are four main sections to this portion of the chapter. Many of these sections are further divided to examine the subject matter in greater detail. The four central subjects are: Paleoethnobotanical methodology, the regions of Western South America, Ecology and Ethnography, and Paleoenthnobotanical research conducted in Western South America.

3.3.1 The Environment and the Andean Regions

Any attempt to compress the geography of an entire region into eight succinct units is inevitably fraught with contradictions. This does not mean that the endeavor is without merit, for both scientists and indigenous peoples have long found that essentializing categories can be useful across large expanses. Many North American archaeologists rely upon the classic works of Holdridge (1947), Tosi (1960), and Pulgar Vidal (1972) when they describe the different environmental zones of Western South America. In general these treatises focus on the geography of Peru and the cover the zones from the west to the east, the same directional trend that most visitors to these countries travel. In many case the zones may occupy a similar space but the vegetation contained within the zone may differ dramatically.

Carl Troll was a scholar of Andean ecology who followed in Alexander von Humboldt's intellectual footsteps. Troll (1968) did not limit his definition of zones to the tropical mountain climates and vegetation. He added aspects of land-use as well as explicit altitudinal limits to his zones. It was this absolutism (the direct connection of zones to specific altitudes) that both furthered and limited the work of Humboldt.

My detailed descriptions of the different zones outlined by another prominent ecologist of the Andes, Pulgar Vidal, are a by-product of the lasting legacy of this work. As Pulgar Vidal stated:

> junto con el poco aprecio que la mayoría de los inmigrantes subsiguientes tuvo por el saber del hombre común del Tahuantinsuyo, hicieron imposible incorporar, en un segundo momento histórico, los conocimientos de los aborigines al patrimonio cultural que sistematizaron los Cronistas, limitándose éstos a repetir muchas de las invenciones elaboradas en los primeros días de la Conquista…… Debido a que acabamos de exponer someramente,a lo largo de varias centurias se han venido repitiendo que el territorio peruano está dividido en tres regiones geográficas: la Costa, la Sierra, y la selva (Pulgar Vidal 1946: 11).[5]

This attempt at providing an indigenous classificatory scheme to an area of study that typically borrowed terminology from European scholars had a lasting impact, there are still attempts to use this zone model as a framework for Peruvian land-use planning (Tapia 1996).

Many modern day ecologists believe that the attempt to absolutely define different zones is a never-ending task. The quest to theorize ecological succession and define "climax forests" has not met with a pleasant end (Botkin 1990). It is now acknowledged by most ecologists (Gade 1967) that the environment and different zones are dynamic entities that never had a fixed state; they are in a constant state of flux.

I will confine my own descriptions of these zones to the areas that have coastal contact with the Humboldt Current. The current begins in Chile and moves north before it heads west from the Santa Elena Peninsula of Ecuador to the Galapagos Islands. It provides a cold upswelling of ocean water that sustains one of the largest fish populations on earth. However, the cold water limits the amount of precipitation that falls on the coasts of Peru and Chile, creating regions with very limited precipitation, regions that must rely on streams and irrigation for any form of sustainable and intense agriculture. To the north of the Humboldt Current the warm waters of Ecuador border a completely different environment, this land was the traditional stronghold of the mangrove forests.

By limiting my description of the different environmental zones of the Andes to the coastal regions that are in contact with the Humboldt Current I effectively limit my discussion to that region of South America typically referred to as the Central Andes. Additionally, I will use Pulgar Vidal's terminology of this region for the sake of clarity. The Northern Andes stretch from Ecuador to Northern Colombia, whereas the Southern Andes reach from Southern Peru and Bolivia down to Chile and Argentina (Ferreyra 1986: 43). This Central Andean region, as with the rest of the

[5] "Together with the little appreciation that the majority of subsequent immigrants had for the knowledge of the common man of Tawantinsuyu, they made it impossible to incorporate, in a second historic moment, the knowledge that the aboriginals had of their cultural patrimony which was systematized by the Chroniclers, and were limited to repeating the elaborate inventions first stated in the early days of the conquest…. Thus we finish superficially stating, over the course of centuries they have continued repeating that the Peruvian territory is divided into three geographic regions: coast, mountain, and jungle." Translation mine.

Andean Region, varies most greatly with elevation. The dramatic rise and fall of the mountain chain can create distinct zones/ecological communities. The mountains rise from the edge of the dry western desert and gradually form two distinct chains that descend to the east down in to the Amazonian rainforest.

In the chart below (Table 3.1) there are two attempts to define the regions of Peru, there are many similarities between the two lists; however, there are some crucial differences. Pulgar Vidal adds one extra zone than Troll to the western region of Peru, the yunga, whereas Troll adds a transitional zone on the decent to the Amazon, the medio yungas. The terms are defined in the section that follows the table and the illustration in Figure 3.4.

Table 3.1: The eight zones of the Andean Region, as defined by:

Pulgar Vidal (1972)	Carl Troll (1968)
Chalo or costa	Arido
Yunga (maritime)	Sierra
Quechua	Páramo
Jalca or Suni	Puna
Puna	Nevados
Janca or Cordillera Nevada	Ceja de montaña
Ruparupa, Selva Alta	Medio Yungas
Omagua, Selva Baja, Amazonia	Montaña

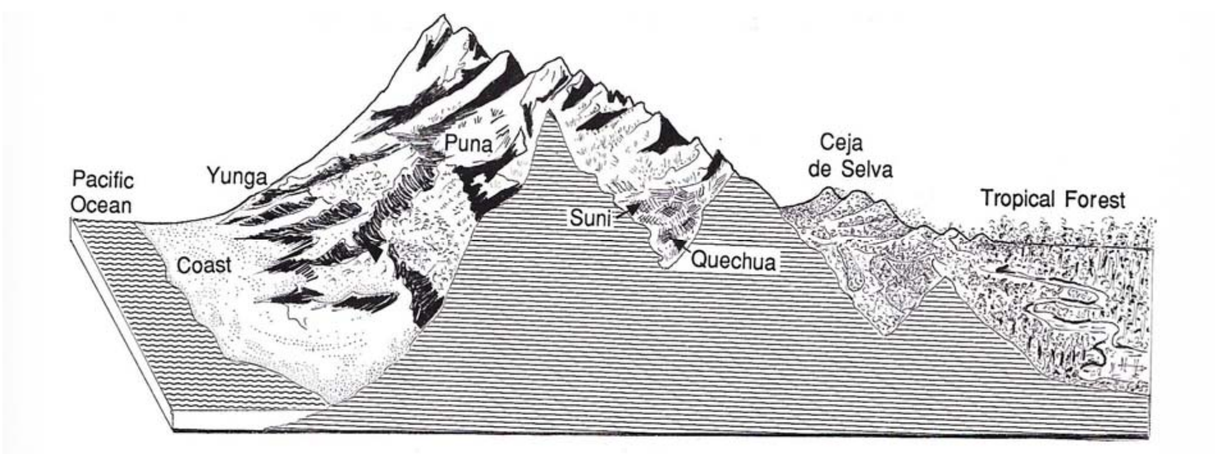

Figure 3.4: Environmental Zones, from Burger 1995:21.

1) The Costa- is a desert region dominates the coast of Peru and Northern Chile from 0 to 500m and does not solely support completely xerophytic plant life. The *lomas*, or cloud forests, are a result of moisture condensating in the slightly raised regions of the hills. This region will receive a more systematic treatment in the section on coastal archaeology. Rainfall is rare in this region and irrigation is necessary in order to support extensive fields.

2) The Yunga zone- which lies from 500 to 2,300 m, means warm valley in Quechua. The arid region of this zone is also capable of supporting agriculture, especially in cases

where canals are present. The crops from low elevations presented in Table 3.2 grow in this zone. Rainfall here is still sporadic but more common than in the coastal zone.

3) The Quechua zone- located at 2,300- 3,500 m, is of primary importance to my research as Chavín de Huántar is located in an intermountain valley. Most highland sites are located in this region[6] and climate is the most hospitable for human habitation and it also allows for a wide variety of crop plants to be grown (Table 3.2). The economic diversity of this region will be systematically described in the ethnographic section. Rainfall is plentiful and farming is possible without irrigation.

Figure 3.5: La Banda community members working in a Quechua zone potato field. The eucalyptus trees in the background are non-native.

4) The Suni zone- is the sloped highland region that lies between 3,500 and 4,000 m above sea level (masl). It is possible to grow quinoa and potatoes at this altitude. Maize reaches the edge of its productive capacity at his altitude. In general, this zone was less economically desirable in post-contact agricultural times because frost, wind, and other environmental factors meant that most lowland, exotic, and tropical crops simply could not survive at this altitude.

[6] The name of Chavín itself may be related to its position in the local zone. Many Quechua speakers, when naming the different zones where they work or live, are prone toward listing the zones in a gradational manner, thus many fields or homes will be located in the chawpi, or intermediary/center region, rather than being distinctly settled into one of the zones. Thus, Chavín could be a reference to the fact that many people in the area live in the valley bottom or on the lower edges of the Quechua zone, whereas many of their fields lie in nearby zones of differing altitudes (note: this goes against Lumbreras (1989) statement that Chavín was named center because of its preeminent ideological status in the area).

5) The Puna zone- high plains occur between 3,700 and 4,790m. The region is dominated by species of the Poaceae Family; the high grasslands are the home to the four members of the camelid family that live in South America (Llamas (*Llama llama*), guanacos (*Lama guanicoe*), vicuñas (*Vicugna vicugna Molina*), and alpacas (*Vicugna pacos*)). Two of these species, llamas and alpacas, have most likely been domesticated and cared for in this zone for over 6,000 years (Wing 1986). The llama and alpaca were the backbone of the economic system in the zone, providing food, transportation, fuel (from dung), and wool for cloth and rope.

6) The Cordillera Nevada- is not a continuous snowy mountain top zone. Snowfall is nearly year-round and the zone stretches from 4800 m to around 7000 m. This region has been ritually important to highland peoples but due to the limited grass that can grow the zone has been of little economic importance.

7) The Selva Alta- high jungle, in Inka times was where (along with the coast) most of the coca, a plant of primary ritual importance, was produced (Plowman 1984:136). This region has been characterized as a boundary region existing between the high Andean cultures and the tropical cultures of the Amazon.

8) Amazonia- or lowland tropical jungle, located from 80-400 m, is one of the most species diverse regions on the planet. Rainfall is plentiful and diverse crops and fruits can be grown here. The zone is almost home to a diverse population of microbes which make excursions into the zone by non-locals dangerous.

Figure 3.6: Local native forest of *Polylepsis tarapacana* trees upslope and east of Chavín and La Banda (4000masl).

3.3.2 Native Crops:

The Andean region has provided a number of crops that sustain a large portion of the world's population (Harlan 1992). Most famously potatoes have spread across the world but so have other important crops, such as, yucca, jicama, peanuts, and beans. Many of the more prominent indigenous domesticates of western South America are listed below in Table 3.2.

Table 3.2: Indigenous Domesticates of Western South America. Based on Harlan 1992:77-79, unless otherwise noted. In general, low elevation is 0-1500m, medium is 1500-3500m, and high is 3500m+. The low elevation crops could not be grown at Chavín. *(Plowman 1984) ^(Piperno and Pearsall 1998)

Latin Name of species	Common name of plant	Elevation of optimal growth	Use value
Amaranthus caudatus Linn.	Amaranth, achis	Medium	Pseudocereal
Chenopodium pallidicaule Allen	Cañahua	High	Pseudocereal
C. quinoa Willd.	Quinoa	High	Pseudocereal
Arachis hypogeal Linn.	Peanut	Medium	Pulse
Canavalia plagiosperma Piper	Jack bean	Low	Pulse
Inga feuillei DC	Pacae	Low	Pulse
Lupinus mutabilis Sweet	Chocho	Medium	Pulse
Phaseolus lunatus Linn.	Lima bean	Medium	Pulse
P. vulgaris Linn.	Common bean	Medium	Pulse
Arracacia xanthrorrhiza Bacr.	Arracacha	Medium	Root/Tuber
Calathea allouia Aubl.	Lairen/leren	Low	Root/Tuber
Dioscorea trifida L.f.	Yam	Low	Root/Tuber
Lepidium meyenii Walp.	Maca	High	Root/Tuber
Manihot esculenta Crantz	Yuca	Low	Root/Tuber
Maranta arundinaceae L. ^	Arrow root	Low-medium	Root/Tuber
Pacchyrrizus ahipa Wedd.	Jícama or ajipa	Medium-High	Root/Tuber
P. tuberosus Spreng.	Jícama or asipa	Low-Medium	Root/Tuber
Oxalis tuberosa Mol.	Oca	High	Root/Tuber
Polymnia sonchifolia Poepp et. Endl.	Yacón	Medium	Root/Tuber
Solanum tuberosum Linn., *Solanum indigenum* Linn., *and Solanum juzepczukii* Linn.	Potato	High	Root/Tuber
Tropaleum tuberosum R. & P.	Añu/mashua	High	Root/Tuber
Ullucus tuberosus Caldas	Ulluco	High	Root/Tuber
Xanthosoma sagittifolium L.	Huitina	Low	Root/Tuber
Gossypium barbadense Linn.	Cotton	Low	Utilitarian/oil
G. hirsutum Linn.^	Cotton	Low	Utilitarian/oil
Anacardium occidentale L.	Cashew	Low	Fruit/nut
Ananas comosus L.	Pineapple	Low	Fruit

Latin Name of species	Common name of plant	Elevation of optimal growth	Use value
Annona cherimolia Mill.	Cherimoya	Low	Fruit
A. reticulate Linn.	Anona	Low	Fruit
A. muricata Linn.	Guanábana	Low	Fruit
A. squamosa Linn.	Sweet sop	Low	Fruit
Bertholletia excelsa HBK	Brazil nut	Low	Fruit/nut
Bunchosia armeniaca Cav.	Ciruela de la tierra	Medium	Fruit
Carica spp. A.	Papaya	Low	Fruit
Cyclanthera pedata Schrad.	Achocha	Medium	Fruit
Cyphomandra betacea Cav.	Tree tomato	Medium	Fruit
C. splendens Dun.	Tree tomato	Medium	Fruit
Lucuma obovata L. ^	Caimito	Low-medium	Fruit
Opuntia exaltata Berger	Cactus	Low	Fruit
Passifloria spp L.	Granadilla	Low-Medium	Fruit
Persea Americana Mill.	Avocado	Low	Fruit
Psidium guajuava Linn.	Guava	Medium	Fruit
Solanum muricatum Ait.	Pepiño	Medium	Fruit
S. topiro Humb.	Coconá	Medium	Fruit
S. quitoense Lam.	Lulo	Medium	Fruit
Capsicum baccatum Linn.	Ají Pepper	Low	Spice
C. chinense Jacp.	Habañero Pepper	Low	Spice
C. frutescens Linn.	Tabasco Pepper	Low	Spice
C. pubescens Ruiz	Rocoto Pepper	Low	Spice
Cucurbita maxima Lam.	Squash	Low	Vegetable
C. ficifolia Lam.^	Squash	Low	Vegetable
C. moschata Duch.	Butternut Squash		Vegetable
Physalis peruvianum Linn.	Uchuba	Low	Vegetable
Theobroma cacao L. ^	Cacao	Low	Food/spice, etc.
Datura spp	Jimson weed	Low	Drug
Erythroylum coca Lam.	Coca	Low-Medium	Drug
Erythroxylum novogranatense Morris (Plowman 1984)	Coca	Low-medium	Drug
Nicotiana rustica Linn.	Tobacco	Low	Drug
N. tabacum Linn.	Tobacco	Low	Drug
Paullinia cupana HBK	Guaraná	Low	Drug
P. yoco Schultes	Yoco	Low	Drug
Bixa orellana Linn.	Achiote	Low	Utility
Crescentia cujete Linn.	Tree gourd	Low	Utility
Indigofera suffruticosa Mill.	Añil	Low	Utility
Lagenaria siceraria Standl.	Bottle gourd	Low	Utility

Potatoes do not merely sustain the body, this staple of thousands of years has acquired important symbolic and cultural meaning. There were many indigenous techniques developed to maintain and store (i.e. chuño) this staple. The Andean field was never a monoculture composed of a single variety of potato. Their fields brimmed with a diversity of forms, flavors, and genes. They could adapt to the presence of weeds (Figure 3.7) and find uses for these plants. This commitment to rotations helped prevented enormous blights from destroying harvests and future yields. Unfortunately, this aspect of local tuber agriculture was not transported to Ireland and other areas of the world that welcomed the potato into their agricultural fields.

Figure 3.7: Common disturbance weed (*Solanum hispidum*). Plant is ~30cm in height.

Not all of the important economic plants of the Andes are sources of nutritional sustenance. Many of the world's most important drugs come from this region and may be used in pure or derived forms. Examples of the drug plants that come from the Andes are coca, species of *Datura*, tobacco, *ayahuasca* (which is a combination of two or more plants), and many other less commercialized plants. Of the drugs that originated from this region cocaine (produced from one of the 40 alkaloids found in *Erythroxylum coca*), Coca-cola, and tobacco are the most important.

Farmers in the Andes continue to rely upon many of the same plants that their ancestors did (Figure 3.4). However, there have also been many introductions that have almost completely replaced native plants. Of particular note is the pre-conquest dominance of quinoa, a grain that is now confined to the uppermost slopes where other non-native plants, such as wheat and barley, have a difficult time growing. Although maize was a subsistence and ceremonial staple at the time of the conquest (Hastorf and

Johannessen 1993) it was not domesticated in the Andes. The exact arrival point of maize in the Andes is still a point of contention, however, there is no debate that it has been on the coast for at least the last four millennia (Bonavia 1982; Bird 1987; Pearsall 2004; Staller, Tykot et al. 2006). The earliest dates for the arrival of maize on the coast (Piperno and Pearsall 1998) and in the Amazon (Bush, et al. 1989) are still being clarified.

Figure 3.8: Local field (3600 masl) that contained a polycrop of maize and potatoes.

3.3.3 Human and Plant Interactions: Land Use

Perhaps the most debated school of Andean research has been the, *Lo andino*, or Andean
perspective. The seminal works in this school were the early publications of John Murra on the concept of vertical control. The type region for his study, the Lupaqa kingdom (Murra 1962; Murra 1972), was a high and dry setting and the model is better suited in that environment. Although *lo andino* may never have fit exactly in to the model that he outlined for the area (Stanish 1989) his emphasis on the vertical nature of andean fields was an important contribution. The concept that local farmers had deep histories of risk

management strategies led many researchers to examine current practices to see if they reflected pre-Colombian patterns.

Stephen Brush (1977) documented three different types of Andean Zonation: archipelago (different fields in different zones), compressed (fields in nearby zones), and extended (fields in stretched zones). The first was the archipelago type of John Murra and it remains common in the Marañon and Huallaga River drainages (1977:11). Brush also recorded the compressed type and extended type of zonation. In the compressed type the zones are very close to one another and local *campesinos* do not necessarily need to commute to gain access to another zone, many of them are within walking distance (Brush 1977:11). The extended type is, "characterized by relatively long valleys which include the usual set of Andean crop zones (Brush 1977:13)." In this system exchange and marketing, in modern times, replace some of the need to move up and down vertical and horizontal zones, access to outside goods is assured due to human contact and interaction.

The work of Enrique Mayer (1974; 2002) was seminal in this field, not only in the sense that it reveals much of the complexity of the highland valleys but also in the sense that it inspired a whole generation of researchers, both North American and Latin American. These researchers set out to catalog local farmers' practices and knowledge. They began to acknowledge that local farmers had large suppositories of useful information and that these farmers may not benefit by blindly taking and applying the most recent theories proposed by university trained agronomists. Mayer challenged Murra's assumptions on certain fronts but he also noted that anthropologists had focused on select elements of Murra's analysis. "Murra uses four key terms- 1) control 2) maximum 3) vertical and 4) ecological levels- but it seems too that anthropologists have focused on the latter two to the detriment of the others (Mayer 2002: 241)." In highlighting this problem Mayer was demonstrating that anthropologists' fascination with Murra's island concept lead them to ignore elements of control and manipulation that were embedded within his concept of the vertical archipelago.

In particular, Mayer focused on the myth of production zones. The variety of local conditions does not mean that the environment was a dominant factor that absolutely limited people's ability to grown economic and luxury crops. Brush (1977) Brush and Guillet (1985), Mayer (1974)) and others have demonstrated that local peoples have developed technical solutions to these problems enabling them to partially control their local geography. Examples of these technical adaptations include canals, raised fields, terracing, communal labor, and fertilizer.

Archaeologists, agricultural ecologists, and other botanically minded scholars must be intimately aware of the landscapes they study. This entails constructing a much greater knowledge base than is necessary for most archaeologists who can limit themselves to definitions of the eight regions of South America. This familiarity with the landscape is necessary because plants and animals can react differently to micro-zones. Thus, scholars researching agriculture in this area have created a wide variety of schematic plans to describe how local farmers manage their fields and reduce the risk to their livelihood: Brush (1977), Winterhalder and Brooke Thomas (1978), Gade (1967), Mayer (1979), Tapia (1996), and Zimmerer (1988, 1996). Although my own research is confined to the Quechua zone this does not mean I can homogenize the local terrain, from one valley to the next there are a wide variety of factors to consider.

3.4 Land Movement and movement through the Landscape

In 1945 a huge earthquake in the *Callejón de Huaylas* (Figure 3.2) released what is locally called an *alluvión* (major debris flow). This event, in January of that year, released a high velocity large quantity of soil and debris that flowed down the Rio Wacheqsa and onto the temple and modern town of Chavín. The high velocity event most likely began as a debris flow that overwhelmed a debris dam (Turner et. al 1999:52). After breaking the dam the material quickly descended down the valley all the while incorporating more material in the process.

This major earthflow helped reveal the relative frequency of such events in the region. There have been similar events of such magnitude in the region in the recent past; the town of Yungay in the *Callejón de Huaylas* was destroyed by an *alluvión* in 1970. However, this should not be taken as evidence that the town of Chavín has suffered such events every half century. Rather, there is some evidence that it had been several centuries or millennia since the last major earthflow down the Rio Huacheqsa (Contreras 2007).

Olleros Trail-

The ancient routes to and from Chavín to the coast are not overly clear but the most likely path east between the *Callejón de Huaylas* and the *Callejón de Conchucos* was via the Olleros Trail. This trail was partially covered by the *alluvión* of 1945 but is now exposed. It connects the modern town of Olleros with the town of Chavín, with the trail disembarking west of the main temple of Chavín. The trail crosses over the Yanashayash Pass and covers a wide variety of terrain, from views of frozen peaks to open grasslands and pockets of Quenua (*Polylepis tarpacana*) groves (see Figure 3.6 for examples). While the scenery is visually arresting it is not more dramatic or varied than many other trails in the region, such as the Huayhuash or Santa Cruz trails that past closer to many of the mountain peaks.

The trail is approximately 40km in length and it is possible for a traveler to cross the entire trail between the two valleys in one day. However, it is more likely that groups of travelers crossed the mountains with llama caravans over the course of more than one day. The path contains remnants of pre-conquest constructions, which are difficult to date due to their lack of associated artifacts. This is the path that researchers used to take to arrive at the site before the construction of the road and tunnel over a higher region of the mountain passes.

3.5 Climate

There are few sources that accurately document the exact climatic history of the town of Chavín de Huántar. Chavín is 3180 masl and this is a similar elevation to many of the larger towns and villages in the region which are also often situated on valley floors. This fact permits researchers to draw on larger climatic databases to interpret the ancient climate of Chavín using proxy data sets.

The modern climate of the town of Chavín is typical of many *quechua* zone towns. The temperature in the region is marked by dramatic swings in the daily temperature, which is often more extreme than those that occur in between seasons. The high altitude mountainous setting with few cloudy days is not conducive to retaining heat. The high temperatures of the afternoon often quickly fade as the sun sets, leaving the possibility of night time freezes in areas that experienced temperatures high above freezing during the day.

There is a reliable proxy data source from the nearby weather station at Querococha. Querococha is roughly 25km away from Chavín as the crow flies (Diessl 2004:34), near the *Callejón de Huaylas*. The station's records reveal that there is ample variation in the daily temperature, from sunrise to sunset, and that the seasonal difference is less marked (Diessl 2004). There are two distinct seasons at Chavín, the wet and the dry season, and the average annual rainfall is 754mm per year. The wet season falls from December – April (512mm average rainfall) and the dry season is from May- November (242mm average rainfall). Near the end of the dry seasons is when planting occurs as it is rarely possible to have more than one harvest per year. Harvesting of most plants occurs in the beginning of the dry season and planting occurs prior to the onset of serious rains.The climate is capable of extreme change in El Niño Southern Oscillation Events (ENSO) years. The ENSO events are more dramatic on the Pacific coast of Perú where they often lead to large rainfall and dramatic flooding (Sandweiss et. al 2001).

The changes in the climate of the highlands due to ENSO events vary by region (Diessl 2004). The altiplano in the south is definitively more prone to drought, the central highlands are slightly more prone to drought, and the north central highlands are more prone to drought as well. Thus, the most immediate effect on the ancient inhabitants of Chavín may have been drought in ENSO years. During ENSO events there may have been suffering on the coast and in the highlands which may have lead to similar feelings of panic and dismay among the inhabitants in both regions.

3.6 Local Contemporary Agriculture

Here I will present a brief description of modern agricultural practices in the areas surrounding the modern town of Chavín. These insights are gained from my own experiences collecting plants, talking to farmers, and working with other archaeologists. The major discussion of ancient agricultural practices will occur in chapter 7 after the results of macrobotanical and microbotanical data has been presented.

In modern times Chavín and the surrounding regions contains a large population of subsistence farmers. Many of these farmers practice organic agriculture due to a lack of capital inputs. In particular, the recent rise in the price of petroleum has severally limited farmer's capacity to purchase fertilizers. When farmers have access to extra capital they often do convert that capital in to chemicals, however that is rarely an option.

The physical terrain impacts many aspects of agricultural practice. The steep patchwork of hills and mountains do not lend themselves to mechanical agriculture and most farmers do not have access to these machines. Many of the local *chacras* (fields) are owned by people living in town or in other regions and they employ farmers to work their fields in return for a percentage of the harvest. The few areas where machines are employed are in the fields on the floodplain and other flat regions, these ideal plots are owned by the wealthier landlords.

Other researchers have documented that roughly 90% of the valley does not have access to irrigation (Contreras 2007:63). The lack of irrigation is partly due to the lack of capital available to invert in mechanical means of transporting water. It is also due to the geography of the region, the steep terrain greatly limits access to river water and the streams that flow down into the Rio Mosna are mainly seasonal and contain limited amounts of water. However, irrigation is not necessary in this zone to have a successful harvest. Those farmers that have access to local springs often utilize them to grow green vegetables for market, rather than for grain and tuber production which forms the basis of the local diet.

3.6.1 The Politics of Agriculture:

In one form or another, all of life can be considered political. Agriculture, an activity that would initially appear to solely entail interaction between humans and the environment, is no different. Even in the attempt to procure food from the ground humans must rely on the assistance and council of their neighbors. Although many scholars discount the role of politics and control in more egalitarian societies (i.e. Marxist arguments on the limited nature of control when labor is not abstracted) there are still many anthropologists who would counter that Andean systems exert similar levels of control through extended kinship obligations. The issues of what constitutes a local economy as well how labor is divided in highland societies will be addressed below.

A) Ethnic Economy or a return to the substantivist vs. formalist debate:

Of great interest to social-cultural anthropologists in the 1960s was the issue of whether or not an economy could be based on cultural, rather than monetary structure. Marx and Engels, in a classic revolutionary statement, said that the central revelation of their work was to, “Turn Hegel on his head.” This meant that the Hegelian notion that culture was the basis of society and that economics was simply a reflection of that society actually had to be flipped. For Marx and Engels economics was the base and society/culture were products of that base, they were the superstructure.

This debate was played out in the social science literature in the debate between the substantivists and the formalists. Substantivists argued that the lack of a market economy made a fundamental difference in the construction of society and that the different types of exchange networks that arose to fill these needs are deserving of more study. The work of Karl Polanyi (1957), a substantivist, was crucial to this field. The formalists countered that all societies, whether or not they had markets or capitalist systems, operate on similar terrain based on similar notions of exchange and value. The fundamental economic issues of life are valid across cultures and exchange systems.

Anthropologists of the Andes are tempted to question the formalists’ assumptions. For example, Regina Harrison, while working in Bolivia, found that local villagers did all they could to distance themselves from the cash economy. They maintained and nurtured trade relationships based on kinship, both biological and fictional (note: the debates on what is kinship, and whether or not it is reducible to a biological unit is an entire other debate that it is not possible to address at this point (Schneider 1984).This refusal to commodify their labor prevented them from entering a complete proletarian state. Their lifestyle would seemingly be more aptly described by the Hegellian notion of society as the base and the economy as the superstructure.

The Inka state was a pre-capitalist state (Patterson 1991). While many states existed in pre-capitalist times this one was somewhat unique because the empire seemingly existed without the presence of large marketplaces. The Inka required payment in labor, and in kind (Murra 1962), and in return they were required to feed and give gifts to these laborers. The exact extent of labor commodification is open to debate, for when does a tunic, given as a gift in return for loyal service, become equivalent to a cash payment?

B) Age and Gender Relations

The communal nature of much agricultural work in the Andes is represented in the incredible diversity of organizational forms that exist to maintain access to group labor. Certain practices of farming would simply be impossible if it were not for access to large numbers of workers. Terraced fields on the steep mountain slopes need to have their walls maintained, canals cleared, and soil plowed. The assistance of neighbors and others is crucial to successfully harvest all of the crops before they begin to rot in the fields.

There are a myriad of traditional means to organize/extract labor in the Andes. *Minka* labor is a form of asymmetrical reciprocity whereby a household of lower status provides labor to a household of greater status in return for a share of the produce. *Ayni, waje-waje,* labor is a reciprocal relationship where two different people help each other mutually because each one is lacking what the other has. *Mit'a* labor was a common means of extracting tribute in the Inka empire. The word comes from the Quechua verb *mitay,* to return. The laborer would work on other land for a set period in time, in return the overseer was obliged to feed and clothe the laborer. It is often conceived of as a corvée tax. The use of the verb to return seemingly implies an equal stake in sharing and obligation between the two parties. Recent studies have indicated that these traditional forms of labor pooling are less commonly employed in modern day Chavín than in other regions of the Peruvian Andes (VanValkenburgh 2007).

Linguistic analysis of the Quechua (*Runa simi*) language has shed light on issues of labor and work extraction. Similar analysis can also shed light on gender relations. *Runa simi* does clearly differentiate between men and women. Quechua is a gender-neutral language, which has led some researchers to conclude that the culture is less misogynistic than western culture. In Quechua gender is often conceived of as a complimentary (rather than combative) relationship, neither sex is complete without the other.

3.6.2 Work Geography

Over the course of my archaeological fieldwork and plant collections it became clear that men and women in the communities around Chavín both work in the fields. However, women are more likely to spend at least part of their day at home watching small children. The times when both men and women will spend the majority of their day together in their field are when there are time constraints on the work process.

Planting and harvesting must be completed in a short period of time so everyone is needed in the fields.

When men and women are working in the field together the children are expected to come and be of assistance. This may mean that older children watch smaller children while other children may be helping their parents in the planting and harvesting. During these times the adults are unable to watch the animals so the children may be expected to amplify their role in this activity.

In my experience, outside of the harvest and planting times it is common to see young and old women watching animals and spinning yarn with a spindle whorl. This scene appears to be reminiscent of ancient activities. Spindle whorls are found in excavations in the region. The combination of activities, taking the animals out to pasture and spinning wool into thread, is one classic examples of the ingenuity of portable artifacts. The spindle whorl allows work to be done in the field. It is also quite common to see women knitting in the field although it should be noted that there are many communities where men do the majority of the weaving. I have not seen men knitting in fields although some men will make textiles in their homes.

Men and women begin their work day early and finish when the sun is setting. This early work schedule often means heading out to the fields soon after consuming a light hot breakfast and then returning for a large lunch before returning to the fields again in the afternoon. The work schedule is different during the dry season after the crops have been harvested. At this time there are less pressing demands and many people look for a chance to earn some cash in the wage labor market. This is one of the reasons why so many community members look for a position on our excavation teams during the dry season.

Min'ka or community based *mita* labor is not overtly practiced within the town of Chavín itself, however versions of *corvée* labor are practiced in the communities surrounding the village of Chavín. The organizer of a work project will convince or cajole members of his local community to assist him in the field. In return for his neighbors' labor he will provide them with food, liquor, coca, and possibly cigarettes. The liquor is generally home-made corn *chicha* which may be enhanced with the addition of pure alcohol which is bought in town. At least once a week he is expected to serve a meal with large amounts of meat in it. In recent times a small amount of cash is generally added to the equation and workers may expect to earn 5-10 soles a day on top of receiving food and drink. The most critical aspect to this work relationship is the question of reciprocity and entangled social relationships. If someone agrees to work for their neighbor or cousin they are also obliging that person to work for them at some future point when they are in need of labor assistance.

3.6.3 Demography

The modern town of Chavín is surrounded by several farming communities. While there is significant out migration in the region, many men and some women regularly travel to Huaraz or Lima for work, there are still many children in town. In general, the modern town is stated to have a population of roughly 10,000 inhabitants. The towns can at times appear to be populated by a demographic curve that is heavy on both ends of the spectrum, elderly people and children appear to form the demographic base of the community.

While the modern demography of Chavín is worth noting it is almost certainly substantially different than the demographic profiles of the village in Chavín temple times. The demographic curves of pre-contact populations often are heavily weighted towards the younger age groups (Denevan 1992).

The overt lack of Chavín period burials means that there is almost no direct information to substantiate these claims. This lack of burials is something that continues to confuse researchers. Other highland sites of similar antiquity, such as Kotosh, have revealed substantially more burials than has Chavín.

3.6.4 Models for Past Farming

In Chavín there is very limited evidence for the presence of extensive landscape modifications for the purpose of farming. There is undeniable evidence for massive movements of earth in the construction of the temple and in the maintenance of the riverbanks (Contreras 2007). It appears that the ancient inhabitants of Chavín primarily practiced rain fed agriculture but they also terraced some of the surrounding fields to increase the amount of farmable land. While this form of agriculture did not lead to massive earthworks in the form of altered fields, earth movement of this sort was not necessary for the maintenance of a sustainable agricultural system. As I discussed in this chapter and in the previous chapter these farmers had complex forms of crop rotation and planting practices that kept their fields productive across time. The long term maintenance of fields is a hallmark of a complex subsistence system. This is not to state that farmers from Chavín did not travel to other zones, outside of the Quechua, to farm plants and raise animals that could not thrive in their zone. Rather, they were likely engaged in practices that extended their agricultural reach but it appears that their local rain fed agriculture was sufficient to provide the majority of the calories that they consumed.

3.7 Concluding Thoughts on Andean Space and Place

This chapter has presented ecological theories as well as descriptions of Andean space and place. The ecological theory frames the analysis of past agricultural and animal husbandry systems. The discussion of Andean space and place was necessary to discuss what makes the community of La Banda distinct as well as similar to other highland communities.

The following chapter continues to present background information on the Andes but it transitions away from an analysis of space and place and begins to discuss time and the history of Andean archaeology. This contextual analysis of coastal, highland, and eastern lowland sites should be clear now that the ecological and spatial setting has been presented.

Chapter 4: Chavín in Context

This chapter covers two major themes, culture history and plant use. I will initially discuss timeframes used in the Andes and then I will discuss plant use in the region over time. The specific dating of the temple of Chavín will be analyzed in greater detail in the following chapter.

4.1 Culture History and Time

The meta-narratives of pre-contact history constructed by Andean archaeologists often cover enormous geographical distances. In many instances entire stretches of Argentina, Bolivia, Chile, Ecuador, and Peru are included in the descriptive narrative. While the Andes were one of the five regions of the world that undoubtedly gave rise to pristine states (Burger 1995; Moseley 2001; Stanish 2001) many of the meta-narratives of the Andes are profoundly influenced by what we know about the Inka State. The Inkas conquered communities in all the above listed countries (Rowe 1944) and that territorial expanse is now reflected into the past when analyzing pre-Inka civilizations.

My discussion of Chavín's history will refer to several chronologies (Tables 4.1-4.5) but I will focus on one listed in Table 4.1, as these are the more relevant for this specific Andean region. This table documents chronologies with particular importance to Peru. However, it does appear that materials at Chavín may have come from other Andean regions, such as sea shells that are discussed in Chapter 8. The Kaulicke (1998) chronology uses similar terminology, that emphasize the Formative, somewhat resonating with that currently deployed in Bolivia (Hastorf 2005). The use of the phase Formative is becoming more common across the Andes, but as will be discussed below, the use of terms with such evolutionary meaning comes with embedded assumptions about the social cultural evolutionary stage and lives of the people of that time period that makes some archaeologists uncomfortable.

Table 4.1: Two Andean Chronologies commonly used in Peru

Time Scale	Kaulicke (1998)	Rowe (1967)
~3000- ~2100 B.C.	Arcaico Final (1800-1500 BC)	Preceramic (3000-2100 B.C.)
~2000- ~1500 B.C.	Formativo Temprano (1500-1000 B.C.)	Initial Period (2100-1400 B.C.)
~1500- ~500 B.C.	Formativo Medio (1000-600 B.C.)	Early Horizon (1400-400 B.C.)
~500- ~200 B.C.	Formativo Tardío (600-400 B.C.)	Early Intermediate Period (400 B.C.- A.D. 550)
	Formativo Final (400-200 B.C.)	Middle Horizon (A.D. 550 – 900)
	Formativo Final (400-200 B.C.)	Late Initial Period (A.D. 900-1476)
	Epiformativo (200 B.C.-100/200 AD)	Late Horizon (A.D. 1476-1532)

North American Archaeologists generally refer to the Rowe terms, so that terminology will appear throughout my dissertation. The two chronologies presented above use different dates because the Kaulicke text was written later in time when many more radiocarbon dates were published. The next chapter contains the specific chronologies for the site of Chavín de Huántar and those phases will be referred to in different chapters.

The following sections discuss the theoretical backgrounds and positions of archaeologists who have worked at Chavín. In the following discussion I attempt to illuminate the works that inspired and informed different theorists concerning the growth and development of Chavín the ceremonial center and its Formative culture.

4.1.1 Time Periods of Andean Archaeology: or the tyranny of pottery:

In the Andes there is a tendency to define time periods based on ceramic stylistic change. The central chronology cited by North Americans working in the Andes was first organized by John Rowe in the 1960s.

He begins by defining stages:

> Complex stages are stages defined on the basis of several different features which are supposed to occur together. If, for example, we note a frequent correlation of pottery with evidence for farming, animal husbandry, and loom weaving in the area we are studying, we may be tempted to use all four of these features together as criteria for a single cultural stage (Rowe 1967:2).

While this is a useful guide into how a variety of criteria can be employed to describe the past, as we will see, the inclusion of cultural forms other than ceramics, has rarely been undertaken in the Andes.

> The inherent weaknesses of the method of using complex stages as a framework for interpretation appear only much later when the relative chronology can be made more precise and other local sequences are established. Unfortunately, by this time everyone is accustomed to thinking in terms of the traditional stages, and it is very difficult to give them up and start afresh with a more productive system (Rowe 1967: 3).

Here we see another profound foresight, as it has become tremendously difficult to convince scholars that millions of square kilometers cannot be defined by the ceramics encountered in a single river valley.

> The use of a master sequence to control a system of periods can be illustrated from Peruvian data. In applying the idea to Peru I chose the Ica Valley as the most convenient point of reference, because we had made the best start toward the establishing a detailed chronology of the pottery styles of the valley. We could then say that the Initial Period begins at the time of the introduction of pottery in Ica. The Early Horizon is the tome from the first appearance of Chavín influence

> at Ica until polychrome slip painting replaces resin painting in that valley. The Middle Horizon is the time from the beginning of Phase 9 of the Nasca style at Ica to the beginning of Phase A of the Chupalca style. The Late Horizon is the period from the beginning of Phase A of the Tacaraca style at Ica until the beginning of Phase B of the same style. Since we believe that the beginning of Tacaraca A style coincided in time with the beginning of the Inka occupation of the Ica valley, we assign the traditional date of the Inka conquest of those areas, about 1476 AD, to the beginning of the Late Horizon (Rowe 1967:10).

This quote lays out the exact basis for the timeframes used in the Andes. While the language is technical and seemingly precise, later analysis will reveal that this precision masked issues that specialists vigorously debate. The use of Phases and styles sounds precise but ceramic chronologies are constantly being modified.

> The negative advantage of using periods rather than stages to organize archaeological data is that the investigator runs much less danger of assuming what he out to be trying to prove. Because of the close association of stages with the theory of cultural evolution, virtually every archaeologist who uses stages to organize his data thereby builds into them certain assumptions about cultural development without being aware that he is doing so (Rowe 1967: 12).

This critique of circular reasoning is a salient reminder that not only stages can become self reinforcing. The same can be true of periods and this issue will be discussed as regards to the Early Horizon Period in the Andes.

4.1.2 The Early Horizon also known as the Chavín Horizon

The Chavín Horizon is defined by its distinct surreal iconography, the Lanzón sculpture, agnathic teeth, pendant eye, and the Janabarriu ceramic style. The staff god and some of the core Chavín imagery may appear earlier at other sites west and south of Chavín, suggesting that this site is more of a culmination of this phase than the instigator of it (Shady Solis and Leyva 2003). As Burger (1985) and Williams Leon (1985) have noted, there were clear antecedents, such as Cardal and Garagay, on the coast for many of the architectural forms constructed at Chavín.

There are many problems with using the term Horizon to describe this time when its type site is not considered to be a state or the sole major center at that point in time by most archaeologists (Stanish 2001). It is partially for this reason that I will use Kaulicke's chronology throughout this chapter, Table 4.1. While the issue of whether or not the term Early Horizon should continue to be employed will not be resolved here, it is worth noting the problematic history of this term as well as the work done at the site by a broad array of archaeologists.

4.1.3 Chavín's sui generis

The original vision of Chavín, seen by early visitors, was that of an enormous castle. While the townspeople were not clear on who built the site, some said that it was built by the Inka (Mesia 2007: 3). These vague statements on Chavín's origins, as well as the impressions of early colonial visitors, formed the foundation on top of which later work would be established. The post-conquest history of archaeological work at the site is well known (Contreras 2007:14; Mesia 2007:1-14).

Chavín is generally granted its own unique place in Andean history. While many other important archaeological sites are clearly associated with armies and militaristic functions Chavín is considered to be a site of ritual pilgrimage. Pachacamac is a later pilgrimage site to which Chavín is compared. While there were many other pilgrimage sites in the Andes another one of particular importance was the Isla del sol (Bauer and Stanish 2001) and archaeology conducted at the site also made clear that it is difficult to find material evidence of liminal activities (Moore 2003).

4.1.4 Janabarriu Phase

As discussed above the timeframe of the Chavín is still being debated. If this is the case then we need to consider referring specifically to the site chronology rather than pan-Andean chronology. The Janabarriu phase, as the following sections illustrate, is at the center of the debate surrounding Chavín's iconography and chronology.

Burger first defined the Janabarriu ceramic style (1984); here I utilize that definition, with its emphasis on polished red and black wares and, "the frequency of designs made by stamps and seals. Circles, circle-dots, S's, and other stylized designs...are impressed in rows on the exteriors of bowls, cooking pots, plates, and cups." (Burger 1995:170) While this definition is broad, it is useful and can be used to describe a wide variety of ceramic types found in the Andes at sites outside of the Callejón de Conchucos, the valley where Chavín de Huántar is located. I will discuss this style's relationship to chronology in the next chapter.

The Janabarriu phase was associated with Rowe's New Temple architectural phase. The exact linkage of a ceramic style with an architectural phase may have been an interesting chronological find but as will be discussed below there is reason to believe that the ceramic style may have had a longer lifespan than that initially proposed of 390-200 B.C., therefore canceling the light contemporaneity with the architecture. Therefore when I refer to Janabarriu in my own work I am referring to a ceramic style not the dates discussed above.

4.1.5 Black and White Phase

The Black and White Phase is a major construction phase of the ceremonial core of the site (Figure 2.1) that lasted from approximately 1000-550 BC (Rick 2008:11). During this phase all or portions of galleries in Buildings A and B, as well as in the East Area, were constructed (Kembel 2008:44). "In the final monumental stage, the Black and White Stage, site-wide additions, including plazas, terraces, and open staircases, are built with high levels of symmetry, decorated fine stonework, and standardized galleries (Kembel 2008:45)." This time is when Chavín is at its peak. This change in the spatial layout of the site reflects an increasing importance in controlling how visitors experienced the temple.

One useful attribute to the phasing is that it does not postulate a necessary one to one correlation between ceramic styles and building construction phases. Additionally, this timeframe covers the entire occupation of the section of La Banda that was excavated in my 2005 excavations. This is the most useful term to describe Chavín at the height of its ceremonial use and I will refer to it when discussing activities in the main temple.

4.2 Paleoethnobotany across time

The last chapter discussed ecological theory and the Andean environment. The first section of this chapter presented timeframes used in the Andes. This section is also background to my own research and will move into a more particular discussion of the history of paleoethnobotany in the Andean region. This portion of the chapter will focus on research conducted in the Central Andean region but will include some sites outside of this region.

This discussion of botanical materials recovered from archaeological contexts will be limited in nature, as in-depth discussion of all the sites that have employed paleoethnobotanical analysis is not possible in this dissertation. In particular I will focus on the early botanical data that documents the arrival or local domestication of crop plants in the region.

Jack Harlan (1992) stated that South America was a non-center of domestication. There were many plants domesticated[7] on the continent, however, there did not appear to be one region of concentrated domestication. While recent research has shown that there were concentrated areas where many neotropical plants were domesticated (Piperno and Pearsall 1998). People across the continent clearly experimented with plants in variety of ways; they employed local practices learned from caring for "wild" plant communities to shelter and "domesticate" particularly useful crops. One region of the continent where uptake as practice (Hastorf 1999) is clearly useful is the coast of Peru (Figure 3.1).

[7] Here for the sake of brevity I will paraphrase Harlan (1992)'s definition of a domesticate crop as: a plant that has been phenotypically and morphologically changed in such a fashion that it is dependent upon humans for its reproduction. Although many South American domesticates may not fit completely in to this definition, such as tarwi, it is still crucial to note that the term can be precisely delimited.

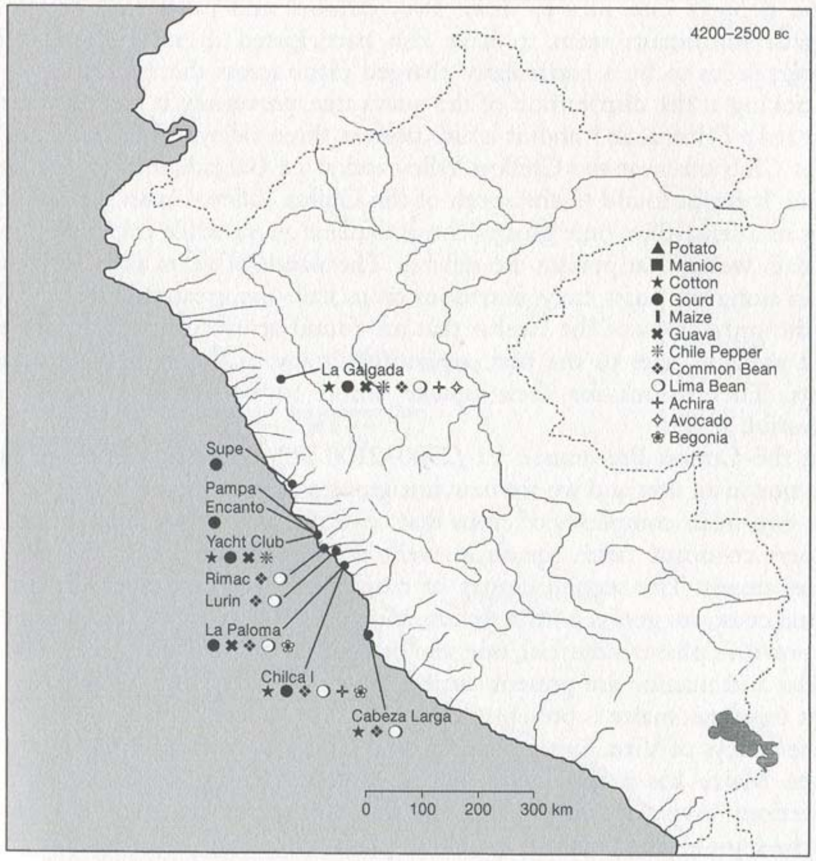

Figure 4.1: Map of Peru and Andean Region with some sites mentioned (Hastorf 1999:47).

Recent genetic and archaeological work has proven that many of the crops important on the coast have jungle or highland origins (i.e. manioc, peanuts, potatoes, beans). It is clear that these peoples were interacting with peoples from different regions of ancient South America. Hastorf's work (1999; 2003) on coastal paleoethnobotany presents compelling versions of the practice of horticulture and agricultural history on the coast. Her thesis presents the possible pathways for these plants to be taken up along the dry coast, and illustrates that it is useful to consider social identity as well as nutritional reasons as to why and when people adopted certain plants into their lived space.

4.2.1 Western Coast

Most of the plants used by the pre-Colombian coastal peoples of modern day Ecuador and Peru were not native to the region. As such, the exact arrival of these plants to their respective coasts has caused considerable debate (Piperno and Pearsall 1998). The timing of the arrival of maize into Western South America has been heated but more data from recent work appears to be clarifying this issue (Staller, Tykot et al. 2006). Before examining these practices along the coast of Peru it is first necessary to discuss sites from Chile and the coast of Ecuador.

Monte Verde is one of the oldest sites of acknowledged antiquity in South America to contain well preserved plant material (Dillehay 1989; Dillehay, Ramirez et al. 2008). It contained well preserved macrobotanical remains due to the wet conditions of the surrounding peat. The oldest, ~14,600 BP, archaeologically known tubers in South America were found at this site, but it was a wild species (*Solanum maglia*). The plant remains present were all wild plants but the early use of tubers may be indicative of the long term domestication processes and human intent to transform these plants. The other plants present at the site were important sources of calories and vitamins. There were seven genera of seaweed present at the site (Dillehay et. al 2008:785) and they may have been used for food, medicine, and tool use.

Much of the data about the arrival of maize into Ecuador is derived from phytolith evidence. There is not macrofossil evidence for the arrival of maize until 1200-800BC uncalibrated (Pearsall 2004:424). But, the neotropical climate of the Santa Elena Peninsula in Ecuador is a limiting factor on the preservation of macroremains. For this reason Deborah Pearsall (1978) developed a technique to identify archaeological phytoliths of maize at the site of Real Alto, 5500-3500 B.P. Recent work (Iriarte 2003) has independently confirmed the validity of the Piperno and Pearsall technique of identifying maize through the analysis of cross-shape (a form particularly common in Panicoid grasses) size and shape. Additionally, the phytolith data from Real Alto (Pearsall 2004) has stood the test of time and it now appears that maize was commonly grown and processed with stone tools at the site by 2800-2400 B.C. calibrated.

Some of the strongest evidence for the early use of domesticated plants in Ecuador has been the recovery of *Canavalia* beans from the site of Real Alto (Damp, Pearsall et al. 1981). These beans were dated to the earliest layers of the Valdivia civilization, 3300 B.C. (Damp et al. 1981:811). *Canna edulis* is also present at the site; this plant was most likely introduced to the area in domesticated form (Damp, et al. 1981:812). The preservation of the beans stands out in contrast to the lack of preservation of maize macrobotanicals.

The Vegas site, OGSE 80, on the Santa Elena Peninsula of Ecuador, has revealed the earliest presence of squashes in South America (Piperno, Andres et al. 2000). There are numerous *Cucurbita* phytoliths from the late Pleistocene layers, at the latest 7000 B.P., of the site (Piperno, et al. 2000: 201). These phytoliths overlap in size with modern Cucurbits. Additionally, similar phytoliths have been recovered from the Aguadulce rock shelter in Panama (Piperno, et al. 2000:207). It is likely that more than one species of squashes was domesticated in the lowland Neotropics by 9000 B.P. (Piperno and Pearsall 1998).

The documented use of beans, maize, and squash in early sites in Northern South America is of interest because it has been postulated that these crops were not grown as an important polycrop (including more than one crop species in a field) in Mesoamerica until AD 500 (Lentz 2000:111). Although the early presence of these crops at sites in Western South America does not mean that they were necessarily grown in a multicropped system from the outset, it is interesting to note that they exist together and that each crop provides notable benefits to the others (i.e. the capacity of microbacteria associated with bean root nodules to fix nitrogen in the soil).

The practice of paleoethnobotany on the coast Peru is significantly different than in Ecuador or southern Chile. The dry desert conditions permit researchers to rely to a greater extent on macroremains. Thus, little phytolith or pollen analysis (an exception being Quilter, E et al. 1991) has been conducted on the soils recovered from archaeological excavations.

The Zaña site excavated by Dillehay and Rossen initially provided interesting plant use data but the site was the object of debate due to some divergent AMS dates (Rossen, Dillehay et al. 1996). Plant remains were recovered from the Middle Pre-ceramic Period (7200-5600BC) residential sites. Squash, peanuts, quinoa, manioc, plum, and cactus fruit were recovered in the excavations. The context of the material appears to be strongly correlated to these time periods (wood from the excavated area returned the old dates) but AMS dating of the botanical remains returned almost modern dates for the domesticated materials. Later work at sites in the valley confirmed that the inhabitants of this region were some of the first known consumers of peanuts, cotton, and squash (Piperno and Dillehay 2008) between 9200 and 5500 B.P. This later study directly analyzed starch grains embedded in dental remains and thus provided direct evidence of a diverse ancient diet that provided a baseline for later dietary practices.

A major theoretical debate ensued with the publication of Moseley's *Maritime Foundations of Andean Civilization* (1975) which argued that early inhabitants of coastal Peru looked toward the sea, rather than the land, for the majority of their calories and protein. Moseley argued that it was entirely possible to have large "ceremonial" structures built by societies that did not have agriculture economy (Moseley 1975:1). His attempt to study a civilization in its own terms was refreshing in its conception and also in its departure from previous emphases on the webs of diffusion that characterized some earlier studies of the spread of civilization (Childe 1956).

Moseley's book prompted a backlash (Raymond 1981; Wilson 1981) by archaeologists who argued that it was impossible to build "complex society" without the carbohydrate base that maize would provide. However, in more recent formulations of the hypothesis Moseley and Sandweiss (1998) have argued that marine resources may have provided the protein basis for these societies but that the ancient residents of the coast would have supplemented their diets with plant resources. In hindsight it is clear that local people could not have solely survived on marine resources, and that much of the botanical data may have been neglected due to insufficient recovery methods, but that it would have been possible to use the richest fishery of the Americas as a significant basis of nutritional support.

The Caral site was occupied from at least 2627 to 2020 cal BC, has become a point of contention in the archaeological literature of the coast (Shady Solis and Leyva 2003). Its large size and seemingly monumental/ ceremonial construction lead archaeologists to affirm, and question at the same time, Moseley's theory that monumental societies could have arisen without [sophisticated] agriculture. Recent research has demonstrated that people at the site were most likely practicing irrigated farming (unlike at El Paraiso) by 4090 B.P, 2627 cal B.C.

> Ethnobotanical remains recovered from the site confirm the inference of irrigation-based agriculture. Domesticated plants recovered include squash (*Cucurbita* sp.), beans (*Phaseolus vulgaris*), lucuma (*Lucuma obovata*), guava (*Psidium guajava*), pacay (*Inga feuillei*), camote (*Ipomoea batatas*), and cotton (*Gossypium barbadense*), among others (Shady 1997; Shady et al. 1999a; Shady

> et al. 1999b; Shady et al. 2000). Corn (*Zea mays*) is absent. Animal remains are almost exclusively marine, including quantities of clams (*Mesodesma donacium*) and mussels (*Choromytilus chorus* and *Aulacomya ater*) and an abundance of anchovies (*Engraulis ringens*) and sardines (*Sardinops sagax*). The subsistence economy at Caral was thus a mix of plants grown in irrigated fields within the Supe Valley and marine resources from the Pacific Ocean, 23 km to the west (Shady Solis, Haas et al. 2001:725)

These finds at Caral are not out of the ordinary if the location of the site is given further consideration. The site is located well off of the coast, near rivers and irrigable sites and it is clear from the excavations that this site does not represent a complete "shift" to agriculture (Shady and Leyva 2003). However these people are still mediating their risks by including substantial portions of seafood in their diet. There are other sites nearby Caral which were also engaged in these early farming practices (Haas, Creamer et al. 2004).

Chilca I (Weir, Benfer et al. 1988) and Huaca Prieta (Bird 1985), 2900-1100 cal BC, are two other important preceramic coastal sites. These two sites contained many vegetal remains in addition to the enormous quantities of well-preserved marine products (Bird 1985). The vegetal products include beans, squash, achira, chiles, fruits, jícama, achira, and caygua. Chilca is located near a floodplain so this may help explain the greater quantities of farmed vegetal material. There are few specifics on the preceramic occupation of the site, although it may have been closer to the sea at the time of occupation. Junius Bird in his earliest excavations of Huaca Prieta in the 1950s made the observation that much of the site appeared to be preceramic, with a *lomas* (coastal plant communities supported by cloud moisture) plant focus, but that this did not preclude the existence of domesticated plants. Later they came to support the hypothesis that maize was not grown in preceramic Peru (Bird and Bird 1980).

Much research on the coast initially focused on the potential productivity of the *lomas* (Patterson 1971; Engel 1973; Quilter and Stocker 1983). Although the *lomas* were mentioned in these studies as having been crucial sources of resources during sub-optimal times their importance is generally dismissed when the discussion turns towards later times when maize and other crops were present on the coast. I would suggest that these sites deserve further consideration, for it can be shown that the *lomas* supported a wide range of crops, everything from fruit trees to rhizome bearing flowers, to tubers (Engel 1973:271). Intense experience and contact with these plants, and the care that the local people surely took to preserve their production for the next season, can be viewed as a potential "training ground" for full-scale agriculture. As such, it is crucial that we not consider agriculture as an activity completely divorced from the plant gathering activities that preceded it; rather, we must consider agriculture to be an extension of experience- an increase in time applied to the caring taking of specific plants but not an entirely new skill that would completely alter all social activity.

The site of La Paloma (Quilter and Stocker 1983) revealed a diet based on marine products augmented with vegetative products from the *lomas*. Additionally, there were small amounts of beans, squash, gourds, and guavas found in the site. The botanical data appears to have been recorded in a presence/absence method, making sophisticated statements about the subsistence strategies of the region difficult to confirm. The plants were most likely grown in depressed areas (commonly referred to as *pukllos*, which means spring in Quechua) surrounding the site where there was access to underground water. *Pukllos* could also have been sources of water for growing cotton and other important industrial crops. The human coprolites recovered at the site confirmed many of the original hypotheses about the importance of fish and shellfish in the diet.

At El Paraíso (1800-1500 BC) researchers systematically collected botanical data and this lead to more robust interpretations. The analysis of these coastal data by Deborah Pearsall revealed that the site contained a wide variety of plants, both domesticates and non-domesticates (Quilter, et al. 1991:280). Additionally, members of the *Cucurbita*, *Solanum*, and *Physalis* genera were recovered in human coprolites. The coprolites revealed that a substantial portion of the diet was based on marine resources, but that at other points in time botanical and terrestrial resources may have been the chief components of the diet (Quilter, et al. 1991:280). The most dominant domesticate at the site was cotton. This find was not surprising considering the ubiquitous role that cotton played in society, particularly in fishing societies where nets were crucial for the capture of marine resources (Quilter, et al. 1991:282). The final conclusion of the research was that subsistence was a mix of domesticated and non-domesticated items, additionally, it was found that the site did not contain resources from distant areas mitigating the possibility that the site was administering or gathering tribute from other sites (Quilter, et al. 1991:281).

The Japanese Project at Kotosh was the first project to systematically analyze phytoliths (Matsulani 1972) and this work inspired other projects to begin microbotanical analysis. Some of the first sites to be analyzed for starch grains were on the Peruvian coast (Ugent, Pozorski et al. 1982). The sites in the Casma were notable for the finds of manioc cultivation on the coast. Although this crop cannot grow at high elevation it was a staple of many lowland groups and societies living in the Amazon and on the coast (Perry 2002).

4.2.2 Highland Paleoethnobotany in the Andes:

The other center of domestication (Harlan 1992) in the Andean region was the highland zones. The Andean mountains provide many distinct climatic and altitudinal environments in which to experiment with plants. A problem with much of the research on early plant use in the highlands has been faulty dating (Rick 1987). The specifics of these problems will be discussed within the context of the specific sites. Also, the Zaña sites where discussed in the previous section even though some of them extend up beyond the coastal region.

Guitarrero Cave in the Callejón de Huaylas initially revealed the oldest cultivated plants in the Americas (date 9500-8700 BC)). Most of the botanical remains recovered from the site (Smith 1980) were wild, along with the animals. These dates are contentious and it would be valuable to have additional excavations in other highland central Andean sites to clarify this debate. Some work on early highland agriculture and maize cultivation was conducted in southern Peru (Perry et. al 2006)

The Ayacucho area caves have long occupied a central place in the literature of origins of agriculture in the Andes. MacNeish's monographs (MacNeish, Vierra et al. 1980) of these excavations offer few details about the actual botanical remains. There are no images of the samples and the results are briefly presented. The oldest layers (6600-5300 cal B.C.) contained gourds, squash, and quinoa. The later levels contain beans, potato, squash, quinoa, coca, achira, cotton, and chiles. Without re-analysis of these materials and control for contamination, and direct dating of the plants, it is difficult to place these remains in any absolute sequence.

One of the most thoroughly analyzed early highland sites is Pachamachay, near Lake Junin. Deborah Pearsall analyzed the botanical remains in conjunction with John Rick's project (Rick 1980). This was one of the first projects in the highlands to employ systematic sampling and analysis of flotation samples. These samples revealed a paucity of domesticated vegetable remains although in the later phases *Lepidium peruvianum* and *Chenopdium quinoa*, most likely in domesticated form, appear. In fact, it can be argued that most of the botanical material at the site came from dung or other animal activities. The problems and limitations of botanical analysis in the highlands are well addressed in this volume. The results of this analysis were that the majority of the plants found in the site were non-domesticates and many could have been seasonally collected (Rick 1980). It appears that much of the botanical material entered the sites via dung, or were associated with the activities of animals.

In the Titicaca Basin there have been substantive studies of the macrobotanical and microbotanical remains of early farming communities (Logan 2006; Whitehead 2007; Bruno 2008). These studies show that in Formative times in Bolivia quinoa and other highland crops were well incorporated into the diet.

The highland site of Chavín de Huántar has enjoyed a preeminent status in highland research in Peru since the 1920s (Tello 1922). The research projects conducted at the site over the years have not included a systematic botanical component, even though the site is postulated to have served as a center for ritual induction in to cults through the use of hallucinogens (Lathrap 1973; Lumbreras 1989; Burger 1995; Torres 2008; Sayre in preparation). Additionally the spread of the "Chavín cult" has served as a backdrop in the debates surrounding the dispersal of maize in Peru (Bird and Bird 1980; Katz 1969, cited in Burger and Van der Merwe 1990)). Isotope analysis conducted on human skeletal remains from the site revealed that maize was present in the region by (Burger and Van der Merwe 1990:85) 850 B.C. This research seemingly disproved Katz's (1972) concept of the preeminent role of maize at the site. The isotopic data supports the idea that maize was a small component of the subsistence base but other crops such as quinoa and tubers made up a more substantial portion of the diet (Burger and Van der Merwe 1990:92). However, the statement that preservation of macrobotanical remains (Burger and Van der Merwe 1990:87) at the site was too poor to study, i.e. not worth collecting, has not been borne out by my research on macrobotanical remains from the site, as well be seen in the upcoming chapters.

While there has been substantial work completed on later sites one of the most interesting studies was that of the Jauja community in the upper Mantaro valley (Hastorf 1993). This community was forced to move from high elevation sites down to the Quechua zone in the Late Horizon by the Inka in order to cultivate more maize. This level of control over a group's livelihood and food choices has rarely been seen in other archaeobotanical studies.

4.2.3 Concluding thoughts on Andean Paleoethnobotany:

The paleoethnobotanical data clearly demonstrate that a uni-linear model for the "origins" or spread of agriculture into Western South America is not applicable. The remarkable variety of practices over short geographical distances are emblematic of the diversity that exists in the region to this day (Brush 1977; Sayre 2007). People in the pre-ceramic past chose to accept or include domesticated crops in their daily life at different times. It is clear that society did not radically change the minute maize and other domesticates appeared on the coast. Rather people slowly chose to incorporate these plants in differing quantities of millennia (Hastorf 1999). Initially they most likely treated them as they had treated the wild plants that they interacted with and cared for everyday. Then slowly these plants were accepted to the point that they became the backbone of the local economies. The time period after this transition is the focus of my dissertation research. The immense changes that occurred throughout the region at that point in time most likely have their base in the changing relationship with the landscape that occurred after people became fully committed to agriculture.

4.3 Concluding Thoughts on Timeframes and Plants

This chapter presented the timeframes typically employed in Andean Archaeology and addressed some profound problems with these chronologies, in particular the term Early Horizon. While it is useful to have broad terms to describe interactions across a particular time and place this timeframe has many inconsistencies. For this reason I will present specific chronologies for the site of Chavín, the type site for the Early Horizon, in the next chapter. In my own work I will employ chronological terms created particularly for the site of Chavín.

The second half of the chapter presented paleoethnobotanical work across the Andes. This work was presented after the ecological, spatial, and chronological foundations of the region were described. The paleoethnobotanical work shows that the region experienced many advances in ancient agricultural practices and that by the time the site of Chavín rose to prominence there were already well established suits of crops being cultivated and harvested by Andean peoples.

Chapter 5: Ritual at Chavín

5.1 Ritual

"In ritual, the world as lived and the world as imagined, fused under the agency of a single set of symbolic forms, turns out to be the same world. (Geertz 1973:112))"

I will use the theoretical framework discussed by Catherine Bell (1992; 1997), in which ritual is not considered to be a special paradigmatic act but rather considered part of the broader array of social activity (Bell 1992:7). In this instance, 'ritualization' as a form of practice theory can reveal strategic acting and determine how this acting is different than that in other aspects of life. This separation of ritual from the realm of isolated special activities is an important distinction and is a theme I will return to in chapter 9 when discussing the intersection between the ritual and domestic realm.

While analyzing ritual as a part of general social activity it is also important to acknowledge the formal aspects of ritual that can make this a special activity. One of those features is liturgy and other relevant codified knowledge which inform the practice of rites. This informs practice and the codified knowledge itself would be transformed and revalued as rites were enacted and performed. Liturgy and other forms of formal discourse are aspects of some religions that I will return to and discuss later in this chapter when discussing Moore's ideas, as well as my own conceptions, of how rituals played out at the site.

The repetitive nature of liturgy establishes it as a form of structure. While this "textualization" may refer to formal writings in some instances the stock of images and mnemonics are not written texts (Hastorf 2008). In some instances this formalized knowledge was depicted in iconography and graphic representations. In this chapter I will address such visual images and analyze how they may depict individual rites as well as established norms for religious practice.

Ritual as a social strategy of differentiation is salient at a site with such distinctive iconography and architecture. As Burger (1995:128) noted, "Although Chavín de Huántar was by no means the largest of these late initial Period centers, I believe that it was probably the most beautiful and almost certainly the most unusual." The site's elaborate architecture is part of the attraction and beauty that archaeologists note when working at the site but so is the elaborate and detailed iconographic tradition portrayed on stone sculpture, ceramics, bone, and other artifacts. The uniqueness of the temple area underlies much of the fascination that the site of Chavín holds for archaeologists but as my excavation and analysis chapters should make clear I am also interested in the lives of people outside the monumental center. Daily life has not been a major component of ritual analysis proposed for the site but it is a necessary aspect of my work that I will begin to address at the end of this chapter.

What follows in this chapter is a synthesis of prominent archaeologists' impressions of ritual activities that occurred at Chavín. There are clear influences from Durkheim (1912) and Marx (1843) on some of the theories, such as the theory of ritual discussed by Burger, and the convincing system described by Rick (2005). This does not mean that these were the only philosophers to impact archaeological theory. Jerry Moore

(2005) can be considered more of an adherent to the works of Bell and her practice theory (experiential) centered approach to ritual (Bell 1992).

5.1.1 Durkheim, Marx, and the Impact of Theory

The archaeologists discussed in this chapter provide theories on religious practice based solely on their interpretations of the material past. But this is rarely the case and generally archaeologists have made it clear when they owe an intellectual debt to a particular thinker. Much of the discussion about Chavín and its rituals can be broadly classified as a debate between Durkheimian thought and Marxist thought about religion.

Durkheim (1912) famously described God as society writ large. He was a French sociologist who lived and worked around the turn of the 19^{th} century. His friendship with Marcel Mauss increased his exposure to anthropological thought and writings on non-western cultures further enhanced his writings on social solidarity. His writings on religion are deeply connected to his studies of capitalism but they are useful for theorists studying pre-capitalist society because he principally regarded capitalism as a threat to traditional society, and as such expended a great deal of effort exploring the role of religion in promoting social cohesion. In the end he viewed religion as serving four major purposes: it is disciplinary, cohesive, and can lead to vitalizing and euphoric experiences for practitioners.

Marx initially had a view of religion that was similar to that of Durkheim but his sense of its purpose in promoting social cohesion lessened over time. In later thought Marx (1843:32) would famously state, “Religious suffering is, at one and the same time, the expression of real suffering and protest against real suffering. Religion is the sigh of the oppressed creature, the heart of a heartless world, and the soul of soulless conditions. It is the opium of the people.” This view of religion as an opiate leads to the natural conclusion that priests and other canonical practitioners were similar to drug dealers and thus were profiting off of the ignorance and obsessions of their followers. In Marxist thought religious followers are sufferers who have not been enlightened. The concept that religion is a tool used to exploit others for one’s own gain is certainly prominent in the writing of numerous theorists.

5.1.2 Tello and Initial Work

Julio C. Tello first visited the site of Chavín in 1919 as part of his larger survey of the Marañon river (Tello 1943). Tello was conducting surveys of the highland region and searching for evidence for the independent development of Andean civilization, something that he intuitively believed to have begun in the highland region of Peru (Tello 1943). Chavín fell into the preconceived notions of what an early megalithic center should look like. The physical monumentality of Chavín was such clear evidence of elaborate planning that it could easily refute foreign archaeologists, such as Max Uhle (1902), who believed that Andean civilization descended from Mesoamerican civilization.

The formal re-discovery of the temple did not initially lead to extensive excavations rather the first visits to the temple were devoted to cleaning and mapping. After the site was cleared a long parade of archaeologists would begin to excavate and analyze the site. Little of this early work challenged the assumption that Chavín was the primordial site of Andean civilization. In recent years (Shady Solis 2005) this view has been debunked but modern day Andean archaeologists are often times just as concerned with finding the oldest cities or cultures in the region. If there is a lesson to this story it may be that there will always be another site or settlement to be found that challenges our chronological and cultural assumptions of the "evolution of society".

While most Andean scholars are familiar with the claims and writings of Julio C. Tello many archaeologists are not familiar with the literature that informed his intellectual writings. His pronouncements on early ritual and the basis of Chavín have been repeated time and again and yet returning to his own writings it is clear that much of his writings were intuitive formulations necessarily derived from the writings of theologians, philosophers, and chroniclers.

The early chroniclers wrote their texts in an age where divine influence on the material world was assumed. Much of Guaman Poma's texts and drawings depict sacred images and try to correlate Inkan rites with Christian themes. While modern scholars may gloss over this relationship and attempt to use his work without any mention of Tello's religious education, he lived at a time and place where religious thought still pervaded much of the social sciences. His capacity to discuss Andean cultures in their own terms is notable but his work is still profoundly informed by the concept of chief divinities and priests motivated by heavenly concerns. His upbringing in the Catholic Church, a background shared by many Peruvians as well as myself; as well as his knowledge of Andean ethnography undoubtedly impacted his vision of gender and ritual roles in Chavín times.

Tello's work contained profound insights and many archaeologists continue to follow his thoughts on the nature and timing of Chavín. One of his most important contributions was his idea that the site functioned as a ritual center. This claim is now part of common wisdom most likely because the archaeologists have found no irrefutable evidence to contradict it or determine its correctness. Additionally, there is little evidence to support claims of military rule or extensive control over other sites outside of the Callejón de Conchucos.

5.1.3 Rowe on Ritual

John Rowe initially entered the field of Andean archaeology after spending years studying the Roman Empire and the classical Mediterranean world. This was a useful foundation for a scholar who would spend most of his career working and studying the ancient history of the ancient Inka capital of Cuzco. It also provided him with useful analogies and a means of classifying and defining the Inka civilization without falling into the demeaning terms of savage empires or oriental despotism.

Most North American students become aware of the site of Chavín through the work of Richard Burger, who was profoundly influenced by Rowe and his chronology of the site. This depiction is often taken to be the definitive account of its construction. Rowe's chronology divided the site into three major construction events that would later be connected to the ceramic styles encountered in later excavations. Rowe's construction of the site chronology was influenced by his conversations with the site conservator Marino Gonzales, a man who spent decades cleaning and repairing the site. Although he was not formally trained as an architect his years of experience at the site led him to form his own theories on the construction of the site. Rowe used much of this knowledge not only to construct his vision of the site's chronology, construction of the Old and new Temple, but also to form a chronology for the lithic art of the site, Phases AB, C, D, EF (Rowe 1962). The most overt problem with Rowe's lithic art chronology is that many of the pieces were not found in situ and there is no means of directly dating these pieces.

5.1.4 Lumbreras on Ritual

The work of Luis Lumbreras marked a tremendous shift in theoretical and methodological practice. Lumbreras' training in Marxist thought and literature, as well his involvement in the political movements of the 1960s in Latin America, helped form a thinker with a vastly different perspective than that of earlier theorists. His philosophical basis in political thought was not focused on the classical or naturalistic world rather it was training in class struggle and revolution that firmly placed archaeology within the social sciences (Lumbreras 1974; 1984).

Lumbreras followed early travelers and townspeople conception that Chavín received its name from the Quechua word, *chaupin*, meaning center. This implies that townspeople had maintained an oral tradition attesting to the site's function and importance. While this may be the case I think the word Chavín may refer to *chaupin quechua*, or the middle zone, as the town sits in the bottom of a valley.

Lumbreras conducted significant long term excavations at the site beginning in 1966 and lasting until 1974. He excavated the circular plaza, the *Ofrendas* Galleries, and portions of the *Caracolas* Gallery. His thoughts on sound and ritual at the temple continue to serve as inspiration to current theorists. His more critical view of the role of priests and rulers at the site (Lumbreras 1989; 1993; 2007) are a clear influence on Rick and other recent work at the site (Contreras 2007; Mesia 2007) which critically analyzes how elites may have manipulated their followers into building and maintaining such a costly structure. His ceramic sequence for the site, Table 5.1, actually contained at least nine ceramic styles but the major divisions are presented below.

Table 5.1 : Lumbreras' Chavín Ceramic Chronology. (Conklin, Quilter et al. 2008:xxxii).

Approximate Age	Ceramic Sequence
400-700 B.C., may extend further back in time	Janabarriu
700-900 B.C.	Ofrendas
900-1200 B.C.	Urabarriu and other styles

5.1.5 Burger on Ritual

Burger was a student of John Rowe's at UC Berkeley in the 1970s. His dissertation work focused on Chavín era settlements constructed outside of the main temple area (republished as Burger 1984). He excavated in the modern town as well in the North Field, Pojoc, Waman Wain, and La Banda in 1975-6. These excavations revealed that there were extensive Chavín era settlements outside of the temple. These settlements were dated using radiocarbon samples and the ceramic chronology that Burger (1981) constructed, based on the earlier works of Tello, Lumbreras, and Rowe.

Burger's work not only examined the timing of Chavín but it also sought to analyze Chavín's place in the broader Andean world (Burger 1985; Burger 1989). This work critically re-examined assumptions about the site's relationship to other coastal and highland centers. His well constructed arguments also compare Chavín's material culture and ritual activities to other highland material culture and ritual structures (Burger 1985). This work significantly furthered archaeologists conceptions of who founded Chavín and how they attracted pilgrims because as he noted the spread of Chavín iconography, and perhaps ideology, appears to be distinct from that of other centers in Andean archaeology.

The three phase ceramic chronology (Table 5.2) that Burger (1984) constructed for the site of Chavín directly correlated with the three phase architectural sequence that Rowe had constructed for the temple. While this neat overlap lead to clear interpretations it was clear that further work in the monumental center could clarify elements of this chronology. This discussion is something I will return at the end of the chapter and in the conclusions to the dissertation. In particular, the Janabarriu phase was a source of contention as ceramics of this style did appear in other Andean sites in earlier time periods. Finally it is worth noting that, direct connections and correlations between ceramic styles, architectural styles, and chronologies must always be questioned. One to one associations of this sort gloss over differences and diverse cultural practices. These pronouncements can limit research into the distinct practices of people living within these time periods.

Table 5.2: Burger's Chavín Chronology based on (Conklin and Quilter 2008: xxxii).

Approximate Age	Ceramic Sequence
200-500 B.C.	Janabarriu
500-600 B.C.	Chakinani
600-1000 B.C.	Urabarriu

5.1.6 Rick on Ritual

John Rick and the Stanford team were initially invited to Chavín to create a modern and three dimensionally accurate map of the ceremonial center. This project naturally expanded into mapping the interior galleries and temple construction sequence.

Rick's work on ritual has been informed by the writings of all of the scholars discussed in this chapter. Additionally, Kent Flannery's theory of society and the concepts of system-serving and self-serving motivations informed his vision of authority at the site (Rick 2005:77). In this instance Chavín is viewed as a tradition-based convincing system run by actors who deployed a variety of deliberate techniques, material goods, and architectural features to manipulate and convince their followers. Finally, as noted by Moore (Moore 2005:266), Rick's vision of advanced or evolved shamans intentionally constructing the permanent nature of their powers firmly connects with Moore's visions of the priests as entrenched operators who exist within a well established system. There are differences in terminology between priests and evolved shamans but some of the implications for societal organization are the same.

The new architectural chronology of the site (Table 5.3) completed by Silvia Kembel (2001) served as a foundation for much of Rick's writing on ritual practices conducted at the site. The longer temporal reach of the Janabarriu style and its association with the Black and White Stage means that the central construction phase and the dominant ceramic style existed at the same point in time.

Table 5.3: Chronological Chart for Chavín showing approximate relationships between ceramic types, time periods, and construction stages (see Kembell 2008, modified from Rick 2008:11). This table does not have time lengths but they can be implied from where the next sequence begins.

Approximate Age	Ceramic Sequence	Kembel's Construction Sequence
500 B.C.	Late Janabarriu	Support
700 B.C.	Early Janabarriu	Black and White Stage
1100 B.C.	Urabarriu	Pre-Black and White

5.1.7 Moore on Ritual

Jerry Moore is the only archaeologist discussed in this chapter who has not conducted significant fieldwork at Chavín. However, his writings serve as a useful analysis of other archaeologists' work and provide insights that can be used to further future research. His survey of the connections between South American religious practice and architectural forms is detailed in Table 5.4. Additionally, his work on architecture is a valuable comparative reference for all archaeologists working in the region as well as others who want to analyze how processions and the movement of people through a site conveys vital information about societal organization and the control of public space.

Table 5.4: Connections between religious authority/practice, based on Sullivan (1988:387), and ceremonial architecture, reproduced from Moore (2005:85).

South American Ethnographic Case	Medium (no examples of this specialist in this literature)	Ecstatic Shaman	Canonist	Ceremonial Architecture
Yanomamo		+		no ceremonial architecture
Waiwai		+		shaman's hut only
Bororo		+		men's house, dance area
Mehi		+		men's house, dance area
Guaraní		+		dance area, shrine
Warao			+	dance area, shrine, temple
Kogi			+	dance areas, temples, sacred centers
Mapuche		+	+	dance areas, shrines, mounds

One important conclusion from Moore's work is that we should reconsider certain assumptions about Chavín, in particular the nature of religious practice and formal societal roles. While he notes (Moore 2005: 220) that there is broad consensus that these Formative Period structures were religious constructions he also states that there are distinct differences between theorists on the nature of authority at these sites. The ethnographic record of South America does not appear to support the idea that there were formal temples run by ecstatic shamans. Shamans are generally described as ritual practitioners imbued with special powers that they enact in unique charismatic events, their powers are usually not considered to be rooted in established institutions. Rather every time we see formal temples we see examples of priests who practice some form of a canonical religion. The canon may not have been inscribed in written language but there are elements of the iconography at Chavín that would have been clearly decipherable to visitors to the monument. Priests are considered to be ritual practitioners granted societal positions based on their knowledge of specialized religious knowledge. Based on this analysis as well as a five point variable architectural study of permanence, centrality, ubiquity, scale, and visibility (Moore 2005: 220) he concludes that Chavín and similar sites were run by priests, not ecstatic shamans. While this conclusion avoids debates about whether or not these sites were evidence of state level societies it does provide meaningful insight into the lives and practices of Chavín's inhabitants. I will return to these definitions later in this chapter when discussing my own theories on ritual practice at the site.

Figure 5.1 shows iconography that has been labeled either evidence of shamans or deities. I believe that Moore convincingly demonstrates that we should call these figures priests and acknowledge that the *Lanzón* figure was most likely a figure in a canonical pantheon of gods.

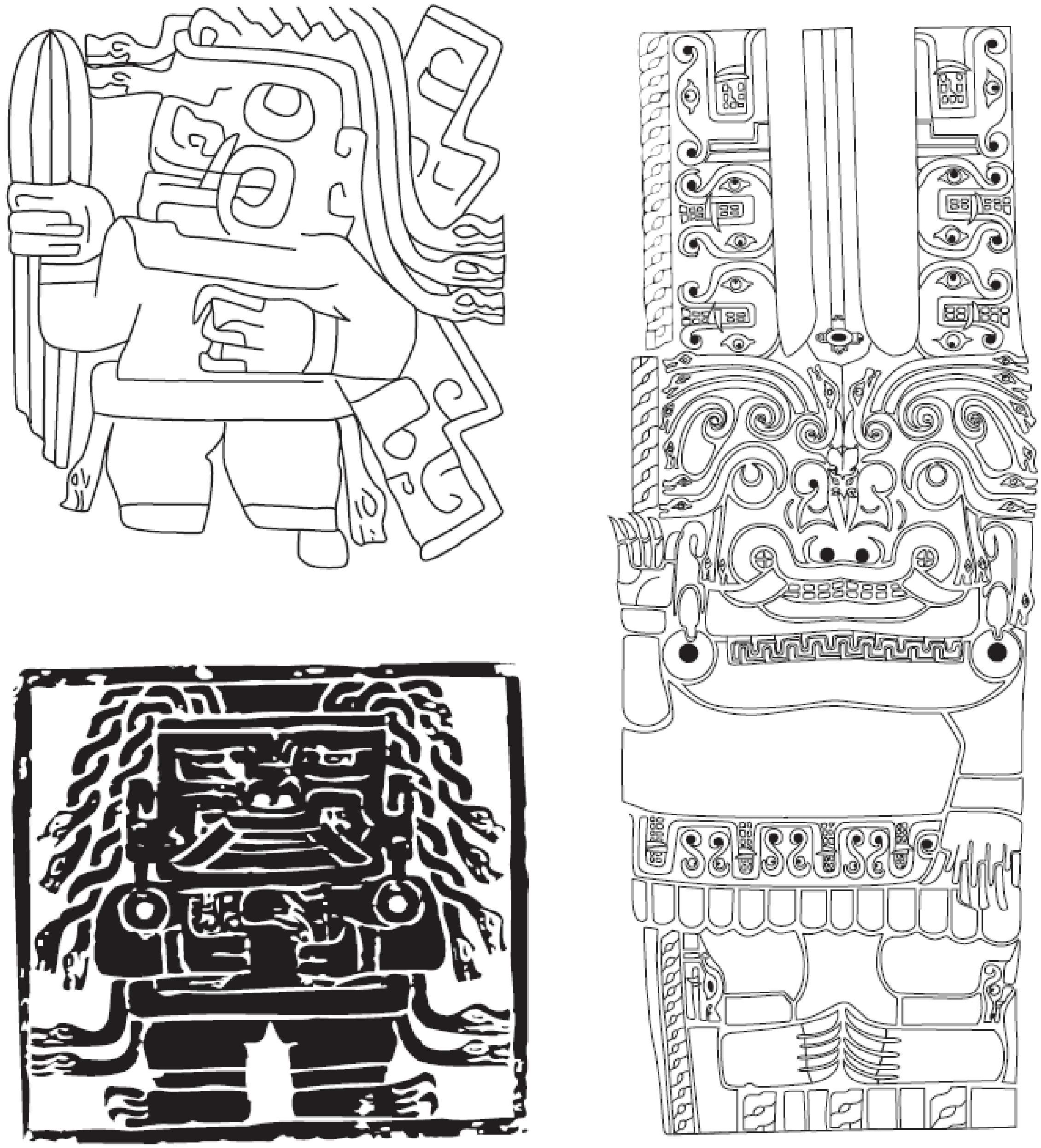

Figure 5.1: Images of the “shaman”, which I believe should be renamed priests, and the Lanzón from Chavín. Images redrawn from Burger 1992.

Another prominent aspect of Chavín iconography is their depiction of processions. As Moore elaborates:

> Andean processions are associated with a ceremonial calendar. The ethnographic cases highlight the importance of two calendrical systems- the first based on seasonal agriculture, the second based on Catholic liturgical year. There is every reason to believe that the agricultural cycle would similarly tether the prehispanic

> ritual practice, which suggests that different regions of the Andes (the sierra vs. the coast, for example) might have distinct ceremonial calendars. While the relationship between the Catholic ritual calendar and prehispanic practice is unclear (as discussed by Urton [1990:98-99], other ritual calendars might have been connected to nonagricultural activities, such as the anniversary of an ancestor's death or the initiation of an age-grade. Minimally, we would expect prehispanic Andean processions to be linked to a ceremonial calendar of some form (Moore 2005: 148).

To this useful description I would solely add that the Catholic liturgical year is itself connected to the northern hemisphere's agricultural calendar, for example the Easter celebration of rebirth occurs in the spring. The importance of processions and the material goods used in them are a theme that I return to in chapter 8.

5.1.8 Liturgies and my conception of ritual practice

There can be clear differences between religions in literatate and non-literate societies (Bell 1997). While there are often differences of formality and prescribed action they are not absolute and societies without writing can have elaborate and formalized canons of knowledge and ritual action. Rappaport (1993, cited in Bell 1997:178) described "indexical" performers and practices that serve to reify the canon of knowledge and limit the power and actions of individual actors. These acts are part of a larger liturgical order that attempts to make this sacred knowledge appear permanent and unchanging (Rappaport 1999). All of these practices stand in marked contrast to the actions of shamans or other charismatic individuals who bring the divine into their own actions and performances. A shaman's actions and religious performance bring greater prestige to themselves whereas a priest's actions can bring prestige and power to themselves but it also recreates the liturgy and demonstrates the all-encompassing ideological power of the canon and other sacred forces larger than the individual.

Canonical practice can limit the power of priests but there are also examples from Native America where the priests do not solely channel divine powers. Humans can become the divine in some rites, such as when Hopi priests put on masks and sacred garments and become the *kachinas*. As the quote from Geertz described, in ritual, the world as lived and as imagined can become one. The priests shown in Figure 5.2 may have been some of many who engaged in formal processions both for the masses in the plazas and for the select few who were invited into the galleries. These priests portrayed in the site's iconography were not necessarily solely mediating human concerns with the divine they may actually have been channeling the divine and becoming them during important rites.

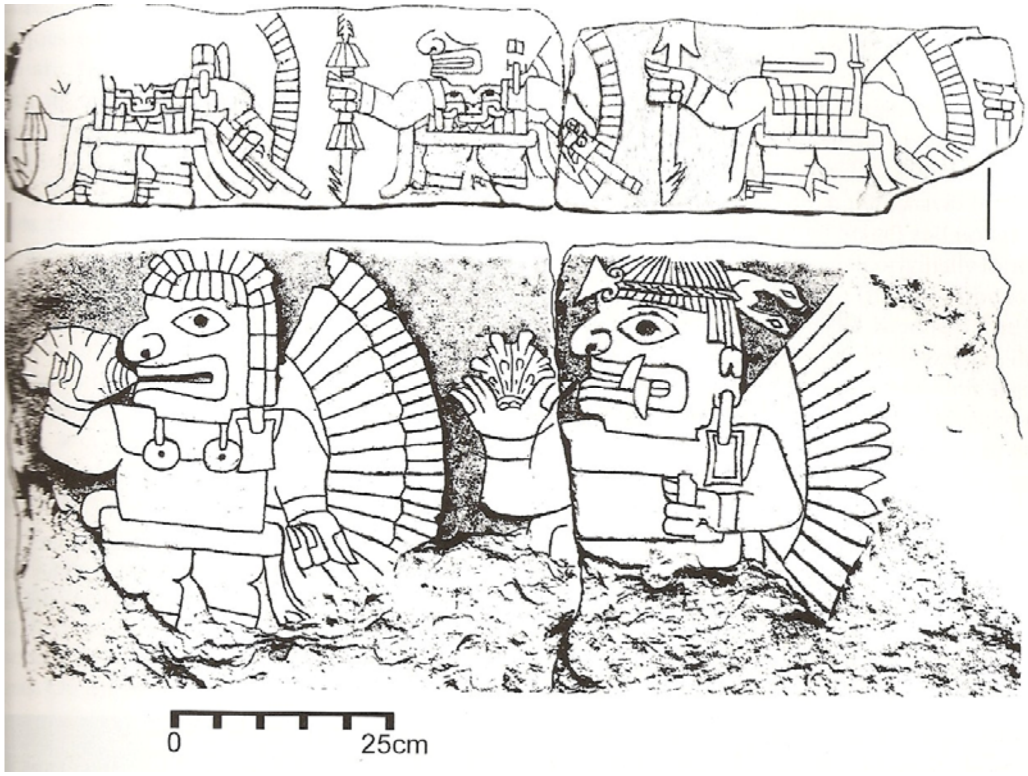
Figure 5.2: Chavín Priests shown marching in procession, from Rick 2008:21.

This possibility gives rise to questions about the order of the Chavín sacred world. Was the pantheon hierarchically ordered as in Inka times when the sun was the god to be worshipped above all others (Bauer and Stanish 2001)? While the Inkas did not reject the Gods of others or forbid their worship they did state that their own God needed to be included in the top position. If a similar situation existed in Chavín times, one in which pilgrims were encouraged to worship the Gods of the Chavín inhabitants, the Staff God, they would not have had extensive military means of forcing pilgrims to continue worshipping these gods. Their conversions and gaining of adherents may have worked through negotiation and the spread of applied knowledge. Most likely contact with the divine at Chavín would have included discussions of agriculture, the environment, and mortality. If Chavín's priests had demonstrable expertise in these areas, as well as the ability to overwhelm the senses of the visiting pilgrims (Rick 2005) they would have been capable of convincing outsiders of the power of their gods.

5.2 Conclusion

In conclusion a wide range of ideas on the nature of ritual and religion at the site have been presented. The work of these scholars can be roughly divided into a few major strains. Burger is more prone towards believing that rituals at Chavín attracted pilgrims to the center and that the religious world may have operated in a more Durkheimian sense as a constructor of social solidarity. Tello and Rowe also appear to fall closer to this conclusion but their work does not as directly address these discussions of the power of religion as does some of the later work. Lumbreras and Rick believe that elites, who were probably not believers, were manipulating and exploiting people based on their religious desires. These active agents who altered the physical and ritual world were clearly more patterned on the thought of Marx. Lumbreras and Rick have also considered how insights from Weber (1958; 1968) and Machiavelli (1995) can inform our vision of the lives and works of the priests of Chavín. Finally, Moore and his practice based use of Bell and Bourdieu does not clearly fall into either camp, although Bourdieu and practice theory owe a large debt to Marx and Weber.

Finally, these theories do not have to be mutually exclusive or invalidating of one another. However, it is first necessary to present the houses and excavations that uncovered the material remains that I will discuss in later chapters. After analyzing the excavations and associated material remains I will reconsider the ritual practices of La Banda's inhabitants in chapter 9.

Chapter 6: La Banda Excavations

6.1 Introduction

The long history of excavations at the site of Chavín de Huántar, Peru is well documented (Burger 1992; Contreras 2007; Lumbreras 1979; Tello 1941). The precise location of previous excavations at Chavín was documented by Dan Contreras (Contreras 2007:14). Much of the previous research focused on the ceremonial core of the monument (Rowe 1962; Lumbreras 1970). The other foci of research were the west field (Contreras 2007), the area underneath the modern town to the north of the monument (Burger 1979; Figure 6.1), and the settlements of Pojoc and Waman Wain located on rocky outcrops away from the masking effects of colluvial soil flow (Burger 1995).

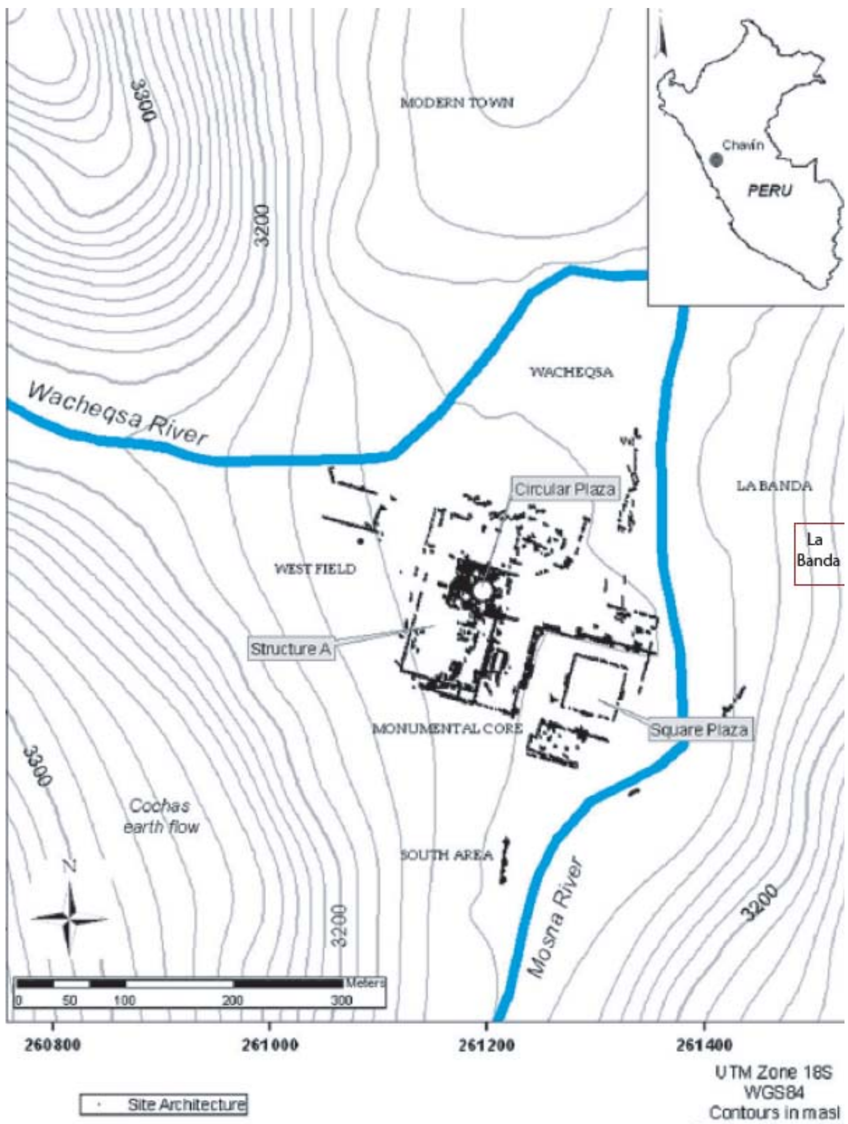

Figure 6.1: Chavín Elevation Map. The center of the Square Plaza is N500 E500 elevation 100. The La Banda excavation area is marked by the red box. This image was provided by D. Contreras.

The Stanford Project at Chavín de Huantar was the first team to systematically work in the La Banda Sector. Burger placed two units in the La Banda sector in 1975-6, both to the east of the 2003 and 2005 Stanford excavation. One of his units was south of my 2005 excavations and the other was to the north (see Contreras 2007:14; Figure 6.2). Amat conducted excavations in the late 1960s approximately 150m to the north of our La Banda excavations. Neither Burger nor Amat uncovered evidence of Black and White Stage occupations in the La Banda sector. In 2003 the construction of a road through the sector uncovered extensive settlements and the INC and the Stanford team were called in to oversee the rescue excavations. The Stanford team later decided that the sector was worthy of extensive investigation due to the intact domestic settlements. The Stanford team has worked in many different areas of La Banda and these excavations are visible on the excavation history map (Contreras 2007:14; Figure 6.2 and 6.3)

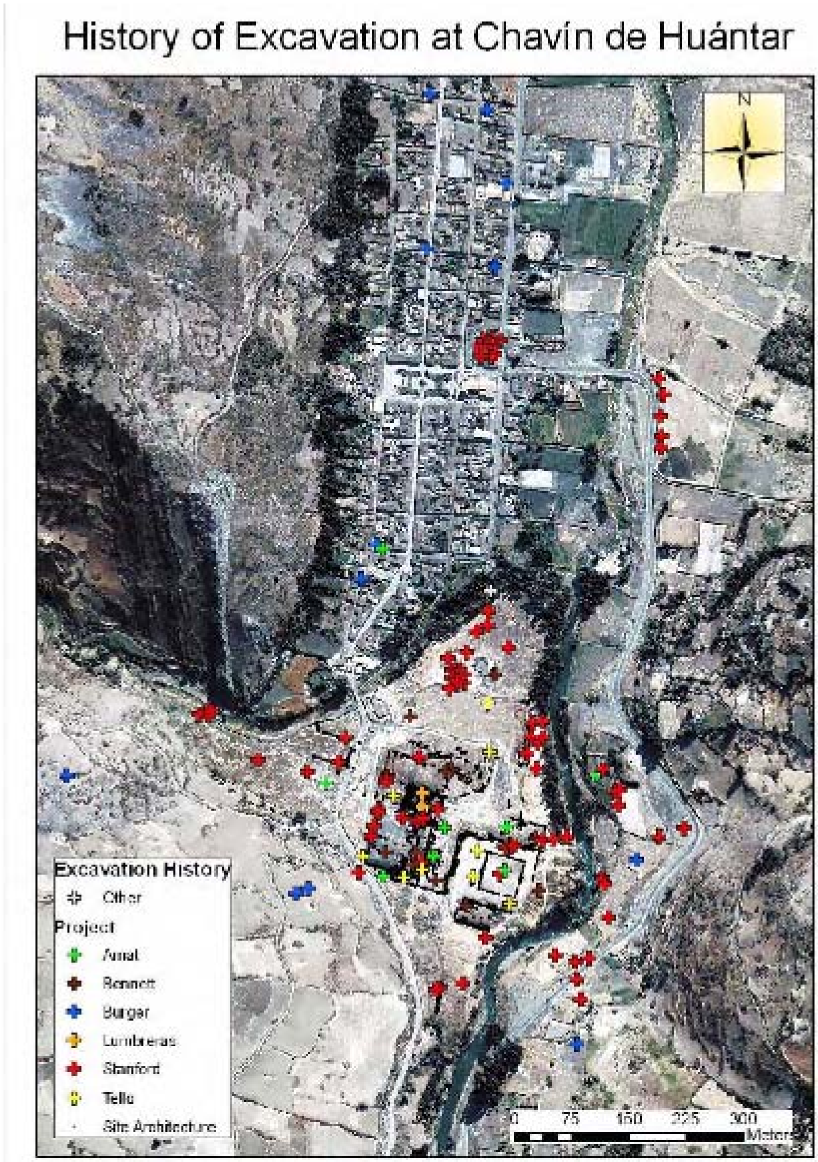

Figure 6.2: History of documented excavation at Chavín. "Other" category includes excavations by Muelle, Fung, and Kauffman and Iriarte. A notable absence is the extensive cleaning carried out by Marino Gonzales (see Rick and Mendoza Rick 2003) and the INC. Used with permission and modified from Contreras 2007:14.

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Figure 6.3: Chavín de Huántar, location of La Banda excavation units in red. These points were recorded with a theodolite and the map was made from the accumulation of thousands of data points. The river is blank and the La Banda units are to scale. The map was made by Dan Contreras and John Rick using a Leica Total Station.

In 2005 I decided to excavate in La Banda directly south of the INC 2003 excavations, and north of the megalithic standing stones (Contreras 2007: 151) known as *huancas*. I returned to this area as I wanted to excavate domestic areas. This area is directly east and slightly to the north of the square plaza (Tello 1943). As Figures 6.4 and 6.5 demonstrate, the sector is sloping, probably from later colluvial slides; we also learned from our excations that the occupations' surfaces sloped as well, most likely from earlier colluvial action.What is remarkable is how near this neighborhood is to the ceremonial center. From this location it was possible to both see and hear rituals and activities that took palce in the ceremonial core of the site. The Mosna River separates the sector from the main temple area but this was not an impossible barrier. During the dry season the river is low enough to walk across in certain sections. Additionally, there could have been an *ichu* grass woven bridge or some other non-permanent construction that connected the two regions. It is postulated that a stone bridge existed over the Wacheqsa River and connected the area north of the temple with ceremonial core although this contention is contested as the bridge that existed in the early 20th century in that region may have been constructed with stones from the Middendorf Staircase. During the 2005 excavation season the Stanford team felled some eucalyptus trees near the Mosna Rover and the teams would cross back and forth between the sectors using these trees. While eucalyptus trees are a modern invasive species and the majority of native trees in the region, such as *Polylepsis sp.*, are not as tall and straight it is possible that several trees were strapped together and made into a bridge.

Figure 6.4: La Banda units in foreground, temple located across the river. CdH-LB-SM= Chavín de Huántar- La Banda- Sector M.

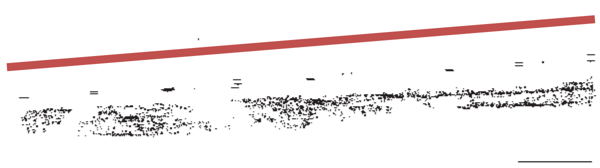


Figure 6.5: The slope of the La Banda excavation area, north facing. The X, Y, Z points are theodolite data points recorded in three dimensional space. There was a downward

slope from E-->W and from N->S. These were the same black data points visible in the plan map.There was a gentle slope in the lived area.

The 2005 excavations conducted in the La Banda sector, Cdh-LB-SM, and excavations directed by John Wolf, over the past three years (2001-2003 and Figures 6.6-6.9) revealed an area that was continuously occupied over millenia (beginning in the middle preceramic and lasting until the Middle Horizon, (J. Rick pers. comm., Wolf in preparation). There was a tradition of reconstruction of dwellings in the area, occupation levels were placed on top of previous occupation levels at least two meters in depth. The structures exhibit standardized Chavín construction techniques that reflect the attention to architectural norms that was also evident in other sectors of Chavín. This type of construct is a mix of stone foundqation rocks with clean fills and stones laid on top. The La Banda sector is important because it was the first intact Early Horizon domestic area close to the monumental center uncovered at the site. Because of this it offered the best chance to investigate the lived life of Chavín inhabitants. Finally, there have been limited amounts of field work done documenting Early Horizon domestic settlements throughout the Central Andes.

Figure 6.6 : Overview of road and 2003 rescue excavations in La Banda. Image courtesy of J. Rick. N→

Figure 6.7: The La Banda 2003 rescue season, excavated by the INC and Stanford. In the foreground are sites previously considered commoner settlements.←N Image courtesy of J. Rick.

Figure 6.8: Joined image of excavated units from 2003 La Banda field season. N^. Image courtesy of J. Rick.

Figure 6.9: Close-up of upper excavated area from Figure 9. N^. Image courtesy of J. Rick.

6.1.1 Field Methodology

The 2003 rescue excavations directed by the INC, John Wolf, and John Rick in the sector revealed extensive domestic architecture. These settlements were an unpredicted find as previous excavations and survey work in the region did not find large quantities of Chavín period ceramics (Contreras 2007). My excavations conducted in 2005 were placed south of the domestic areas revealed in 2003. We explicitly placed out units contiguous to the 2003 INC directed excavations in order to widen our knowledge of the domestic areas.There was some slight overlap with the excavations of 2003 in unit N11 and the surrounding units. However, the 2003 excavations only went down to level II of our excavations.

Excavation procedures followed the protocols established by the Proyecto Stanford Chavín de Huántar over the course of more than a decades worth of research at the site of Chavín de Huántar (Rick and Mesia 2002; 2003; 2004; 2005; 2006).

The excavation strategy described in this chapter is based on the team's protocols which are described in various publications (Contreras 2007; Mesia 2007; Rick et. al 2001-7). The units were 2 x 2m and were rarely subdivided. The units were excavated following natural or cultural stratigraphy (Harris 1979). We started with level I and the numbers increased as we moved down vertically. The colluvial overburden was level I and the levels that followed were cultural levels. They were dug by unit levels following the 2x2 unit grid. The data were recorded on unit level excavation forms. The elevations were recorded using a total station or with datum points strategically placed near each of the major excavation areas. Artifacts were point located and recorded. Every unit level was photographed twice at the completion of the unit level excavation. Almost all levels had more than two photographs recorded. The first excavation levels and the cleaning of the superificial ground cover were conducted with picks but later levels were excavated almost entirely with trowels. 100% of excavated sediment, from level II onward was screened using ¼" mesh. When large visible quantities of carbon were visible they were collected for dating. Bucket counts of 15 liters (L) were recorded to enable us to analyze the density of artifacts. At the end of every unit level 20L of sediment for flotation samples for macrobotanical analysis and a 500ml bag of sediment for phytolith analysis was collected. Botanical samples were not collected from the colluvial overburden as these levels contained modern material.

The level forms (Appendices 6.1-6.5) enabled the recorder to note elevations, level descriptions, artifacts recovered, spatial coordinates, notes on specific artifacts, and general comments. All level numbers are noted with roman numerals in this chapter. Data recovered from all sediments included the Munsell color, granular type, and inclusions. The recorder drew a map of all of the architectural features and artifacts recovered.

Ceramics, bones, and lithics were visibly present in nearly every subcolluvial cultural level. All material was counted, sorted, and weighed in the laboratory and that information is available in Appendix A, B, and C. The ceramics were divided into decorated and diagnostic ceramics. Undiagnostic body shard ceramics were called bulk ceramics. All decorated and diagnostic ceramics were photographed on a black mat with metric scales. The decorated rim sherds and portions of the decorated body sherds from pertinent levels were drawn. All material was inventoried and stored at Chavín in the site museum.

At the end of the unit level excavations stratigraphic profiles were drawn, producing a total of 32 profiles. There were 214 floated macrobotanical samples exported to the United States. Additionally, carbon samples collected during excavation were exported for analysis along with the phytolith sediment bags.

In addition to using the Rick protocol I employed data recording methodology employed by the Taraco Archaeological Project (Hastorf and Bandy 1999). These standards were used to identify and describe architecture and domestic space. There were two major distinctions made when defining architectural features, Architectural Division (AD) and Architectural Subdivision (ASD). An architectural division is larger than an ASD and defines several architectural features that form a cohesive unit, like a household or enclosed space. An architectural subdivision is a feature within an architectural division that is a single structure.

The descriptions of the 2005 excavations that follow are organized by architectural division (AD). Detailed descriptions of units and levels are in Appendix D.

6.2 The Excavations

The excavations in La Banda were planned using information gathered during the 2003 rescue excavations. This previous work established extensive evidecnce for domestic settlements in the sector and we laid out grid points south of these excavations. The grid was based off the master site plan whose central point is the center of the Square Plaza at N500 E500 elevation 100 (Figure 6.1, Table 6.1). Table 6.1 contains all of the location coordinates of the units excavated. My 2005 excavations opened up most of the

2 by 2 m units in a space of 14 by 16 meters (Table 6.1, Figure 6.10 and 6.11). My goal was to uncover domestic compounds in La Banda and I realized from earlier excavations there that I needed to open a large area. Furthermore I knew from Wolf's 2003 excavations that the floors were quite close to the surface, so I knew in the time I had I could open up most of this area. The deepest we excavated in some unit-levels we went down IX levels approximately three meters, whereas the shallowest excavations were only down III levels, roughly 80 cm. In every unit we uncovered occupation evidence with sterile sediments under most. In every unit we did followed standardized excavation procedures which are described below.

The walls in La Banda were formed with stones chosen for their uniform nature. Then these stones were rounded or smoothed if necessary. They were bonded together with clay and other sediment to form a solid base. It appeared that the majority of the structures in the La Banda region had a stone wall foundation that was topped by earth walls. The earthen walls disintegrated over time so that all that was left were the stone bases.

The excavations uncovered structures that I divided into four Architectural Divisions

(ADs). These spaces were separated from one another by substantially higher and wider walls. Two of the ADs (A and B) contained spaces that were used for living and craft production, the third space was a pathway (AD C) framed by parallel walls on each side. AD C was the only area without formally constructed floors, rather the pathways had compacted sediment at its base. ADs A and B both had formal stone or clay floors in some spaces and compacted sediment floors in other portions of the space. AD B was the only area with a large stone floor, this floor was the central patio which had rooms and smaller spaces connected to it. AD B had small divided rooms, enclosed square spaces, and more open spaces. In addition to the three main ADs there was a small space to the west of AD A that was labeled as AD D. Each of these ADs and the ASDs within them are described in detail below. The stratigraphic profiles presented here were drawn after the excavations were completed and thus there are some slight disparities between them and the level descriptions in Appendix D. There were some extra levels in some units and these differences were noted in decisions to combine samples from different levels in data analysis. The vertical straigraphy and excavation history of the ADs were described first and then the ASDs within them are described in conjunction with a discussion of the horizontal layout of the ADs.

Table 6.1: Location of units on site grid plan.

Unit	Southwest Corner	Unit	Southwest Corner
N10	N542E715	K15	N552E709
N11	N544E715	J11	N544E707
N12	N546E715	J12	N546E707
N13	N548E715	J13	N548E707
M11	N544E713	J14	N550E707
M12	N546E713	J15	N552E707
M13	N548E713	J16	N554E707
L11	N544E711	I13	N548E705
L12	N546E711	I15	N554E705
L13	N548E711	H12	N546E703
L14	N550E711	H13	N548E703
L15	N552E711	H15	N550E703
K11	N544E709	H16	N552E703
K12	N546E709	G12	N546E701
K13	N550E709	G13	N548E701
K14	N550E709	G14	N550E701

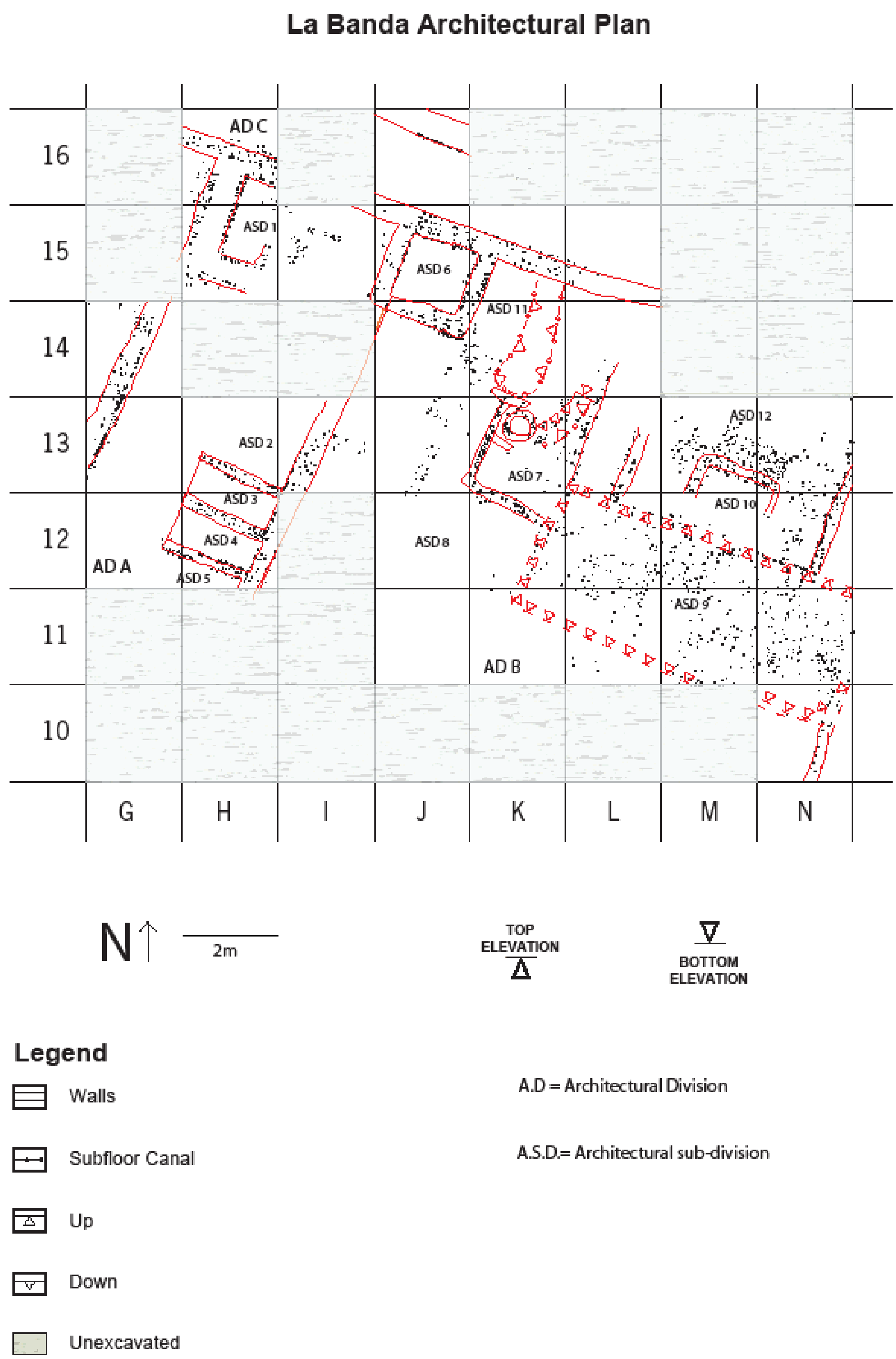


Figure 6.10: Plan Map of La Banda Sector


Figure 6.11: Overview of final excavations, looking west towards the temple.

6.2.1 Architectural Division A

This Architectural Division (AD) was the west side of the excavations and was defined by two parallel confining walls that ran from the southwest of the area to the northeast (Figure 6.3). We found the occupation zone to be mainly in levels III and IV. The northern edge of AD A terminated in to the large wall of AD C, the pathway area. There were five Architectural subdivisions (ASD) in this area. The ASDs were defined by small dividing walls and differences in floor construction and makeup.

The vertical stratigraphy of AD A was fairly uniform across the space. Levels I and II were overburden and colluvial fill. Levels III onwards were occupation levels related to floors and compacted sedments found in all of the ASDs. Three of the units, G12, H13, and I13W were excavated down to level IV. Three units, G13, G14E, and H12, were excavated down to level VII. There were formal and informal floors encountered in level IV. The units that were taken down deeper were areas where we attempted to define the limits of cultural construction in the AD. Sterile non-cultural fill was found in G14 VII but this level was outside of the AD. In unit H12 the units followed a slightly different chronology and the prepared white clay floor was level VI and level VII was solely in the northern portion of the unit. In unit G13, level VI quad SE, was the continuation of the formal floor found in the small rooms of ASDs 3 and 4.

All or portions of units H16, J16, K15, L15, G12, G13, G14E, H12, H13, and I13W were part of Architectural Division A. ASDs 1 and 2 in the north were architecturally different than the ASDs in the south. These two structures were larger than ASDs 3-5. ASD 1 was a semi-enclosed space in the north of the AD. This space was marked and divided differently than the ASDs to the south of it. The white floor present in this ASD connected to the areas east of it in unit I15. Unit I15 contained the only hearth found in this compound. It is visible in Figure 6.12. The hearth was small, informally constructed and lined with irregularly shaped stones. There was no air duct or channel leading to this hearth. ASD 2 was a larger space than the all of the other ASDs south of it. The surface of ASD 2 was compact clay suggesting that it was formed through use. In ASD 2 the artifacts were dense in levels I-III, level III being the main occupation level, and less dense in levels IV. There was also a human molar found in this area.

Figure 6.12: I15 Level 7. Small domestic hearth. North arrow is 20cm in length.

The ASDs in the south of this AD were small rooms divided by the partial remnants of dividing walls. ASDs 3-5 were three small rooms divided by stone walls of which solely the base remained, they were roughly one meter in height and two meters in width (Figure 6.13 and 6.4). Each of the clay floors was colored and the different floor colors can be seen below in Figures 6.13 and 6.14. These floors were strikingly different than the floors encountered in other ADs. In no other AD were compact clay floors so distinctly colored and it is likely that the clay was brought in from the region near Pojoc. The coloring was not the only unique facet to this area. The floors were clean and there were sparce amounts of cultural material on them. There were few in situ artifacts. However, there was one find in ASD 4, unit H12 level VI, that stood out. A spondylus bead was embedded in the floor of unit H12. This artifact was the only piece of spondylus found in the entire La Banda Region. The narrow width of the spaces, ASDs 3-5, was wide enough to conceivably allow an adult to lay down in these spaces. The walls between these ASDs were smoothly cut stones that were nearly flush to the floor.

Figure 6.13: G12 Level 4, <-N The different colored clays and distinct rooms are visible. Compare to the plan map to see that the space in ASD 4 is approximately 1m south to north

Figure 6.14: H13 Level 4. Note the color differences between the two floors, ASDs 2 and 3. North arrow is 20cm in length.

The excavations in AD A revealed formal construction in the south and less formal construction in the north of this AD. A typical unit profile for AD A is visible in

Figure 6.15. This division was one of two living areas revealed during the excavations, the other being AD B. These two living areas were composed of different living and working spaces and some of the space was apparently not lived in and was reserved for work or ceremonial purposes. Future work should define the spaces outside of this AD as well as the pathways which the inhabitants of this area would have taken to travel between this space and other nearby divisions.

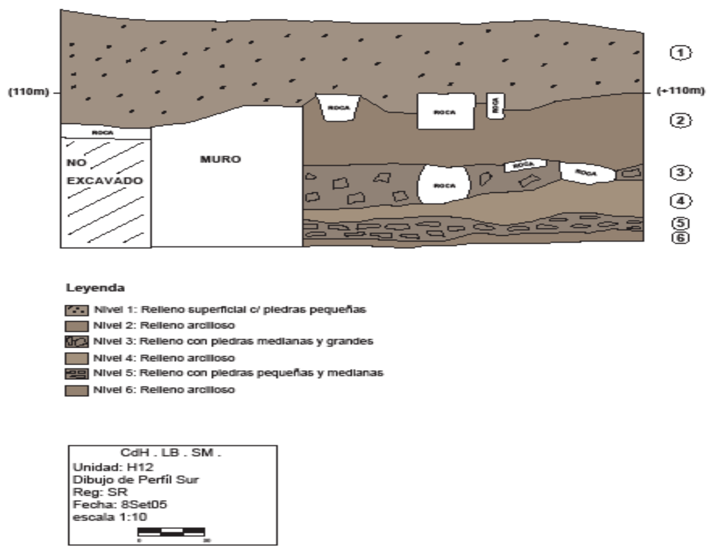


Figure 6.15: Unit H12 South Profile

6.2.2 Architectural Division B

This Architectural Division was at the center of the 2005 excavations and was defined by the patio area and the constructions surrounding it. This was the largest architectural division and it contained the largest number of ASDs. The patio was composed of slate and other flat stones but the surrounding construction was made of worked stone of more common varieties. In 2003 the excavations came close to hitting the slate floor, in unit N11, but they did not dig beneath the floor's overburden and reach the floor.

The vertical stratigraphy of AD B varied considerably. This large AD was contained all or portions of 22 units. In 15 of these units there were only III or IV levels, and in one of the first units (M12) to be excavated only II levels were excavated. In M12 there should have been III levels like the units that surround it. Two units, J13 and J14, were excavated down to level VII and unit J12 was excavated down to level IX. Units J13 and J14 had floors at their lowest levels. In unit J12 we excavated down to the sterile river sediment that was present underneath all of the units. In this unit we only excavated two sterile river levels, VIII and IX, but in unit L11/M11 we excavated over two meters of the sterile river deposit. L11/M11 was opened underneath the formal slate floor and beneath the floor there was burn bone bone and other cultural material. After the cultural deposits the river sediment changed courses twelve times indicating that the fluvial deposits were laid down over long periods of time.

The ASDs, 6-12, varied from small enclosed rooms to open space surrounding the patio. ASD 6 was the small enclosed room located almost entirely in unit J15. There were floors in levels IV and VI of the unit and abundant artifacts in levels I-IV, with fewer artifacts in levels V and VI. The ASD contained artifacts of all the major categories, as well as mollusks and carbon.

ASD 7 contained the highest concentration of elaborate artifacts found in the excavations. These artifacts were concentrated in unit K13 and surrounded the formal hearth, K13 Level IV Feature #1.

ASD 8 was the area to the east of the central patio floor. Additionally, this ASD encompassed the areas that flowed from the space to the east of the patio, these included areas in units I13, J11-14, K11, K12, and L11. These open spaces (Figures 6.16-6.18) did not have many walls or evidence of formal construction rather they appeared to be open space that flowed towards other rooms. However, there was one domestic hearth found in unit J13, level V Feature #1 (Figure 6.17). This small concentrated burn area contained deposits of carbon but did not have large stones bordering it. In unit J12 we excavated down into the sterile sandy fill that existed across the entire area. Unit J12 was the first time we encountered the sand fill and later diagnosis of the sand and river stone inclusions in it revealed that it was the remains of river deposits. At some point in the Holocene a river flowed through the La Banda region and deposited sediments that indicate that the river changed course several times. The fact that these settlements were built on top of river sediment means that they were not using land available for agriculture. Rather by building homes on top of river fill, homes that were later abandoned, they created the foundation on top of which the current inhabitants of La Banda farm.

Figure 6.16: J13 Level 5. North arrow is 20cm in length.

Figure 6.17: J13 Level 5, Feature 1. A.D.B and A.S.D. 8, small domestic hearth. North arrow is 20cm in length.

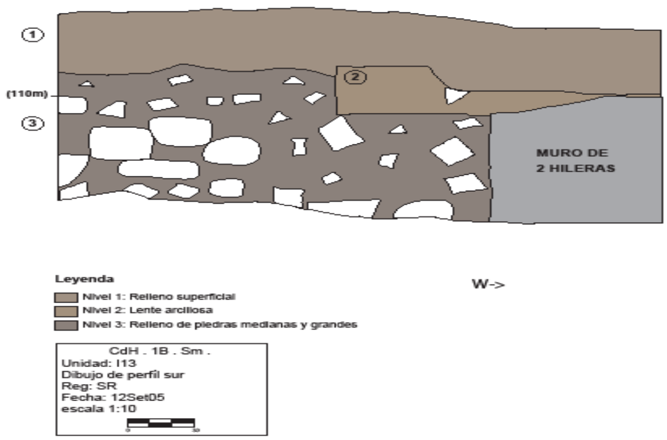


Figure 6.18: Unit I13 South Profile

ASD 9 was the central patio. The patio floor (Figures 6.19 and 6.20) was initially discovered in the southeastern units of N10 and N11. The patio floor exhibited remarkable architectural similarities with the entrance to the circular plaza (Figures 6.21 and 6.22) that was uncovered in the 2005 excavation in the central temple area. The floor uncovered in the La Banda region could have served as a less formal space in which ritual practitioners could rehearse dances and processions that they would perform in the main temple area. The presence of formal ritual periphenalia uncovered in the area surrounding the hearth of unit K13 (to be discussed in the following chapter) indicated that the material necessary for ritual acts was constructed in the region surrounding the patio floor. Additionally, there were fewer artifacts and burnt wood recovered from the overburden covering the patio floor. This relatively clean space was presumably not roofed and was easily accessible by the spaces surrounding the floor to the north. Future work should investigate the areas to the south of the floor in order to determine if there are other rooms and pathways that border this area.

Figure 6.19: AD B, the Patio and area to the north. N-> West facing the slate floor. The rooms to the north of the patio step down into rooms and other use space.

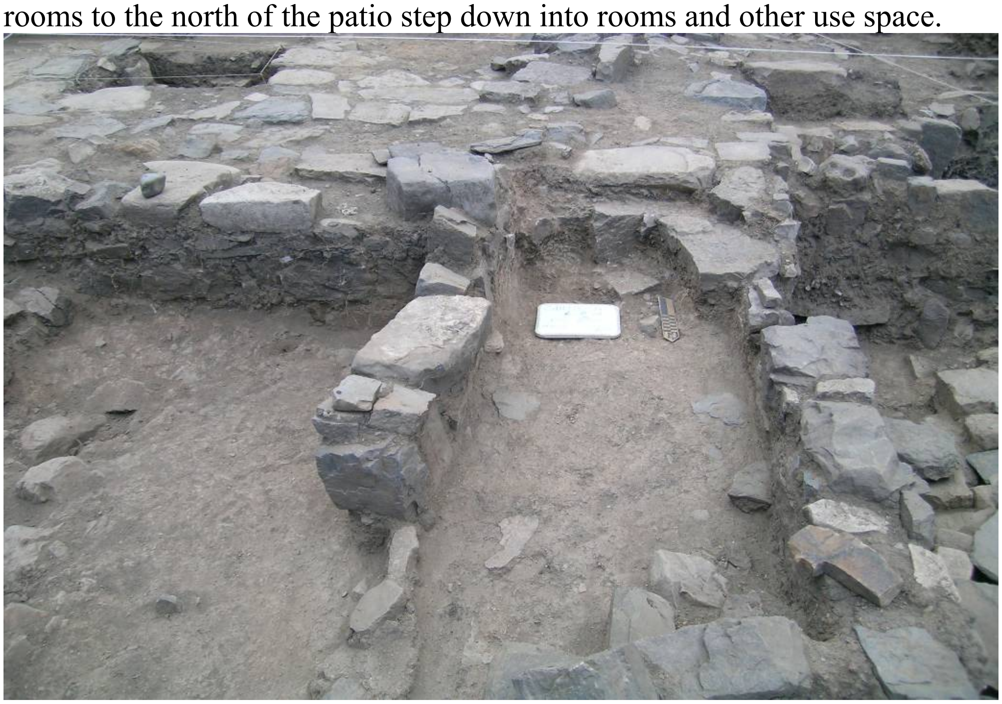

Figuer 6.20: L12 Level 4. North arrow is 20cm in length.


Figure 6.21: Slate floor entrance to the Circular Plaza in the Main Temple Area.

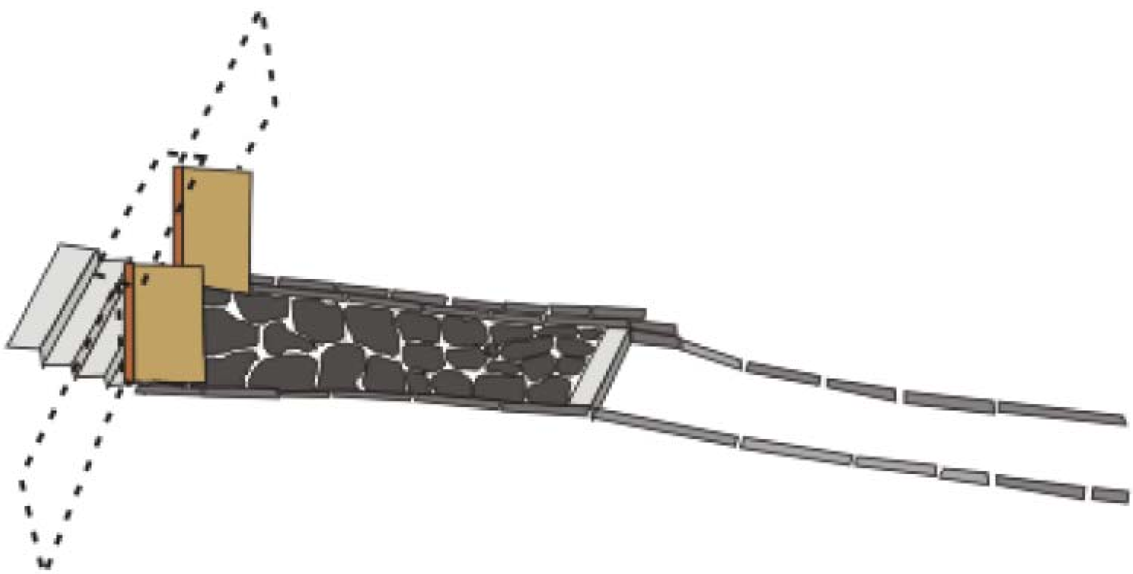


Figure 6.22: Idealized representation of the entrance from the Atrium to the Circular Plaza. It had a restricted perspective and a limited audience, as opposed to the large crowds possible in the Plaza Mayor. The doors are presumed due to the presence of postholes carved into the stone stairs. Image courtesy of J. Rick.

ASD 10 was the area to the north of the patio floor. It began in unit M12 and extended into units N12, M13, and N13. The botanical maps of this area, in the next chapter, demonstrate that there was a greater concentration of macrobotanical remains in this ASD than on the patio floor. The inhabitants of the area presumably consumed food in these units and kept the patio clean for other activities.

ASD 11 was the area to the north of the formal hearth in ASD 7. This area contained a capped stone channel which is described in further detail below (Figures 6.23 and 6.24). This area encompassed portions of units K14, L14, and K15, see Figure 6.10. This channel dead ended into the wall that formed the southern boundary of AD C. The large wall appears to have been built after the channel and its construction cut short the previous trajectory of the channel. The channel had features that would have enabled water to flow through it. If it was longer it could have carried water from one edge of the settlement to the other but as it was less than 4m in length it presumably did not carry water after the wall was built. In later times it could have served as an airduct for the hearth in K13 or for storage.

Figure 6.23: ASD 11 view from the east looking west.

Figure 6.24: Unit J14 abutting southern wall of structure in J15, ASD 6. North arrow is 20cm in length.

ASD 12 was the area to the north of walled space in ASD 10, see Figure 6.25. Portions of units L13, M13, N13, and L14 made up this ASD. In units M13 and N13 there was evidence of wall fall. The many stones found above the compact sediment in this area came from the wall visible in these units, see Figure 6.25. This space also contained higher numbers of macrobotanicals than the central patio.

Figure 6.25: M13 Level 4. A closeup of the area to the north of the patio. North arrow is 20cm in length.

There were three hearths discovered in the La Banda excavations. The most formal hearth in unit K13 Level IV is illustrated below in Figure 6.22 and is analyzed in the following chapter in conjunction with a discussion of ceremonial good production. The formal hearth was surrounded by channels and airducts that provided air flow to the fire. The other hearths discovered were less elaborate and did not have airducts leading in to them. The other hearths were discovered in units I15 Level VII (AD A) and in J13 level V Feature #1. These domestic hearths are visible in figure 6.12 and 6.17.

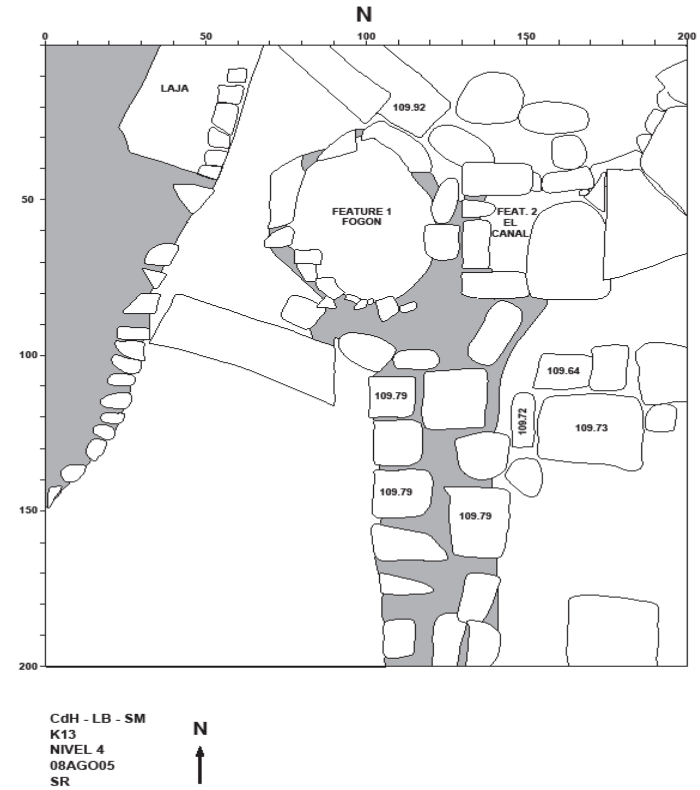


Figure 6.26: K13L4. This formal hearth was part of AD B and ASD 7. The numbers on the stones are elevations and laja = stone and fogon= hearth.

The subfloor channels were solely present in Architectural Division B. They were associated with the elaborate hearth constructed in unit K13. There were two major channels and two small minor channels. These channels (Figure 6.27) were reminiscent of air ducts found in the main temple but were not quite as formally constructed or rigidly maintained as those features. The major subfloor channel in unit K14 had what the team's engineering expert referred to as a "french drain" style construction at its base. A "french drain" has a fill that permits water to run on top of the clay freely and it is constructed not with rock hard sediments but rather with softer sediments. The channel sloped south and west, following the slope of the entire sector. It initially could have carried water although the large wall to the north cut it off, thus in later times it may have been used for airflow.

Figure 6.27: K14 Channel. The channel, ASD 11, is covered with capstones, some of which has visible airspaces between them. North arrow is 20cm in length.

In summary AD B was the largest division uncovered during the 2005 La Banda excavation season and it was not entirely defined. ASD 9, the central patio, was the architectural center of the area and all of the other rooms radiated off of it. The southern edge of the AD still needs to be explored in order to determine if it is also bounded by a large wall and other pathways. The northern and western portions of this AD were enclosed by large walls while the eastern edge of the division still needs to be defined. Further investigations significantly upslope (east) of the AD will be difficult as there is significant overburden in this region due to the deposition of roadfill there in 2003.

6.2.3 Architectural Division C

Architectural Division C was the pathway (Figure 6.28) that ran east to west in the northern edge of the excavations. Pathways were present in various areas in La Banda. In 2003 John Wolf and his team found pathways that were walled that ran between houses. These pathways were both narrow and wide but were generally wide and surrounded by high walls. In 2005 we only excavated one major pathway, Architectural Division C. This pathway was similar to other pathways undercovered in 2003 in the excavations directed by John Wolf (personal communication). These pathways flowed between major walls and did not have formal floors at their base. The pathways used by the people passing between various buildings and as such there was trash and other domestic material randomly deposited on them. There were greater densities of wood and other trash types in the pathway than on patio surfaces.

Figure 6.28: Pathway (A.D. C). North arrow is 20cm in length.

This architectural division was the pathway that ran between structures. The lack of living space in this area made it distinct from the other ADs. The pathway continued outside of the AD and its entire course was not charted. The pathway ran from the NW of unit G16 to the SE of unit L15, and it ran through all of units J16, and portions of units J15N, K15N, and L15N. The two large stone walls that border the pathway were the largest walls recorded in the 2005 La Banda excavations.

The vertical stratigraphy of AD C was similar in all four units. In three of the units, H16N, K15, and L15 we excavated down to level VI. In unitJ16 we excavated down to level VIII (Figure 6.29, level six in figure). There were compact floors encountered in the pathway but no large formal clay or stone floors like those found in ADs A and B. In J16 the lowere levels encountered the base of the south large stone wall that defined the pathway. There was cultural material in all of the levels of this AD.

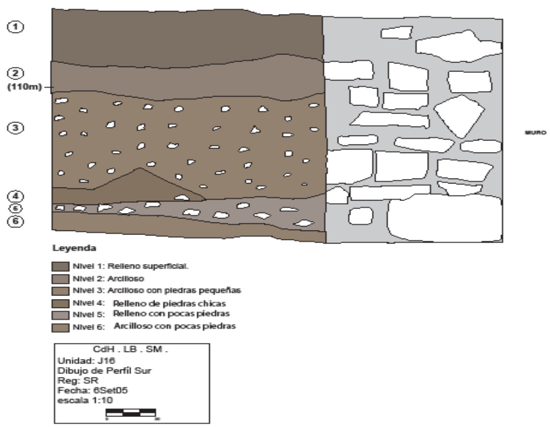


Figure 6.29: Unit J16 South Profile.

The pathway contained artifacts of all major types. In lower levels there were increasing densities of charcoal, a possible indicator that waste was deposited in this space. There were no large continuous formal floors found in this AD, which was distinct from the other ADs. The lack of formal floors meant that people would have made the sediment compact by walking upon it and the elevation of the pathway would have changed as more waste was accumulated in the area. There were more than six levels recorded in some of the units in this AD, see the profile of unit J16 below.

This pathway was similar to other pathways uncovered in the 2003 excavations which are the central subject of John Wolf's dissertation (n.d.). The large walls that enclosed the pathway demonstrate that the process of obscuring lines of sight and delimiting the options of pedestrians was not solely an architectural trait of the monumental core. These large pathways flow between living and working space and prompted John Rick to refer to the La Banda sector as a proto-urban settlement. The exact extent of the pathway should be the subject of future work as the length of large pathways will help us understand how the inhabitants and visitors to the region flowed through and in between the buildings in the area.

6.2.4 Architectural Division D

This Architectural Division was only uncovered in small portions of unit G13 and G14. The western portion of these units was outside of the large wall that defined the western edge of AD A. Unit G14 (Figure 6.30) was the larger portion of the AD and it was a rubble fill that contained stone and large lithic artifacts, G14 VI Features #1 and 2, which are described in the following chapter. The fill, G14 V western quadrangle as well as levels VI-VII, was a unique find and was not similar to other features in other ADs. The limited amount of space excavated in this sector meant that we could not define the use and spatial boundaries of the AD. It is possible that there is not formal architecture in this AD as excavations in 2003 further to the west did not reveal formal Black and White Stage architecture.

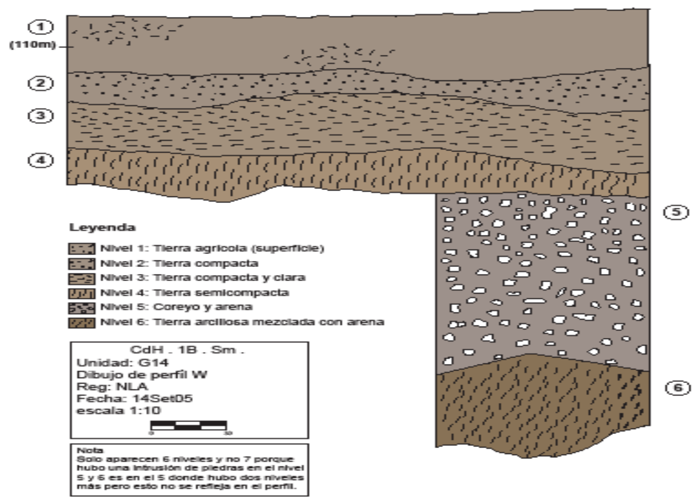


Figure 6.30: Unit G14 W Profile

6.3 Radiocarbon Dates

There were six radiocarbon samples from the 2005 excavations in the La Banda area that were run by Beta Analytic, AMS standard delivery. The six dates overlap significantly. The average date was Cal BC 755, 2 sigma calibration. This date nearly falls into every single sample's 2 sigma range. The proximity of all of these dates to one another is not a random pattern. This period of time in the Andes has a difficult curve in the radiocarbon record and the curve is often flat in these time periods (Bronk Ramsey 2001; McCormac, Hogg et al. 2004). These close dates lend weight to the claim that this portion of the La Banda Region was constructed and lived in over the course of a limited number of years that could be counted in generations of inhabitants. Unfortunately, these dates fall into the long plateaus that exist in the southern hemisphere radiocarbon curve between 800 – 600 BC calibrated (Whitehead 1999:21).

Table 6.2

Sample #	Meaured Radiocarbon Age	Conventional Radiocarbon Age	Calibrated date, 2 sigma
Beta -224479	2430 +/- 40 BP	2450 +/- 40 BP	Cal BC 760 to 400
Beta -224480	2630 +/- 40 BP	2660 +/- 40 BP	Cal BC 900 to 790
Beta -224481	2710 +/- 40 BP	2760 +/- 40 BP	Cal BC 1000 to 820
Beta -224482	2420 +/- 40 BP	2420 +/- 40 BP	Cal BC 750 to 680 and 670 to 610, and 600 to 400
Beta -224483	2590 +/- 50 BP	2620 +/- 50 BP	Cal BC 840 to 760
Beta -224484	2610 +/- 40 BP	2620 +/- 4- BP	Cal BC 830 to 770

6.4 Artifacts Recovered

Several classes of non-organic artifacts recovered during the excavations are documented here and in the Appendices. The remains from biological materials were discussed in the following chapter and elaborate artifacts that may have been used in rituals are discussed in the following chapter. Below are analyses of bulk ceramics, decorated ceramics, diagnostic ceramics, and lithics.

All of the artifacts discussed here were initially recovered from the screens. They were bagged in the field and taken to the laboratory for later analysis and possible reinterpretation. The bulk ceramics were undecorated body fragments, decorated ceramics included all ceramics with painted decoration or decorative incisions, and diagnostic ceramics were rim shards without decoration. One limit to these categories is the fact that shards from a single pot could be identified as all three ceramic types. The ceramics were counted and weighed in the laboratory and 87 % were bulk ceramics, 2% decorated, and 11% non-decorated diagnostic. Future ceramic research will analyze vessel types and examine the relationship between these ceramics and food production. Additionally, there is need for further analysis of ceramic style as it relates to site chronology.

6.4.1 Undecorated body ceramics

Bulk ceramics, undecorated body fragments, were not collected in the first level (plow zone) of excavation but were recovered systematically out of the screen for every following cultural unit level. Bulk ceramics were the most common material culture recovered, in count and weight, during the excavation. Appendix A contains the count and weights of the bulk ceramics from all unit levels of the 2005 excavations in La Banda.

The density of ceramics was determined by dividing the weight of ceramics recovered by the volume of sediment excavated. Counts were not used as these could be dramatically influenced by post-depositional events and shard size. There was great variability between areas with dense ceramic deposits and those without them. The density ranged between 23 and 0 grams per liter and there were only six unit levels with densities greater than 10, out of 145 samples. There were 51 samples with density values between 2 grams per liter and 10. The smaller samples were less than two grams per liter, and there were 88 samples out of 145 samples. The unit levels with higher densities were the middle levels (III and IV) and the upper and lower levels (I, II, V-IX) had densities less than one. The significant number of unit levels with densities less than 2 grams per liter indicates that outside of the levels with significant occupation components the density of ceramics was low.

AD A did not have a unit level with a ceramic density greater than five making this the region with the lowest density of ceramics. There was only one unit level with a density value greater than 3, G13 III, with a density of 4.24 g/L. The low density values in this AD were similar to the densities of macrobotanical remains in the division.

AD B had six unit levels with the density ceramic density values which were all greater than 10 grams per liter. These values came from levels III and IV in AD B (unit levels J14IV, J15III, K12IV W, M12IV, N13III, and L14III). All of these unit levels were located north and south of the central patio floor. All of the densities from these unit levels can be compared to the macrobotanical results in the following chapter. There was significant overlap between the densest bulk ceramic values and the unit levels that contained macrobotanical remains and dense wood density values. There were eleven unit levels with ceramic density values between five and ten grams per liter. They were M13III, M12IV N, L13III, N12IV, N12III N, K12IV N, L11III, K11III, M13II, L11II, and N13IV. These unit levels were also in AD B and were on or surrounding the patio floor. The majority of the units on the AD B patio floor had densities between 1 and 10, with many concentrating between 4 and 6. This medium level of ceramic density was indicative of quotidian activities but the denser values indicative were in unit levels off of the patio.

The pathway, AD C, had unit levels with densities less than five. The fact that this AD had medium densities of ceramic deposits indicated that ceramics were not permanently deposited outside of use areas. The pathway contained medium density levels of bulk ceramics, meaning that it was sparsely filled with broken pots. Ceramics were kept closer to living spaces and were reused.

6.4.2 Decorated and non-decorated diagnostic ceramics

The decorated and diagnostic ceramics were separated from the bulk ceramics in the initial sort. The counts and weights of these ceramics are documented below, by unit level, in table 6.3. The majority of decorated ceramics were stylistically part of the Janabarriu tradition. See Figures 6.31-6.34 for examples of decorated Janabarriu and Chavín style ceramics from La Banda. The classic Chavín style polished blackware that has been associated with the Early Horizon across the central Andes was found in all of the ADs. This ceramic type is not only widespread it has been considered linked to elite activities. Finding it in the domestic areas suggests that it was used in household ceremonies or that it had widespread purposes outside of ceremonial use. The drawings of rims, borders, and decorated sherds were completed in the field.

Figure 6.31: L14 III, small squares are 1cm and large squares are 2cm.

Figure 6.32: L15 IV. Polished black ceramics with images of supernatural features, small squares are 1cm and large squares are 2cm.

Figure 6.33: J16 VI. Polished black and red ceramics with incised illustrations, small squares are 1cm and large squares are 2cm.

Figure 6.34: J14 IV. Polished and dimpled ceramics, small squares are 1cm and large squares are 2cm.

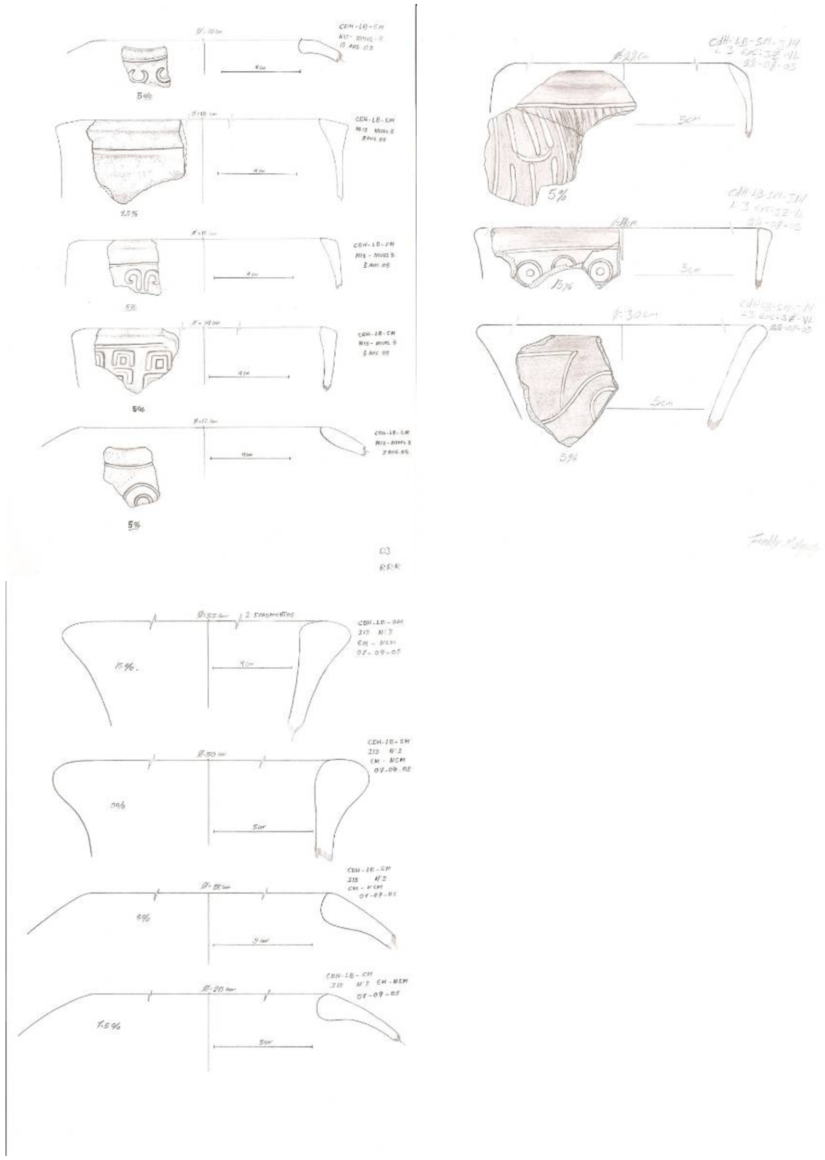


Figure 6.25: Drawings of diagnostic and decorated ceramics from La Banda. Drawings by Riemann Rodriguez and Freddy Melgarejo

There were high densities of decorated ceramics in all of the ADs. There were few unit levels in AD A with high levels of decorated ceramics. The exception was in unit H13IIIb. This large concentration of ceramics was in the southwest corner of the unit above the floor of ASD 3. In AD B the unit levels with high concentrations of decorated ceramics were generally off of the patio floor. However, ASD 9 was a unit level on the patio with high densities of decorated ceramics. Unit level L11III had a high density value and it was the living surface of the floor. This presence of decorated ceramics on the floor was such an anomaly that it was noted in the level notes. In AD C the unit levels with high densities of decorated ceramics were L15IV, L15V, L15VI, J16III, J16V, J16VI, and J16VII. These lower levels of the pathway contained high levels of decorated ceramics and relatively lower levels of bulk ceramics. This difference means that certain types of ceramics were likely to be broken or left in the pathway but there was not an abundance of general deposits in the area, meaning that the pathway was kept relatively clear of obstructions.

The non-decorated diagnostic ceramics had density values from 4.7 to 0 grams per liter and there were twelve unit levels with a density greater than 1.0 g/L. AD A had one unit level (G13 II) with a density greater than 1.0 g/L as well as one unit level (G13 IV) with a density of 0.909 g/L. Unit G13 was directly west of the colored floor of ASD 3 but the unit did not have a painted floor. The relative lack of diagnostic ceramics in this AD was similar to the patterns found with all of the other ceramic types. There were twelve unit levels with densities greater than 1.0g/L and all but one of them were in AD B. All but two of the twelve unit levels with densities greater than 1.0g/Lwere from levels III and IV, they were unit levels M12II and L11II. Unit level M12 was actually level III as level II in M12 combined levels II and III. Unit L11II was partially above the patio floor and partially off of it. Area AD C did not have a unit level with a density greater than 1.0g/L. This pattern of less dense diagnostic ceramics in the pathway was similar to the patterning of other ceramic types.

Table 6.3: Unit Levels with high densities of Decorated Ceramics.

Unit	Level	Count	Weight	Soil Volume	Density
L11	3	15	90.5	855	0.105848
J15	2	13	67.4	570	0.118246
H13	3b	8	93	750	0.124
L14	2	21	100.5	800	0.125625
J12	3b- quad E	9	62.8	495	0.126869
J16	5	13	102	800	0.1275
M12	4	14	78.8	600	0.131333
M13	3	19	129.6	975	0.132923
J15	3	20	82.5	600	0.1375
J16	3	35	241	1260	0.19127
L15	3	17	127.4	630	0.202222
L14	3	56	312.1	1470	0.212313
J16	6	29	107.7	480	0.224375
L15	5	21	165	720	0.229167
J16	7	47	226.6	975	0.23241
I15	4	7	64.8	270	0.24
L15	4	40	466.6	1935	0.241137
J14	3	10	346.2	1410	0.245532
K12	4- quad W	5	117.5	405	0.290123
L15	6	21	195.6	525	0.372571
M13	2	10	704.3	800	0.880375
J14	4	36	181	75	2.413333

Table 6.4: Unit Levels with high densities of Diagnostic Ceramics.

Area	Unit	Level	Quantity	Weight	Density
CdH-LB-SM	M13	3	214	4589.7	4.707385
CdH-LB-SM	J15	3	80	1229.9	2.049833
CdH-LB-SM	J15	3- West	39	1433.6	1.792
CdH-LB-SM	J11	3- West	19	1268.2	1.58525
CdH-LB-SM	M12	4-North	50	1232	1.54
CdH-LB-SM	L11	3	66	1280.5	1.497661
CdH-LB-SM	H16	3	56	1200	1.481481
CdH-LB-SM	K12	4	9	493.5	1.370833
CdH-LB-SM	K15	4	86	895.1	1.217823
CdH-LB-SM	L11	2	46	709.3	1.182167
CdH-LB-SM	G13	2	42	841.3	1.058239
CdH-LB-SM	M12	2	44	1320.5	1.023643

6.4.3 Lithics

The lithics discussed here were the common pieces. All of the lithics were recovered at the trowel's edge or in the screens. The counts and weights of all lithics are in Appendix B. Further work will analyze lithic construction, use typologies, and raw material sourcing. The lithic pieces were predominately constructed from obsidian, chert, flint, and andesite. There is further discussion of elaborate lithics in Chapter 8, the discussion of crafts and production.

Quantitative analysis of the lithic sample was limited as the generally low and divergent counts and weights greatly skewed the density values. The majority of unit levels did not contain lithics and there was no unit level with more than eight lithics. The unit levels with three or more lithics are listed below in Table 6.5. These eight unit levels were in AD A and B. In AD B none of the levels dense in lithics were on the patio floor, rather they were in the rooms off of it. In AD A the unit levels dense in lithics were G12IV and H13III which were both levels associated with the living surfaces of the clay floors in ASDs 2-4.

There were individual lithics that weighed as little as 0.5g and as great as 2390.7g. The lithic tools with a mass greater than 1000g (large pieces) were in unit levels: L15II, N12IV, J13V, N12IV, and J12IV W. While one of these unit levels was in

AD C it was from level II which was before the top of the pathway wall was encountered. The rest of the unit levels were from units to the west and north of the patio floor in AD B. There were also singularly large lithics pieces from the space to the west of AD A which will be discussed in Chapter 8.

Table 6.5: Largets Lithics Recovered by mass.

Area	Unit	Level	Description	Count	Weight
CdH-LB-SM	M13	4		3	626.8
CdH-LB-SM	K11	3		3	171.3
CdH-LB-SM	J14	4-north Feature 1	conglomeration of artifacts	4	1597.6
CdH-LB-SM	H13	3		4	2044
CdH-LB-SM	J15	3		4	1914.4
CdH-LB-SM	G12	4		5	32
CdH-LB-SM	L13	4		5	122.7
CdH-LB-SM	J15	4		8	470.5

Area	Unit	Level	Description	Count	Weight
CdH-LB-SM	L15	2		1	1516.8
CdH-LB-SM	N12	4		1	1066.7
CdH-LB-SM	J13	5		1	1265.1
CdH-LB-SM	N12	4	Artifact #1	1	1039.2
CdH-LB-SM	J12	4b-quad W		1	2390.7

6.5 Conclusions

In this chapter I presented the excavation data from the 2005 La Banda season. These excavations uncovered a portion of an extensive domestic settlement in the La

Banda sector. There were four major architectural divisions excavated and I analyzed relevant archaeological materials from all of them. The next chapter will present the data from the archaeobotanical analysis.

Chapter 7: Analysis of Archaeobiological Materials

In this chapter I analyze the archeobiological materials recovered during the excavations at La Banda. These materials fall into two classes: botanical and faunal. One of the questions about life at Chavín was past plant use and thus there was more intense investigation of the different plant types recovered at the site. The two main types of botanical analysis conducted were macrobotanical and phytolith analysis. The macrobotanical analysis will be presented first and then the results of the phytolith analysis will be presented.

After presenting the botanical data I will present the faunal data. This analysis will be followed by an analysis of food production and food use in La Banda. These data will be analyzed as part of a broader discussion of domestic life, historical ecology, exchange and production. These themes appear throughout the dissertation and it should be clear that plant and animal data are crucial for discussions of daily life

7.1 Past Plant Use

The methods for analyzing past plant use are well documented (Hastorf and Popper 1988; Pearsall 2000; Piperno 2006). What follows is a discussion of the methods that I employed to collect the comparative sample, macrobotanical samples, phytolith samples, and faunal samples. Some of these samples were collected in conjunction with other archaeological materials, such as ceramics, lithics, and other artifacts. The macrobotanical remains are presented from all of the sectors of the site whereas the phytolith and faunal remains were solely analyzed for the La Banda sector. This focus on the La Banda sector is carried on in the final sections when I return to discussing food and food production. Finally, the agricultural and pastoral practices of the peoples of Chavín are subjects of debate (Burger and Merwe 1990; Miller and Burger 1995; Stahl 1999; 2000; Valdez 2000) and the material presented in this chapter should serve to clarify some of these discussions.

7.1.1 Plant Collections

In 2006 I collected modern reference plants in the Callejón de Conchucos. The Peruvian permit, No. 0066-2006-INRENA-IFFS-DCN, specifically prohibited collecting inside of the Huascaran National Park and this requirement led me to collect plants in sectors outside of the park. This limitation did not prevent me from being able to collect in most of the major environmental zones in the sector around Chavín. The locations of the collected plants were noted in journals along with their GPS coordinates. All collected specimens were photographed (Figure 7.1) and placed in newspaper and initially preserved using a mixture of alcohol and water. At the end of the day they were placed in a plant press. Later the samples were dried in a plant dryer in the Museo de Historia Natural Javier Prado in Lima, Perú.

Figure 7.1: *Phragmites australis* collected in field. A foreign plant.

The goal of this plant collection was to gather a representative sample of the local flora that included both native and invasive species, primarily wild taxa. I also attempted to collect plants that thrive in disturbed environments and other sectors impacted by human activities. An effort was made to collect plants with seeds but this was not always possible. All species identifications were confirmed by Prof. Asunción Cano of La Universidad Mayor de San Marcos. All species' location, date of collection, and altitudes were recorded on collection forms (Appendix E). These data were then entered in an Excel database. All forms were entered in the database the same day of their collection and this information was supplied to the Museo de Historia Natural, along with voucher copies, as per regulations stipulated by INRENA.

7.1.2 Poaceae Collections:

In addition to my own collections I was fortunate enough to receive 56 additions to my collections from the Universidad Mayor de San Marcos. These species were requested for their utility in constructing a comparative collection of phytoliths of the sector. Professors Asuncion Cano and María Isabel La Torre were responsible for conducting a plant collection survey near the Antamina Mine in San Marcos, Ancash. Their survey transects were spaced 10 m apart and descended from the highest points in the area down to the modern town of San Marcos. The complete collection is housed in the Museo de Historia Natural Javier Prado. The replica species added to my collection were all members of the Poaceae Family. All species identifications were double checked by Prof. María Isabel La Torre, a noted expert on Andean grasses.

7.1.3 Macrobotanical Remains

Macrobotanical remains are the traditional focus of archaeobotany because they are commonly encountered in excavations. Although the field has greatly expanded its means of analysis in the past decades (Pearsall 2000) the fact that people can see seeds means that they are considered reasonable objects for collection.

Macrobotanical remains are preserved plant material found in archaeological contexts. Preservation can occur through a variety of means: most commonly by burning and changing material state but also via water logging, freezing, and drying. These remains can be recovered by a variety of means, the most common being dry screening or flotation (Pearsall 2000). Dry screening is common in desert sandy contexts where materials could be damaged by the introduction of water. Flotation is common in most other sectors where water serves to float the carbonized remains of plant. Carbonized plants generally have a specific density less than that of water (1.0g/cm) and thus can be separated relatively easily separated from the soil matrix by the introduction of water. In the Peruvian highlands most researchers use water flotation to separate macrobotanical remains from soil as the local climate regime is seasonally divided into a wet and dry season and it is not common for non-carbonized macrobotanical remains to preserve (Pearsall 2000).

2005 Field Paleoethnobotany Procedures

7.1.4 Sediment Collection Strategy for Flotation Samples:

In the 2005 Chavín field season I decided to collect a sediment sample from every level of every unit excavated. This procedure is known as blanket sampling (Hastorf and Popper 1988). This was done in order to ensure that we obtained an accurate representation of botanical deposition events.

The 2005 process was part of a broader program of emphasizing the normality and necessity of conducting botanical analysis. Throughout the field season it became as normal for the field crew and dig directors to request additional bags for flotation samples as it was to request additional bags for ceramics. In all over 500 samples were collected from all of the different excavation sectors across the site of Chavín. However, there were instances when excavators neglected to collect samples.

I analyzed every floated sample from the 2005 La Banda excavations in order to have a broad database of horizontally comparable samples. This level of complete analysis was not possible for all other sectors excavated at Chavín in the 2005 and other field seasons. The other sectors were randomly and strategically sampled following the goals of the five other excavation sectors (Appendix F). These different collection strategies will be outlined as each sector is presented.

The field collection strategy at Chavín that I implemented for the Stanford Archaeological project at Chavín followed standard North American procedures (Hastorf and Popper 1988). Each level had at least one bulk sample taken from a single location (x,y,z plotted). Each ideal sample was 20L, collected in two 10L plastic bags. This ideal volume of sediment was deemed necessary as previous collections in the sector revealed that macrobotanical preservation was sparse. In 2003 and 2004 samples were floated using the newly constructed flotation machine, which is described below. The samples averaged roughly 3L of sediment yielded an average of roughly 100 remains per sample. The samples were dominated by wood but many of the samples were from later time periods and as such contained greater numbers of food remains. The decision was made to collect 20 L samples in the 2005 season in order to reach the desired density of greater than 541 remains per sample (van der Veen and Fieller 1982:295).

In 2005 the 20L samples had an average number of recovered remains per samples was less than 541 per sample, which has been defined as the number necessary on which to run robust statistical analysis (van der Veen and Fieller 1982). The large quantity of sediment needed per sample meant that many of the samples were recovered from across a greater than 20cm square area. This is similar to the sampling procedure known as a "scatter" or average collection strategy sampling (Hastorf and Popper 1988; Pearsall 2000:17). In all instances the center of the collection area was recorded. All items within the sediment were added to the sample in the flotation bag including ceramics, bones, lithics, and other artifacts. These materials were removed and analyzed after flotation. In rare instances of unique finds or features, such as hearths, additional sediment samples were collected and at some points these samples were less than 20L in volume.

For all of the flotation samples pre-set information was recorded. This always included the archaeological sector and sector, unit, level, date, excavators' initials, and x, y, z location of the sample. Unit directors created two unique metal tags for each bag which were able to record pressure imprints as well as ink, thus eliminating the possibility of potential information losses due to water damage or other sorts of degradation. One tag was placed within every plastic bag containing 10L of soil and another was tied to the outside of the bag. The information was also written on the outside of the bag with a sharpie and recorded on the level forms. The bags were sealed with string after one tag was placed within the bag and one tag was tied to the outside of the bag. At the end of the day all bags were transported to storage areas in the monument or near the excavation area. The bags stored near the excavation areas were transported to the storage center at the monument at the end of every day. The bags were stored there until they were floated in October 2005.

7.1.5 Flotation Procedure

I employed a modified SMAP (Shall Mound Archaeological Project) machine (Watson 1976; Fritz 1988), which was constructed in 2004 and used to process samples that season. The same machine was employed in 2005 after excavations were completed. The machine was based on plans provided by Hastorf (1999). One modification of the machine was the addition of an inner screen to catch the rocks (Figure 7.2). The inner mesh was 0.5mm and was provided by Hastorf.

Figure 7.2: Flotation machine and component parts

1. All samples were briefly soaked in 10L buckets before being subjected to flotation. This loosened the soil matrix and increased the pace of processing as the modified SMAP machine could only process one 10L bucket at a time.

2. All relevant information (flotation number, volume of sample, date of processing, etc.) was recorded in the flotation log book which was recorded and backed up on the computer each night.

3. The machine was checked to see if everything is fully functioning. This means the water pump was bringing water from the cistern to the flotation machine and that the hose was operational. At Chavín we were fortunate enough to have steady access to a large volume of water from the town's water source. A 500L cistern was filled everyday with water and a running hose continuously refilled it. The flotation machine drained the water at a quicker pace than it was replaced but the extra amount of water in the cistern allowed us to continuously run the machine. Additionally, the cistern continuously refilled even when the flotation machine was not running.

4. After the flotation machine was filled with water the inner bucket was snugly placed inside the machine and the heavy fraction screen was placed on top of it. The water flowed out of the showerhead up through the screens and out the peak into the open bucket that had a new chiffon net pouch clipped into place. The chiffon net pouch will catch the carbon that flowed out of the machine and also allowed the water to flow through it onto the ground and out to the Wacheqsa River. The pouch was kept loose as it was fairly common for the chiffon to back up and almost overflow. When this occurred the inner bucket was removed, the

water was shut off, and the chiffon was allowed to drain. The chance that the chiffon would overflow was minimized by maintaining a light water flow and routinely checking for backup.

5. The metal flotation tag was added to the chiffon pouch in order to maintain a systematic and fluid organization of all relevant information. Additionally, each sample had its own unique flotation number that connected all of the sample's contextual information to its provenance that was fully recorded in the flotation log.

6. One bucket was added to the machine and the bucket was cleaned with the hose in order to ensure that all of the soil has been removed from the bucket and placed in the inner bucket. The soil was then agitated and the water volume was increased once it was certain that there was no carbon is escaping from the system. After sustained processing of the sample and the breaking up of clods and soil conglomerations, the inner screen containing the heavy fraction (rocks, ceramics, etc.) was removed and its contents were placed on top of the plastic bag that initially contained the sample. The heavy fraction was left to dry for the day before being returned to the plastic bag for later analysis.

7. At this stage the remaining soil had settled on the bottom of the bucket and could be agitated by hand. The silt and small granules that were smaller than the 0.5mm mesh at the bottom of the bucket fell to the bottom of the flotation machine. After all of the soil was processed through the bottom screen there was almost no carbon left in the water. The flotation crew continued to watch the sample in order to see if more carbon floated to the surface. If no more carbon appeared then the crew allowed the machine to run for two more minutes to make absolutely certain that the sample was completely processed.

8. Once no further carbon appeared at the surface of the water, the large inner flotation bucket holding the heavy fraction was removed from the machine and the smaller portion of the heavy fraction was placed on top of the plastic bag to dry.

9. Once this process was complete the inner screen was returned to the bucket and the second bucket of soil from the sample was introduced into the machine. The process was repeated.

10. The chiffon containing the carbon from the sample was now removed from the outer bottomless bucket. This wet pouch along with its identification tag was placed on a protected clothesline in order to dry. The chiffon contained carbon from both subsamples.

11. The flotation machine was generally emptied after processing ten samples due to sediment build up. The sediment at the bottom of the oil barrel was emptied next to the river and the entire machine was sprayed clean after emptying the sediment.

12. At the end of the day the dry heavy fractions were poured into one of the plastic bags and placed in the storehouse for analysis. If the heavy fraction was not dry it was laid out again the next day until the drying process was complete.

13. The light fraction needed more than one day to dry. Once dry the sample was poured out of the chiffon and onto a piece of white paper in order to be certain that all of the sample had been cleanly removed from the chiffon, then it was transferred to a plastic bag that was placed inside of another plastic bag for safekeeping. The tag was also kept in the plastic bag and the flotation number was recorded various times on the outside of the bag. These light double bagged samples were now ready for export.

7.1.6 Testing the Efficiency of the Flotation Machine

It is standard protocol in the Americas to test the efficiency of flotation machines by adding poppy seeds (which have a distinct surface morphology and are native to the Old World) to random soil samples. We added 50 or 100 carbonized poppy seeds once or twice a day to random samples. The positive results of these tests are contained in the data analysis section. Over the flotation season we had a recovery rate over 95% from twenty samples. The poppy seeds were present on the sorting sheets but are not included in the data analysis.

7.1.7 Exportation

The project co-director, Dr. Christian Mesias, secured permission for the samples to be inspected at the regional INC office in Ancash for exportation to the US. The INC authorities examined all 216 light fraction samples and double checked all of the documentation of the samples. This was a thorough process and two ceramic shards that accidentally entered one sample were removed and returned to the monument. Once this process was complete the samples were transported to the INC national office in Lima where they were inspected again. Finally, permission for export was granted and the samples were shipped to UC Berkeley in 2006 under the terms of a plant import permit granted to Dr. Hastorf and a soil permit of the Archaeological Research Facility.
Laboratory Analysis

7.1.8 Light Fraction:

All archaeobotanical analysis of the 216 macrobotanical samples was conducted at the UC Berkeley Paleoethnobotanical Laboratory, directed by Dr. Christine Hastorf. I was assisted over the years in the laboratory by a dozen undergraduate research assistants. Undergraduate students assisted in the sorting of samples but all final identifications were done by me with occasional input by Bill Whitehead, Alexandre Chevalier, and Maria Bruno. Specimens were identified using a Leica Wild M-11 Stereoscopic Microscope with a 6-50x magnification range. Illumination was provided by fiber optic illuminators. The following is a description of the process used in the laboratory to separate and quantify the macrobotanical remains present in the samples:

1. The sample is placed in the geological screens and separated according to the screen sizes of 2mm, 1mm, and 0.5mm.

2. These three sub-samples are then prepared for analysis. Each one is placed in a small box lined with a white paper underneath it. Each sub-sample is temporally labeled and separated.

3. The sub-samples are analyzed in descending order of size. The greater than 2mm fraction of the sample primarily includes wood registered in both counts and weight. The sorting sheet which details what is removed at each level is attached as appendix (G). In smaller size fractions wood is not removed or counted as it is difficult to identify in such small fractions and the fragmentation rate in the smaller size fractions is extremely high. The distinct categories recorded on the data sheet and the other differences in recording based fraction size will be explained below in conjunction with the image of the recording sheet.

4. Each pulled and identified specimen is weighted, counted, and recorded on the data sheet. Then all of the material from each category is combined into either a small plastic box or an archival grade gelatin capsule where it will be stored. Included in the gelatin capsule is a tag identifying the specimen's weight, botanical identification, provenience, and sorter's initials.

5. After all of the subsamples were sorted, the less than 0.5mm fraction was placed in a plastic bag to be stored with the identified specimens. The rest of the less than 0.5mm fraction was combined with the greater than 0.5mm fraction in the plastic bag. These fractions were combined to limit the amount of bags in the final storage box. If it was necessary to separate them again in the future this could be easily accomplished by pouring them through the geological screens a second time.

6. All final identifications were made with the assistance of various reference materials such as seed identification manuals, the Andean comparative collection of Dr. Hastorf, and seed identification websites.

7. The non-identified fraction and the identified specimens are all placed in a cardboard box which is labeled and the stored in a safe section of the laboratory. Any metal tag from the initial flotation bag is included in the box to maintain continuity in record keeping.

8. This process, known as a "full sort", was used in analyzing all of the samples floated and exported from the 2005 field season. In many instances macrobotanical samples are large enough to subdivide as they quickly reach a statistically significant number of remains. This was not the case with the samples recovered during the 2005 field season so it was necessary to do full sorts of all 216 collected samples.

9. Entered all counts and weights in excel database.

7.2 Qualitative and Quantitative Analysis

The macrobotanical data gathered during the 2005 excavation season are presented below. While the data are not robust enough for multivariate analysis it is appropriate to analyze the samples using more straight forward methods such as density, ubiquity, and relative taxa percentages. Additionally, there are clear examples of outlying samples and these samples are analyzed in conjunction with other lines of data in order to ascertain the possible reasons for sharply differential patterning in samples. One of the clearest instances of outliers is in the presence/absence of large quantities of wood in samples. There are orders of magnitude differences between different samples in the distinct sectors of the site.

There were 216 macrobotanical samples analyzed in this analysis. They come from six distinct sectors of the site (Figure 2.1). The number and quality of the samples varied greatly across the sectors. There were more samples analyzed from the La Banda sector as this was the central focus of my project. All of the other samples come from sectors excavated by other archeologists. The West Field and Area Sur were excavated under the direction of Dr. Daniel Contreras. The Wacheqsa sector was excavated under the direction of Dr. Christian Mesia. All of the other sectors were excavated under the umbrella of the Stanford Archaeology Project at Chavín under the direction of Dr. John Rick.

The samples were greatly impacted by differing taphonomic factors and Cultural and Natural Transforms (Schiffer 1987) meant that the samples from later time periods were generally better preserved (Tables 7.1 and 7.2). The Atrium samples came from a more recent time period and had notably better preservation. The macrobotanical samples analyzed in this dissertation come from six sectors of the site. Each sectors' results will be presented in turn ending with La Banda. Finally, I will compare the sectors across the site to place La Banda in context.

Table 7.1: Total Density of Samples with wood

Sector of site	Density (count/Ls)	Average volume of Samples	Number of samples and range of density	Qualitative assessment of samples
Wacheqsa (WQ)	43.800	5	Two samples much more dense than others	*Janabarriu* phase, dense but judgmentally collected
Atrium East (AE)	13.763	16.47	Many samples, well distributed	Post-temple deposits, systematically sampled
Plaza Mayor (PM)	3.870	18	Few samples, one much more dense than others	Some mixed temporal contexts, some fill
La Banda (LB)	1.096	16.66	Many samples, well distributed	*Janabarriu* phase, systematically sampled
West Field (WF)	1.037	16.27	Many samples, fairly well distributed	*Janabarriu* phase, systematically sampled
Area Sur (AS)	0.262	15.25	Few samples, one sample contains all remains	*Janabarriu* phase, few samples

Table 7.2: Total Density of Samples without wood

Sector of site	Density (count/Ls)	Average volume of Samples	Number of dominant samples and range of density	Qualitative assessment of samples
Wacheqsa (WQ)	1.657	5	One sample dominates	*Janabarriu* phase, dense but judgmentally collected
Atrium East (AE)	0.624	16.47	Many samples, well distributed	Post-temple deposits, systematically sampled
Area Sur (AS)	0.098	15.25	Few samples, one dominates	*Janabarriu* phase, few samples
Plaza Mayor (PM)	0.083	18	Few samples, two dominate	Fill and some mixed contexts
West Field (WF)	0.059	16.27	Many samples, well distributed	*Janabarriu* phase, systematically sampled
La Banda (LB)	0.035	16.66	Many samples, well distributed	*Janabarriu* phase, systematically sampled

7.2.1 Area Sur

There were four samples collected from this sector (Figure 7.3 and 7.4). The small sample size in this sector limits the possibility for solid quantitative analysis. This sector appears to date to the Black and White Period of temple development. As such the results are informative for analyzing general questions about subsistence and agricultural practice during temple times. The presence of a bean in these samples is interesting as they rarely preserve in macrobotanical samples, presumably because their relatively large size would make them easier to notice if they came within reach of a fire and a person or animal would have retrieved them.

In this instance we can also see that wood dominates the samples, although by a lesser overall percentage (62%) than in other sectors. The sample size from this sector is too small to make implications for the entire sector. The results from this sector further refine the contention that wood was prevalent across the site and was the primary means of providing warmth and cooking heat.

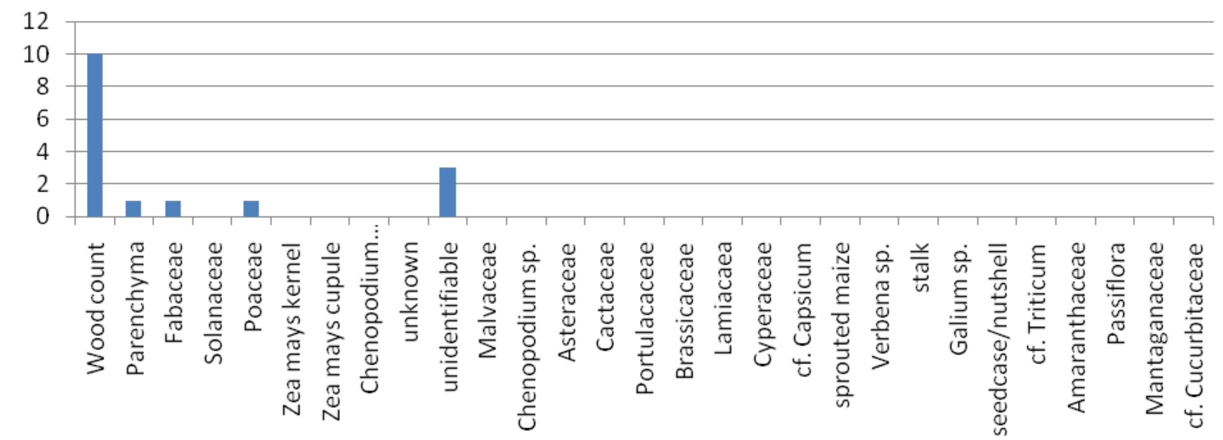


Figure 7.3: Area Sur Macrobotanical Remains with wood, N=4

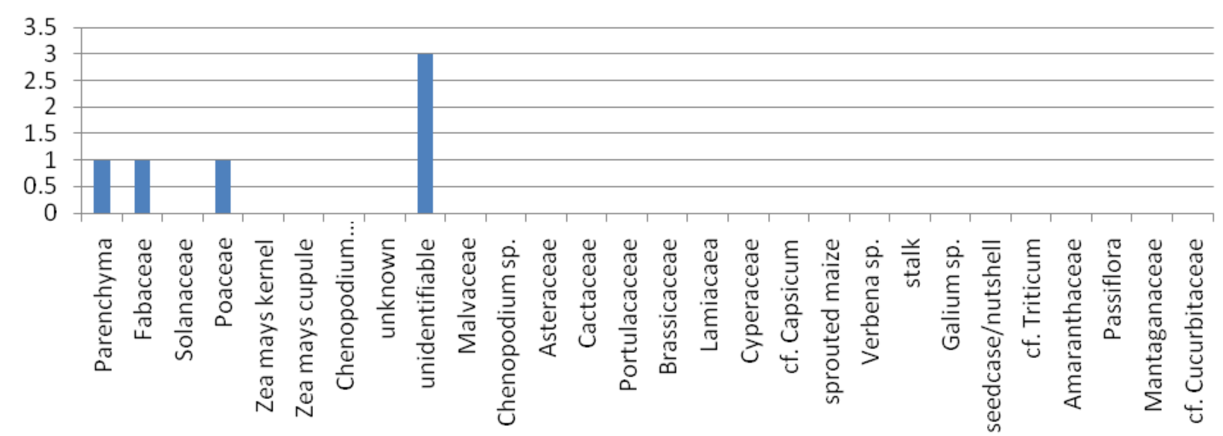


Figure 7.4: Area Sur Macrobotanical Remains without wood, N=4

7.2.2 Wacheqsa

The Wacheqsa sector is located outside of the main temple area but it is not separated from the temple by any of the dividing rivers. It does not appear to be a locus of monumental construction yet it was presumably a sector where large amounts of material were deposited during temple times. The macrobotanical record is 96% wood, which is a similar pattern to that encountered in other sectors. The sector is currently the site of many Eucalyptus plantings, which would not have been present in temple times. Most probably the wood brought into this portion of the site came from upslope areas.

The samples from this sector were selectively collected (Figures 7.5 and 7.6). There were few samples from this sector so all of the samples were floated. The floated samples had an average volume of 5L. The total density with wood reveals a number of patterns. The remains from the Wacheqsa sector are over three times as dense as the remains recovered from the second densest sector, the Atrium East. The selective collection of these samples makes it difficult to compare these samples to those gathered in other sectors but it does lead to the conclusion that it would be worth performing greater Paleoethnobotanical research in the Wacheqsa sector as it is possible that this is a sector where a great deal of remains from activities in the main temple were deposited.

The seeds recovered in these samples are more diverse than seeds recovered in other sectors of the site. The large number of beans found could indicate that this sector exhibited different food preparation or storage practices than those encountered in other sectors of the site. In addition, the possible recovery of squash seeds revealed that this portion of the site contained preserved remains of larger seed remains. These larger seeds may not have preserved in more domestic areas of the site where there would have presumably been greater movement of people and animals throughout the day.

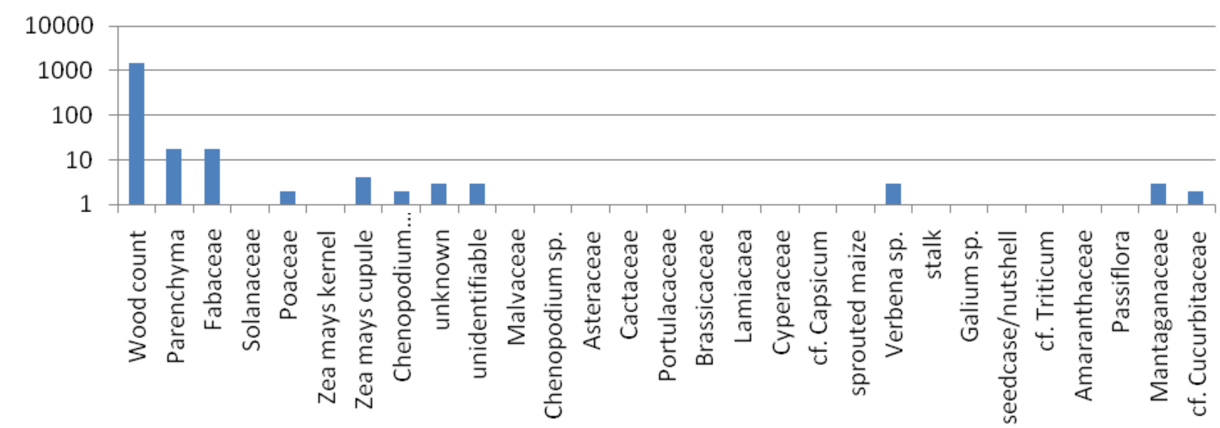


Figure 7.5: Wacheqsa Macrobotanical Remains with wood, N=7

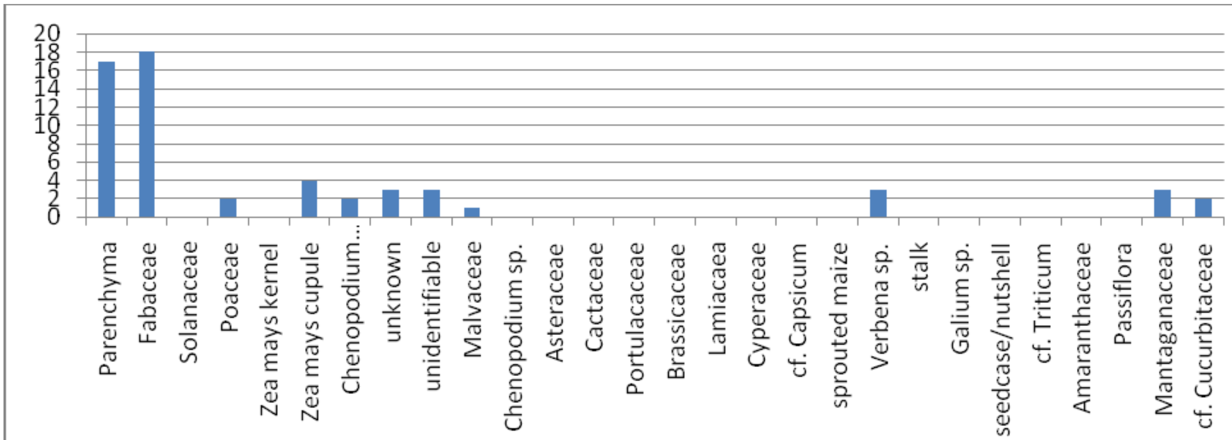


Figure 7.6: Wacheqsa Macrobotanical Remains without wood, N=7

7.2.3 Plaza Mayor

The Plaza Mayor samples were the most problematic samples to analyze in terms of their archaeological history. This sector has undergone significant architectural transformations both during and after temple times. While this complex history does make interpretation less simplistic the samples from this sector still fit into the broader patterns that exist across the site. In this instance 98% of the macrobotanical remains are wood and the remaining materials recovered are typical botanical remains for the site (Figures 7.7 and 7.8). The maize cupule does indicate that food may have been consumed in the temple area while building the main temple, rather than consumed in a sector outside of the main temple. The parenchyma remains may also indicate that food was consumed on site during construction events, however further dating of these samples is needed to ascertain whether or not this claim is valid.

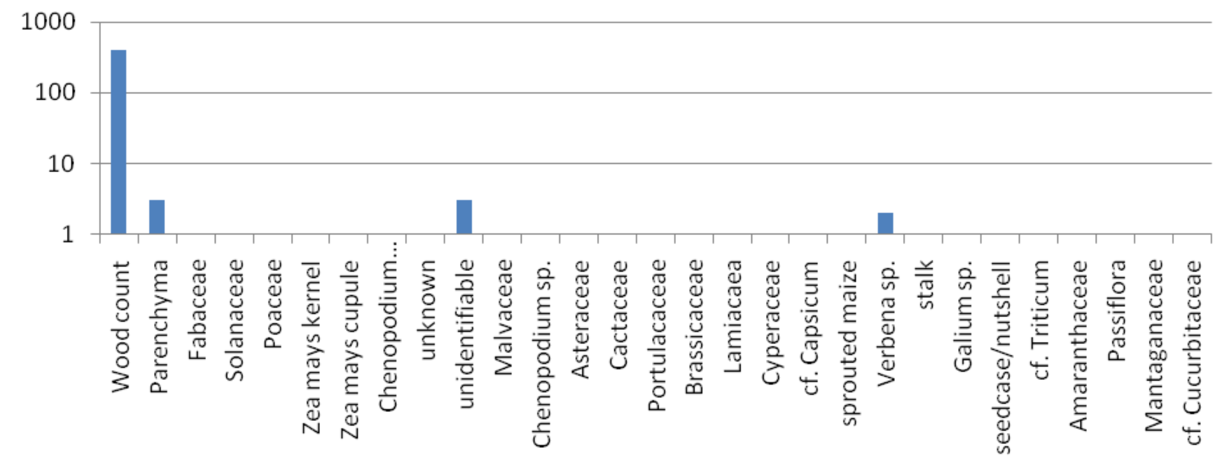


Figure 7.7: Plaza Mayor Macrobotanical Remains with wood, N=6

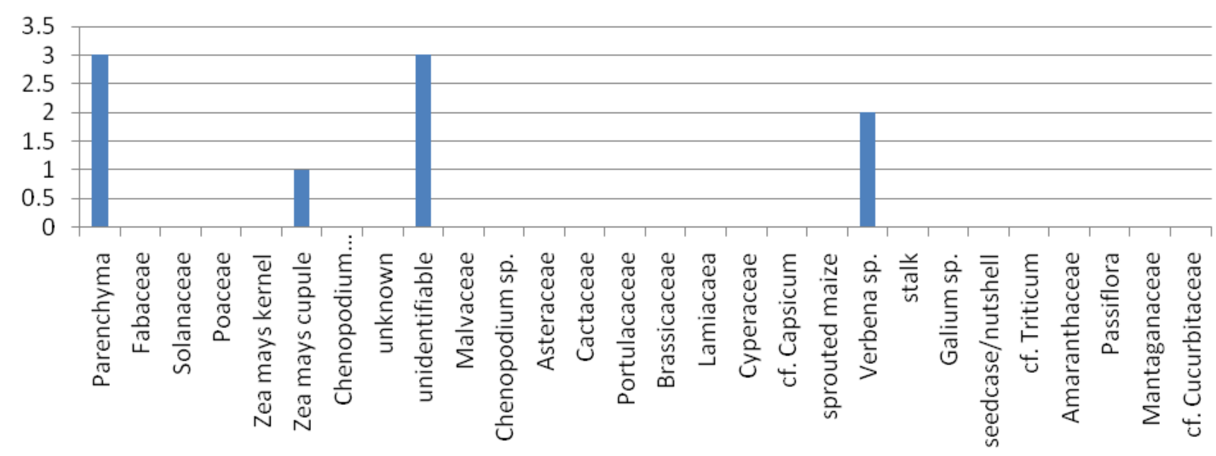


Figure 7.8: Plaza Mayor Macrobotanical Remains without wood, N=6

7.2.4 Atrium East

The material recovered in the atrium sector is almost entirely post-temple. This area is located in the approach to the circular plaza, and it was also occupied in post-temple times. These settlements are less formal than the earlier constructions that occurred during temple times. The depositional history is the most likely reason that the samples recovered in this sector exhibit greater diversity and greater numbers of recovered remains. However, it should be noted that the relative percentage of non-wood remains does not significantly deviate from the patterns found in other sectors of the site.

The samples from the Atrium are 94% wood (Figures 7.9 and 7.10). This result indicates that there was not significant deforestation that occurred during and after Chavín times. While the temple period was presumably a time of increased resource use, as compared to post-temple times, it does not appear that the constructors of the temple harvested all of the easily accessible wood. Further refinement of the chronology of this portion of the site would enable us to further analyze the transition from temple to post-temple occupations not only in terms of resource use but also in terms of food production and practice.

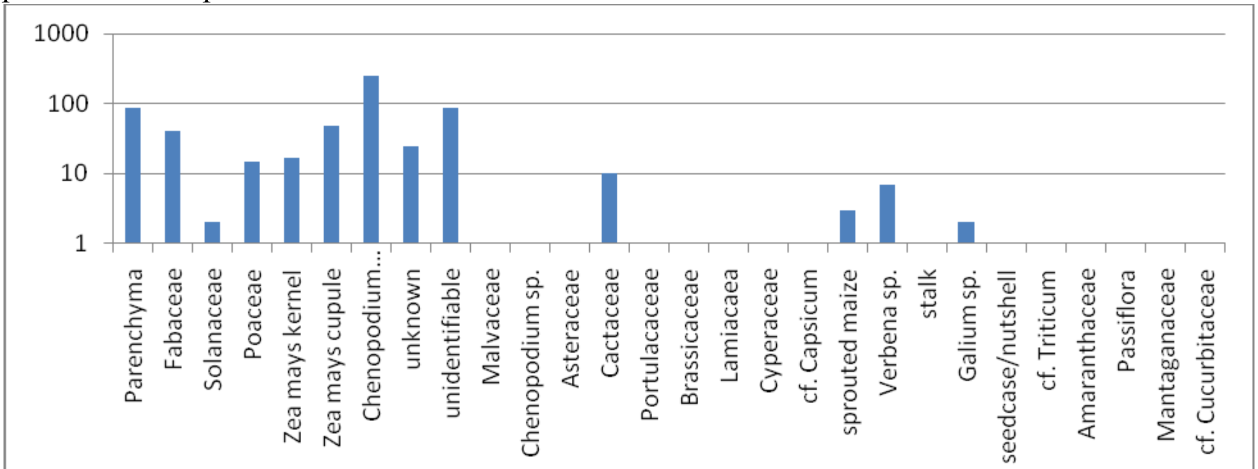


Figure 7.9: Atrium East Macrobotanical Remains without wood, N=57

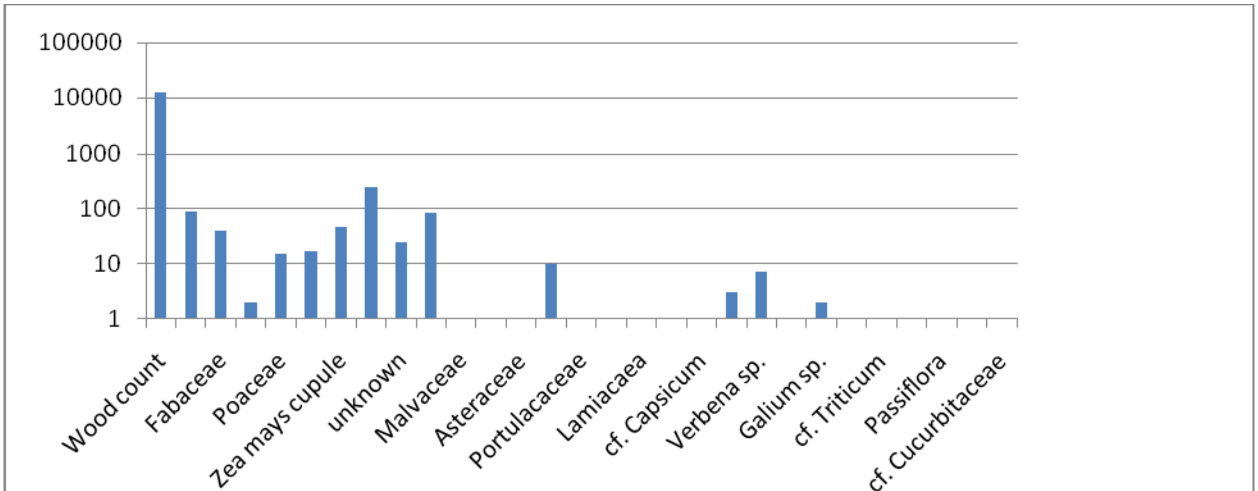


Figure 7.10: Atrium East Macrobotanical Remains with wood, N=57

7.2.5 Rocas:

This area was only lightly excavated as the central goal of this research was to define the extent of the canal and determine the stability of the roof. There were remains washed into the canal so the presence of chenopodium here may not be indicative of food directly consumed in the canal (Figure 7.11).

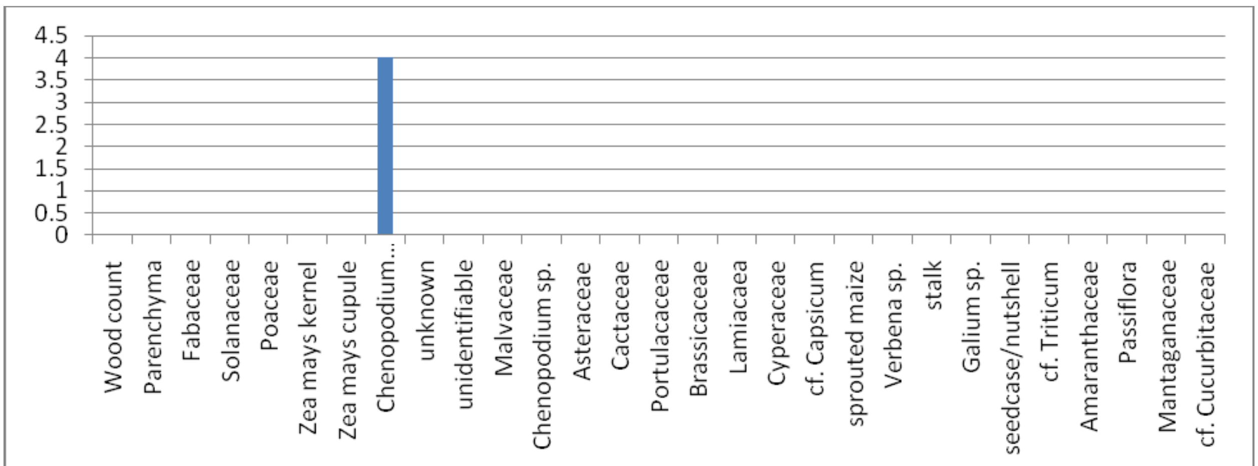


Figure 7.11: Rocas Gallery Macrobotanical Remains, N=1

7.2.6 West Field

The West Field is a sector that generally dates to the Black and White Period of the temple. The samples from this sector are 94% wood and reinforce the defining pattern of samples from the site. After removing wood from the samples the most prominent remains are parenchyma, grass seeds, and unknown/unidentifiable. While there are outliers in these samples, i.e. the possible *Capsicum* sp. and *Triticum* sp., there may be some contamination that entered some of these samples. The possible wheat is the clearest example of this possibility as it is a post-conquest plant. While consultation with Dan Contreras seemed to disprove the possibility that some of these samples were from post-conquest units the botanical remains means that one sample should be carefully re-examined when making contentions about the sector. Other than this one sample all of the samples from the sector contain only pre-conquest plant remains.

The samples from this sector produced two maize cupules which is also a possible indicator of differential patterning across the site (Figure 7.12 and 7.13). After removing the wood samples from the analysis cupules end up representing 6% of the samples, a large size for Chavín excavations where macrobotanical remains of maize are rare. The cactus present in this sample does not appear to be from the San Pedro cactus.

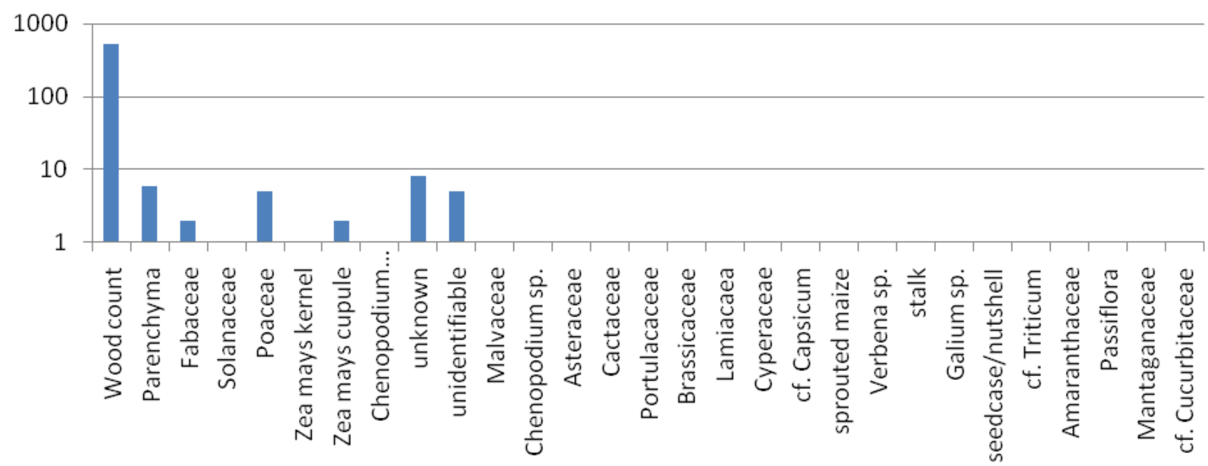


Figure 7.12: West Field Macrobotanical Remains with wood, N=33

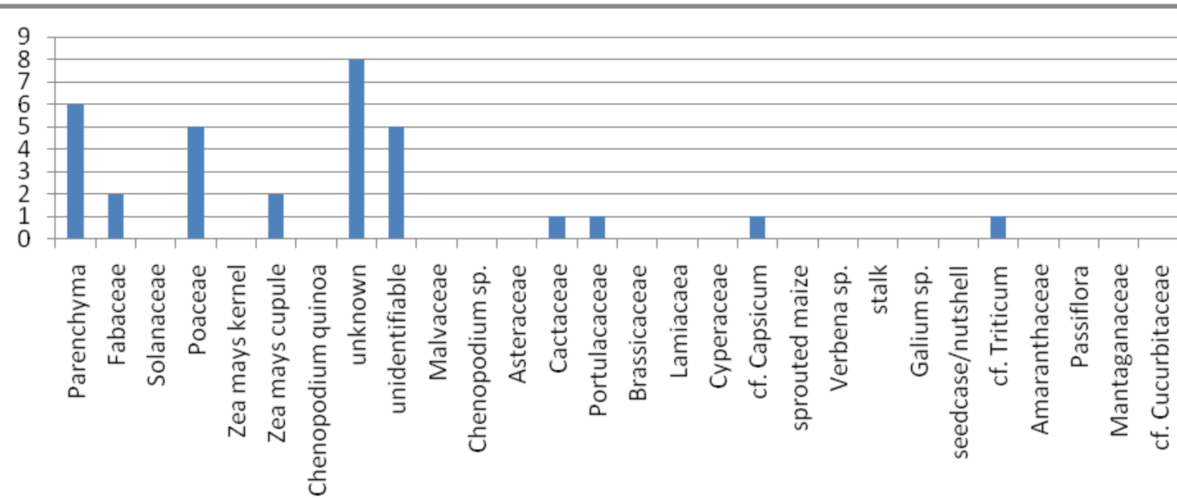


Figure 7.13: West Field Macrobotanical Remains without wood, N=33

7.2.7 La Banda

In the La Banda sector 97% of the recovered remains are wood (Figures 7.14 and 7.15). Many of the samples did not contain any identifiable remains other than wood.

This dominance of wood in the material record is mirrored across the entire site. What does stand out from the non-wood remains is that this sector of the site had a typical highland diet, most likely produced in the fields that surround the settlement. The quinoa, parenchyma, and other remains are all from local plants. The lone representation of a maize cupule is corroborated by the macrobotanical record from other sector, which indicates that maize was consumed at the site.

These remains reinforce the interpretation that this sector was part of a domestic sector. However, it was not a uniform domestic sector but an area with varying purposes. There were portions of the sector excavated in 2005 that appeared to be dedicated to ritual goods production, such as ASD 7.

The range and variability of taxa recovered in La Banda was small (Figure 7.14). The two most common non-wood taxa were parenchyma and Poaceae (grass family). Parenchyma is storage tissue from the interior of a tuber or another underground storage organ. In the central Andes these remains are most likely from potatoes (*Solanum sp.*) or oca (*Oxalis tuberosa*). The grass seeds could have arrived at the site as food or as weeds. The remains recovered here were similar to those found in the West Field but it different from the samples from Atrium East and sectors with small numbers of samples analyzed.

Each sample was analyzed to see variability across the site. In the next major section of this chapter, 7.3, I will analyze different areas of the La Banda sector. There I compare the patio area to the pathway to distinct rooms. Finally, there were many samples with no remains in them. This is in contrast to the patterns found in many other Andean archaeological projects where the ubiquity of wood is 99% (Bruno 2008:261).

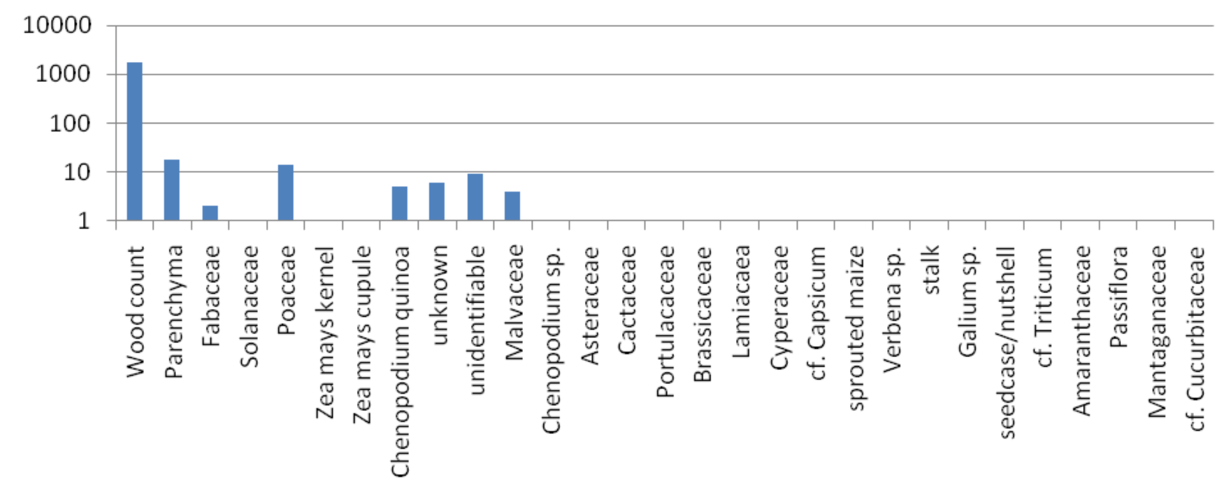


Figure 7.14: La Banda Macrobotanical Remains with wood, N=106

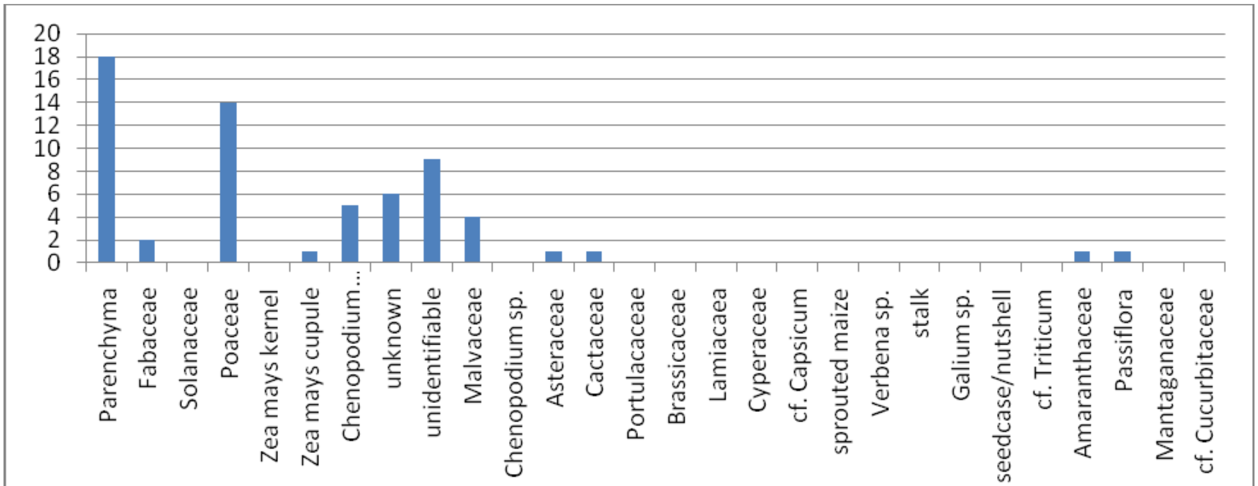


Figure 7.15: La Banda Macrobotanical Remains without wood, N=106

7.2.8 Chavín de Huántar Site Sectors:

The next two figures (7.16 and 7.17) summarize the finds from across the site sectors. This image demonstrates that all of the sectors' remains were dominated by wood but some sectors, such as the Atrium East, contained a greater diversity of remains than others. This is most likely due to its lesser antiquity and less time for the natural environment to degrade the remains. The pie charts present data that was also presented in the bar graphs in the above sections 7.2.1-7.2.7.

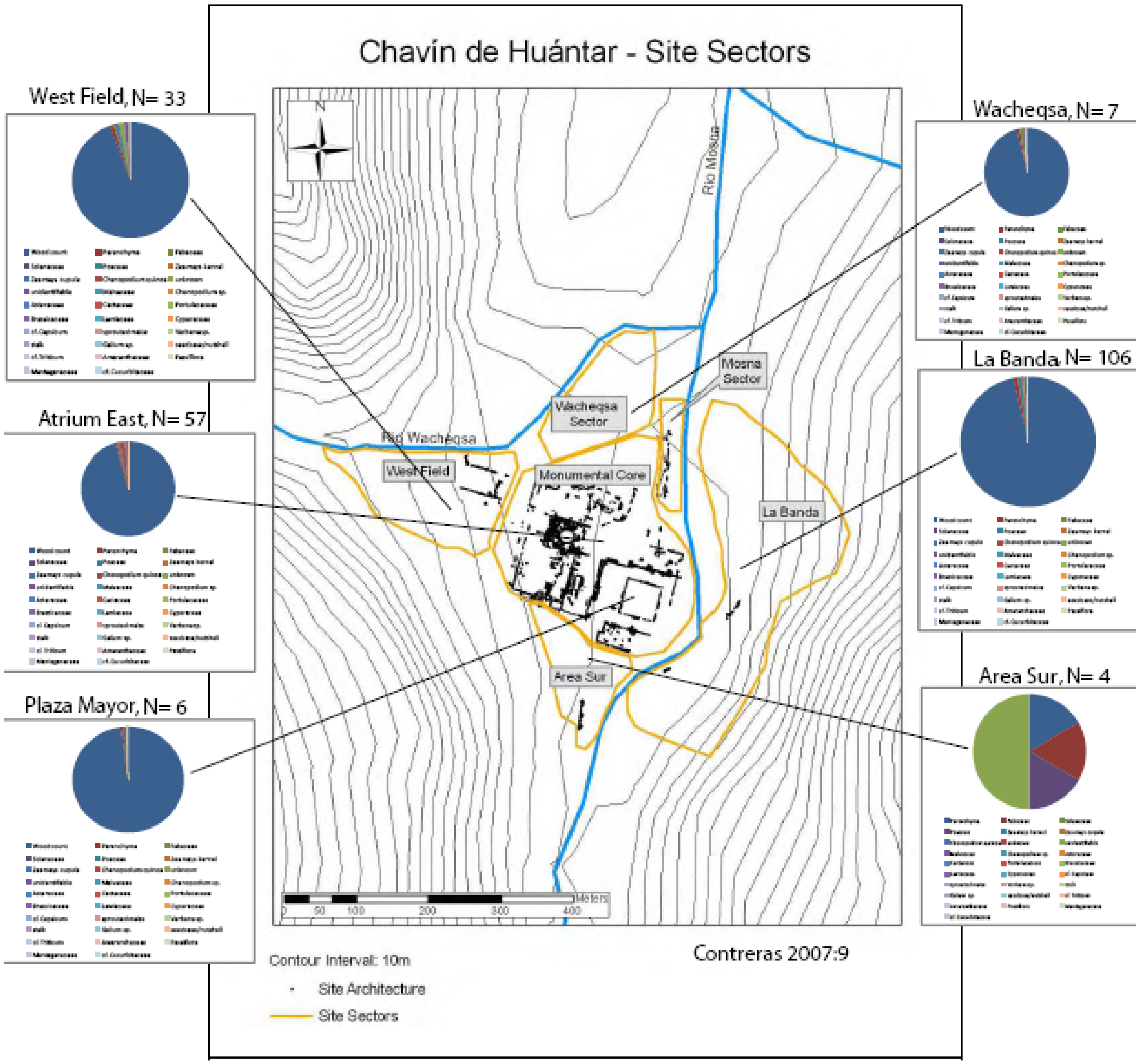


Figure 7.16: Chavín sectors with wood

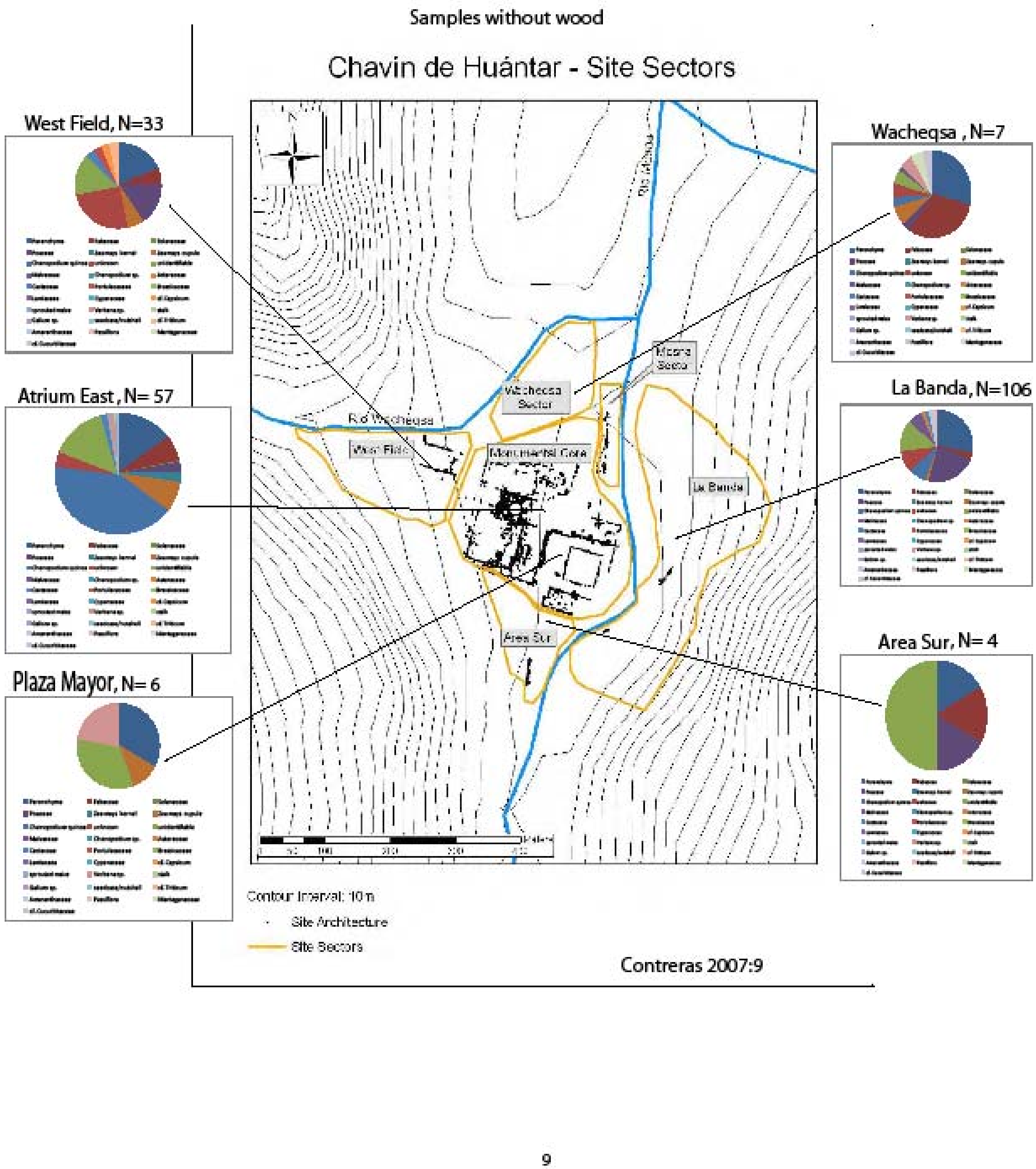


Figure 7.17: Sectors of Chavín without wood

7.3 Wood and Macrobotanical Remains from La Banda

The following section presents the analysis of macrobotanical remains from La Banda by excavated level. In each instance the samples are presented chronologically from oldest to youngest. I first present the wood densities recovered by unit level and then I present the non-wood macrobotanical remains.

The wood remains (Figures 7.18-7.21) from levels VI-III are presented from oldest level to most recent. There were no significant temporal differences between the radiocarbon samples, presented in chapter 6.2.1, which lead me to conclude that this section of the La Banda sector was constructed in two major construction events. The overlap in dates leads to the conclusion that the levels each cover small time frames. One useful feature of the wood maps is that the samples that did not contain any remains are also represented on the maps. If there was no black dot on a unit that means there was no available sample from that unit.

The non-wood macrobotanical remains (Figures 7.22-7.25) presented levels VI-III from oldest level to most recent. There were such sparse remains in the sector that every recovered non-wood macrobotanical remain is depicted on the maps. While the remains recovered from La Banda are rare they do pattern in interesting ways that provide insights into the different uses of portions of the site.

The following section, 7.3.1, analyzes the remains depicted on the level maps. There I analyze differences between levels as well as differences between ADs and ASDs. The maps that follow over the next several pages are presented one after another to allow for easy comparison across levels. My interpretation of these maps (Figure 7.18-7.25) follows the presentation of all of the results.

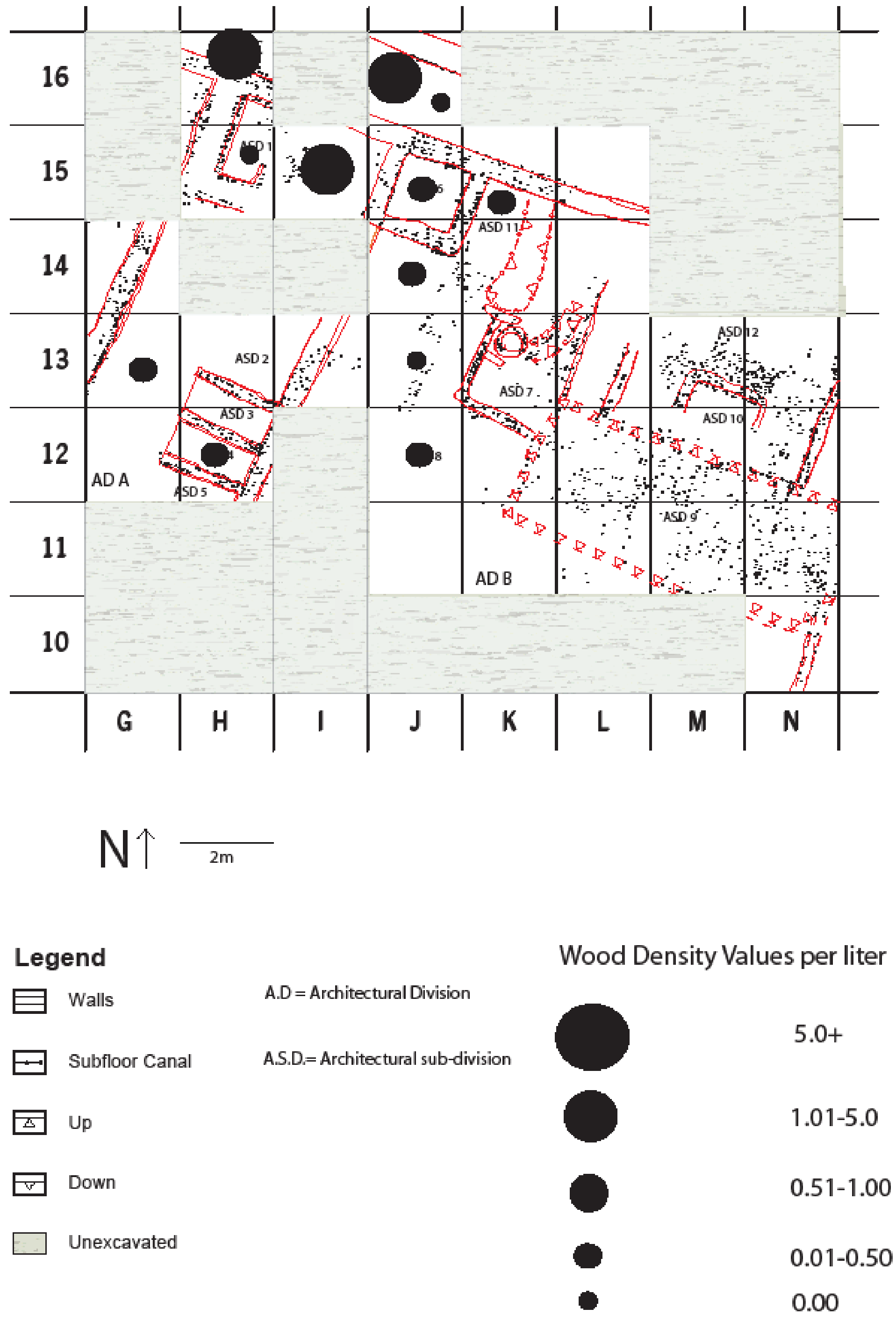


Figure 7.18: Level 6 Wood Density Map

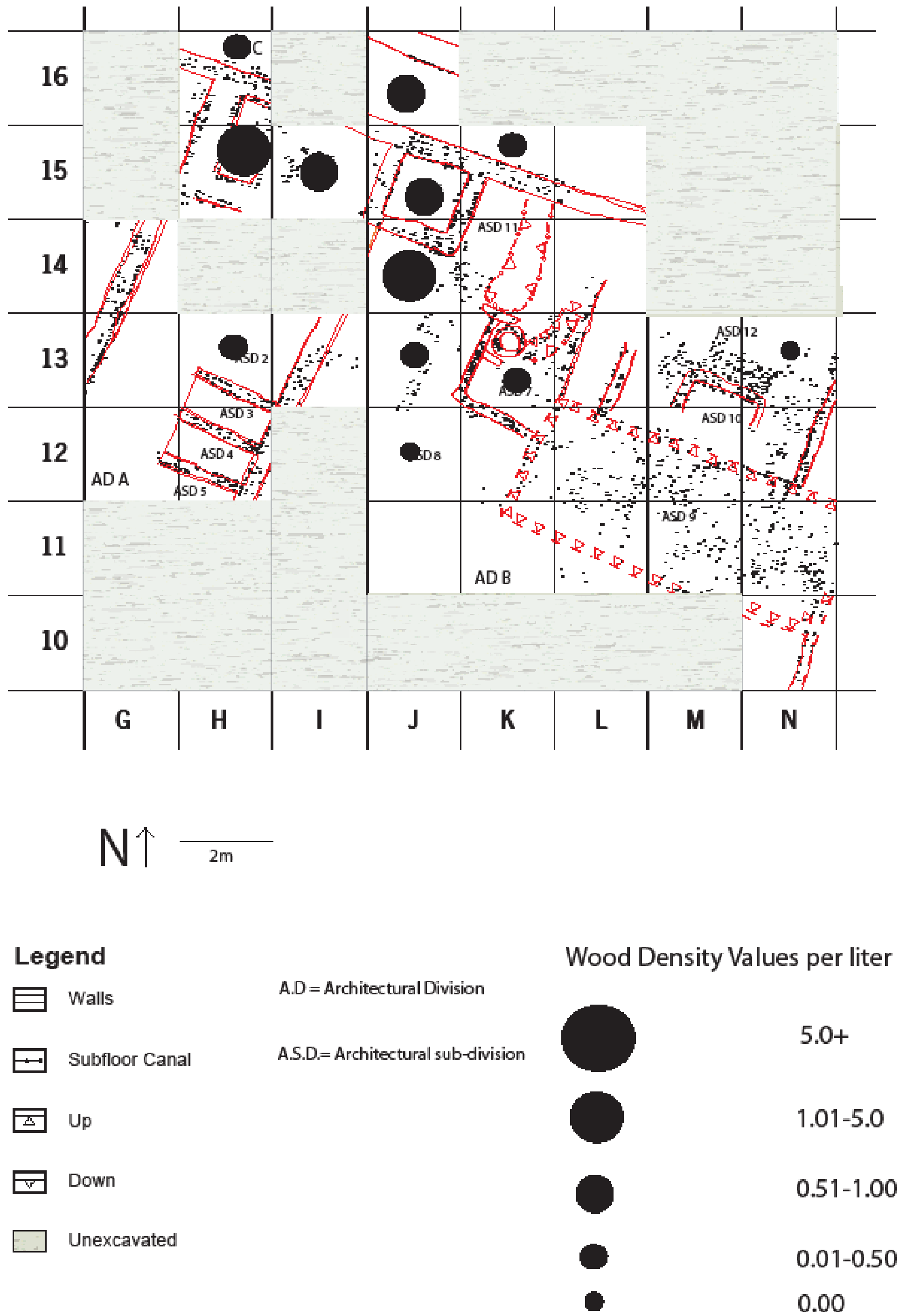
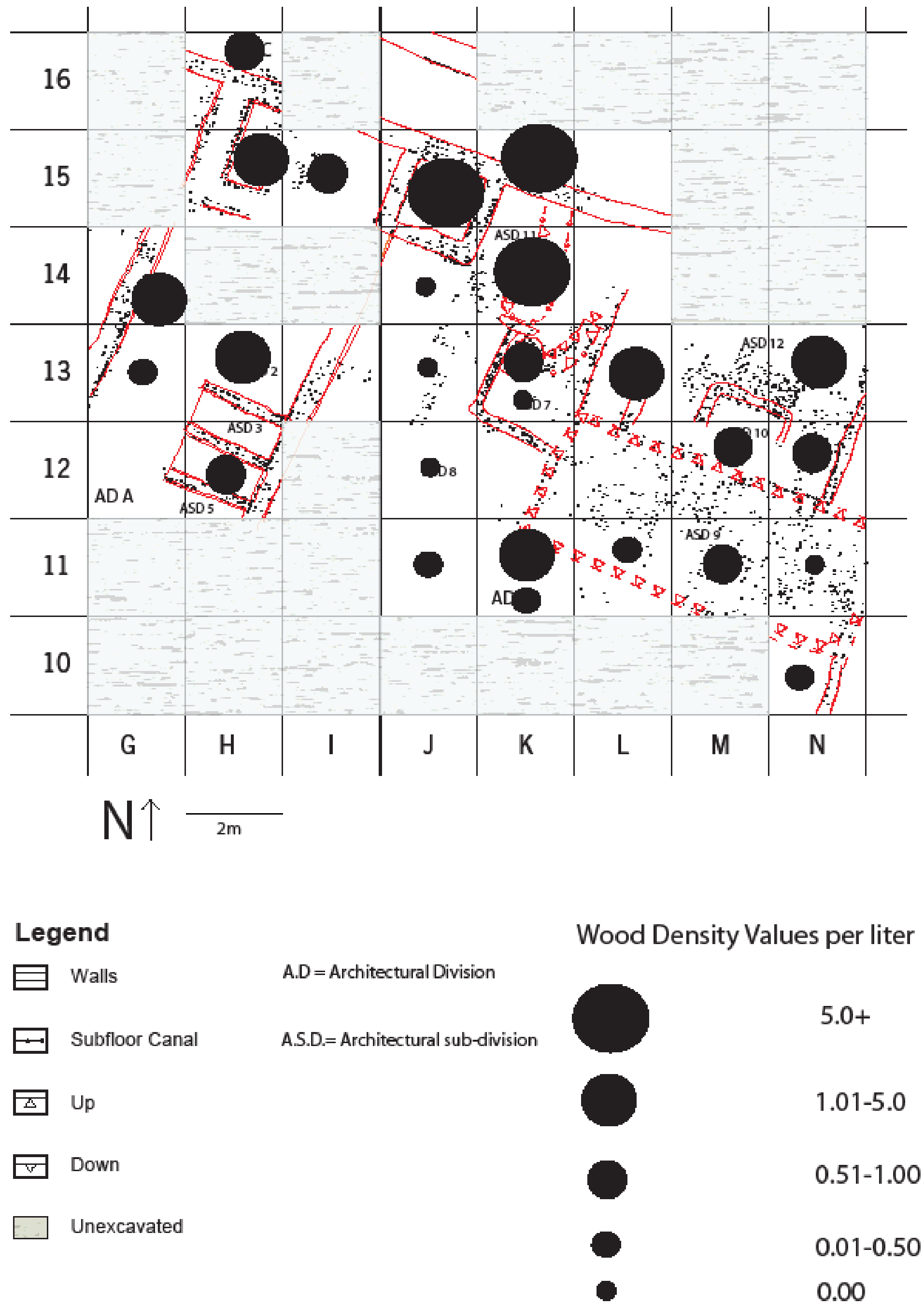


Figure 7.19: Level 5 Wood Density



Note: J11-N11, N10, wood was recovered in level 3 but is culturally part of level 4

Figure 7.20: Level 4 Wood Density

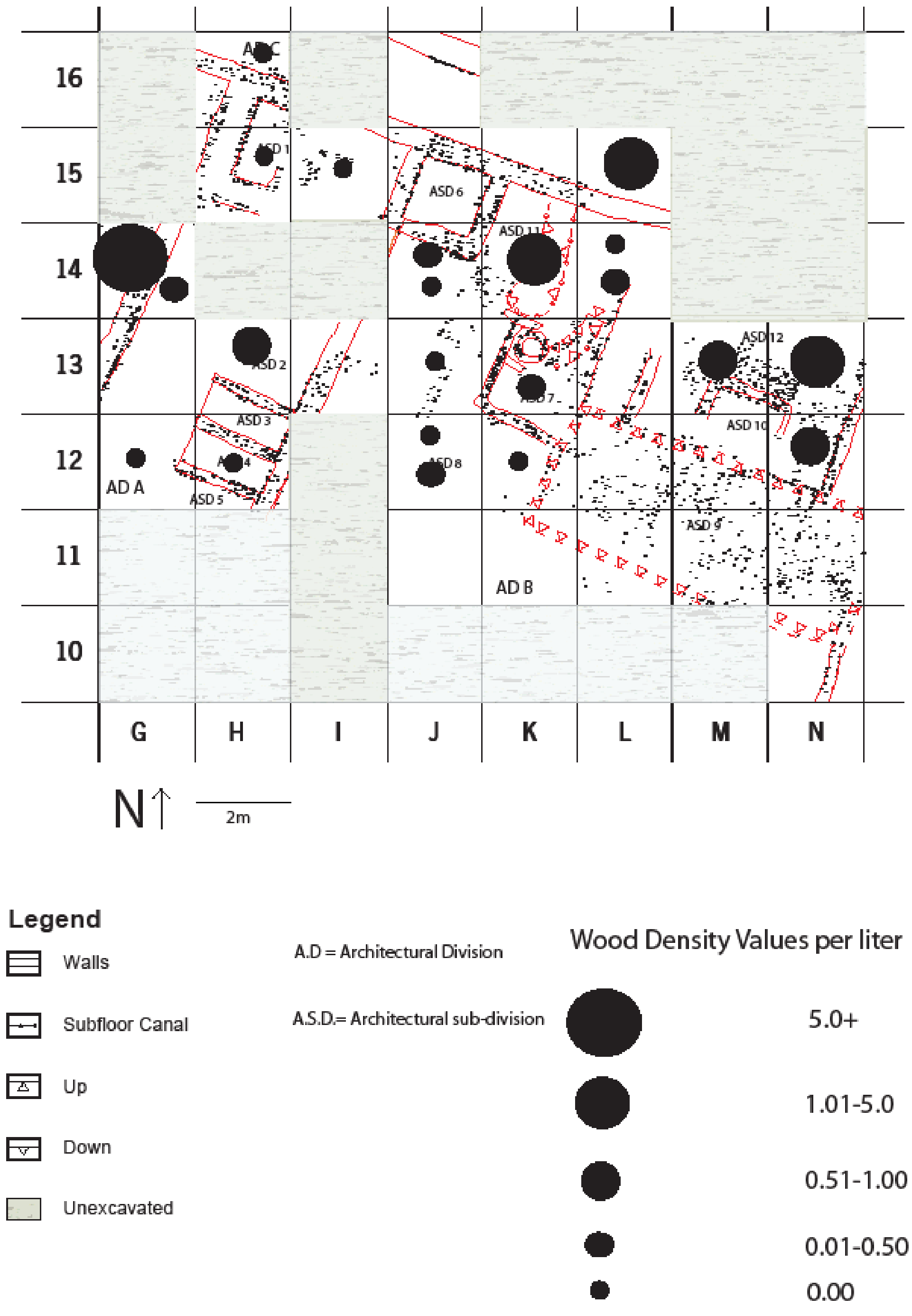


Figure 7.21: Level 3 Wood Density

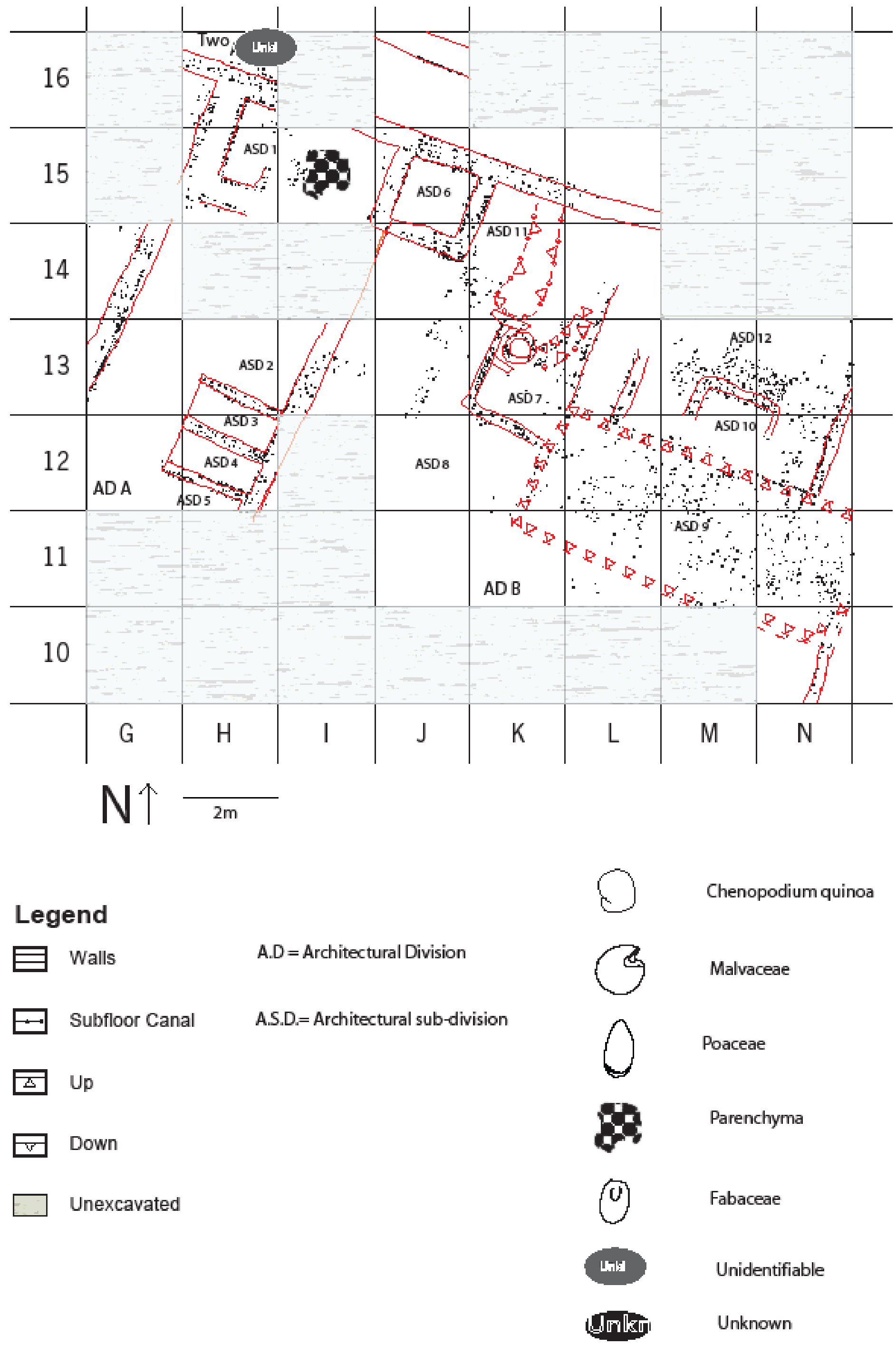


Figure 7.22: Level 6 Macrobotanical Remains

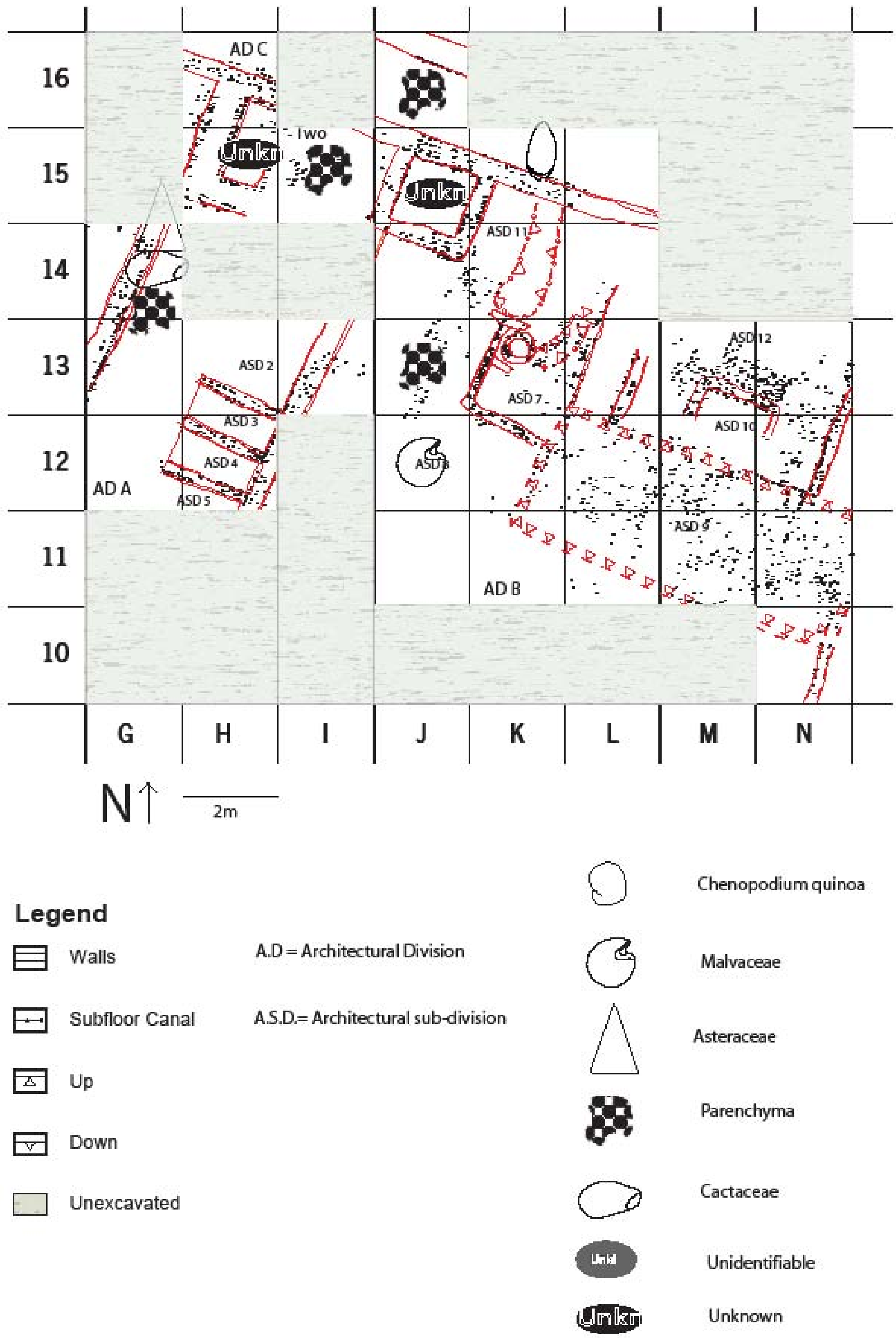


Figure 7.23: Level 5 Macrobotanical Remains

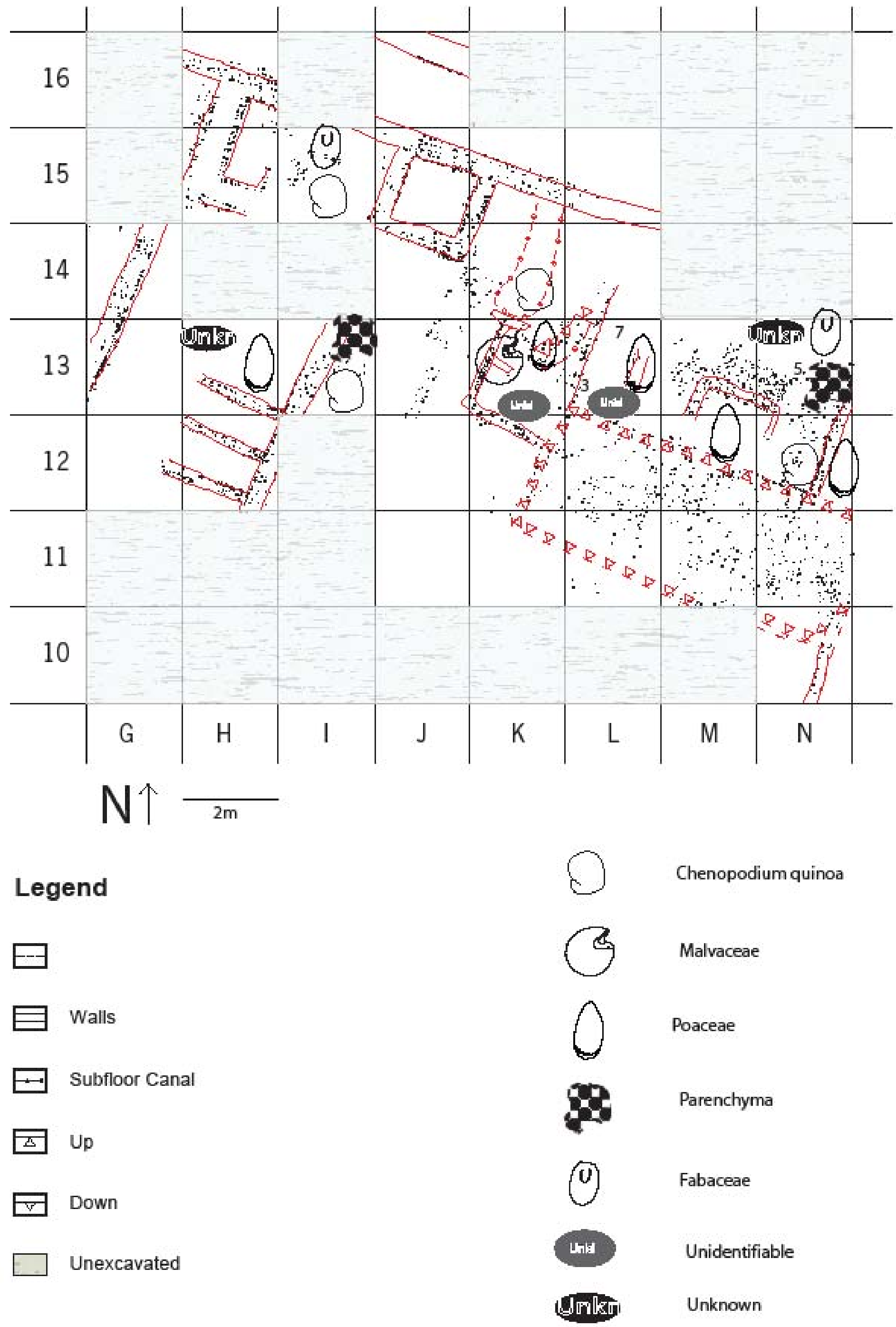


Figure 7.24: Level 4 Food

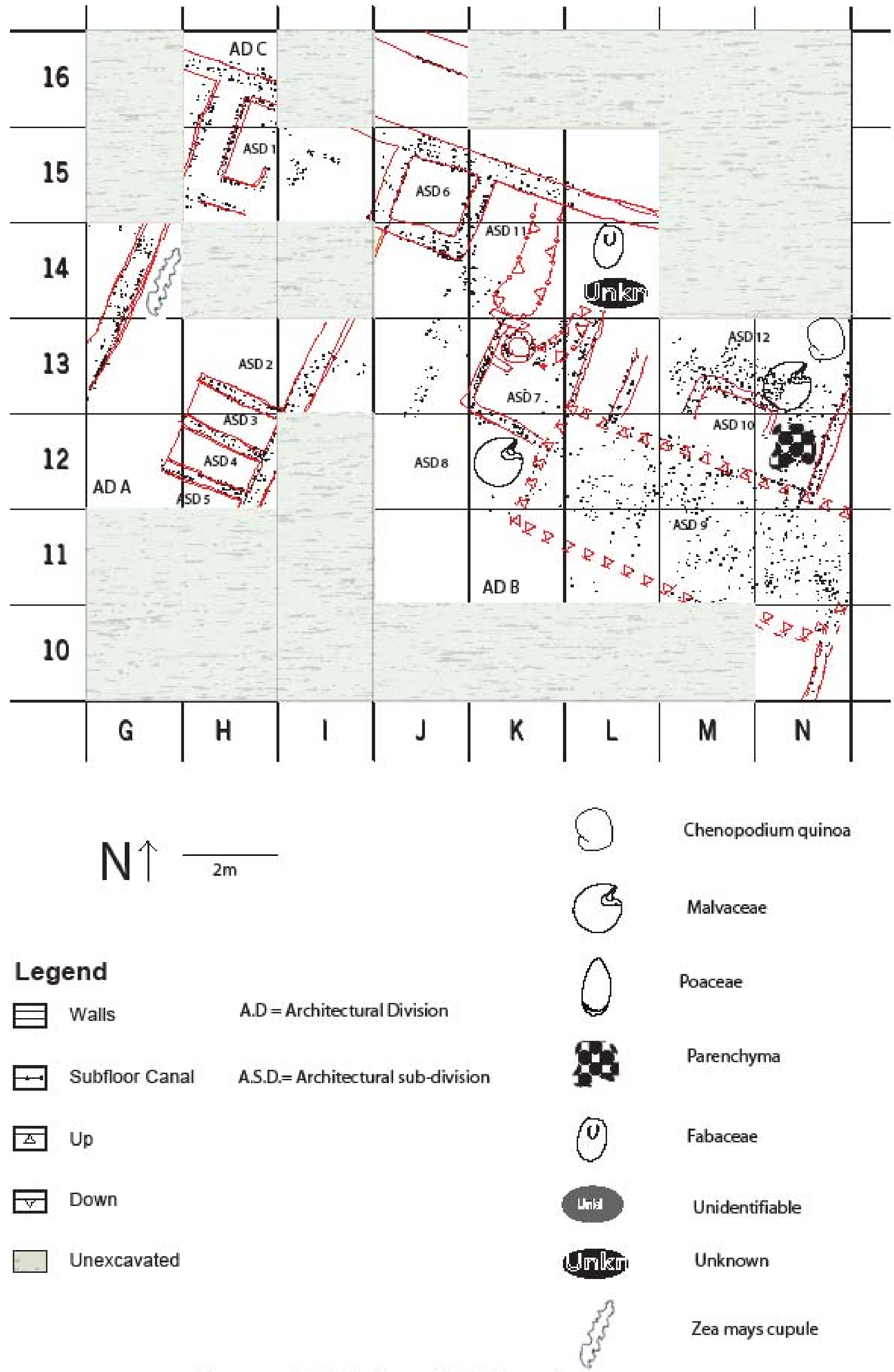


Figure 7.25: Level 3 Food

7.3.1 Analysis of La Banda Macrobotanical Remains

The wood remains vary significantly by level. This variability provides useful insights into use areas across the sector. The excavations document four major ADs in the sector and the wood remains allowed for further analysis of these spatial divisions. Level VI was lightly occupied and there were only large amounts of wood found in the pathway, AD C, and in unit I15 which had a hearth. The large quantities of charcoal found in the pathway indicate that remains from inside houses were dumped here as there was no evidence of burning features found in the pathway. Level V had dense samples from units J14 and H15 but other levels had greater amounts of dense samples. There were samples with less dense remains from the living areas around the patio. The most number of samples with wood in them came from Level IV. These samples varied significantly across units and the large number of samples from the level allow for the discussion of use areas. Units J15, K14, and K15 had the densest samples and they were located near hearths. The pathway, AD C, had moderate levels of wood but an average density higher than other ADs. There lower levels of wood in ASD 10-12 in AD B but these areas had higher densities of wood than ASD 9. AD A contained relatively consistent density levels of wood which and these were indicative of more intense occupation in this AD during this level. Level III's densest sample was from G14 in AD D. The other ADs had some dense remains but in general this level had many samples with low densities of wood which is indicative of living level above the major occupation level.

The non-wood macrobotanical remains from La Banda were sparse but the remains were generally recovered from areas considered to be living spaces. The portion of the sector with the largest number of recovered remains was AD B, followed by AD A, AD C, and AD D. Level VI had few non-wood remains and these were recovered from units I15 and H16. The parenchyma found in I15 could be from a tuber cooked in the hearth found in that unit. Level V had many more samples with non-wood remains. These remains were found in ASDs 1, 2, 8, and 11. These were not found in the more formal spaces of ASDs 3, 4, 5, 7 and 9. The main living occupation was Level IV and there were relatively more non-wood remains recovered from this level. The remains were concentrated in ASDs 2, 7, 10, and 12. ASDs 10 and 12 were the spaces north of the patio, ASD 9. These appear to be living spaces and had large numbers of seeds found in them. The finds in ASD 7 were not all food species but they do indicate that items other than wood and ceremonial goods were placed into the *mito* type hearth in the area. Food may have been consumed as people labored in this workshop area. Level III had fewer remains than other levels and they were also concentrated in ASD 12. The maize cupule found in unit G14 is shown in an SEM image (Appendix H). While the non-wood remains did not uncover evidence for sacred plant use future analysis using GCMS (Gas Chromotography Mass Spectometry) may reveal evidence for the use of these plants (Sayre in prep).

The wood and non-wood macrobotanical remains were patterned distinctly across the architectural space as well as over temporal levels. The patio, ASD 9, was generally kept clean although the wood founds there indicates that some domestic activities may have occurred there. The channels were found to be mostly free of non-wood macrobotanical remains, as would be expected of space that may have had water moving through it. The pathway did contain evidence that people left trash and swept out some of their hearths into this space but it did not contain large amounts of non-wood remains perhaps because it is likely that dogs would have frequented this area. The structures of ASDs 10 and 12 contained the greatest evidence for people living and eating in them. These may have been the living spaces of the people who labored to produce ritual goods in ASD 7. While AD B had more dense wood and non-wood remains than AD A there were still many areas in AD A with evidence for domestic use, such as in ASDs 1 and 2. ASDs 3-5 appear to have been more formal spaces where fewer non-wood remains were recovered. Finally, areas around hearths did contain evidence for the cooking of food and the burning of other botanical materials.

The macrobotanical remains reinforce the interpretation that level 4 was the main living surface of the sector. This level had the highest number of dense wood and non-wood remains. As discussed in chapter 6 this level and the ones that preceded and followed it revealed the majority of finds related to ritual good production as well. The ritual goods found in this level are discussed in Chapters 8 and 9.

7.4 Archaeological and Comparative Collection Phytoliths

Phytoliths were extracted from 10g soil samples collected systematically from excavation units. In all 412 samples were collected. All soil samples from the La Banda sector, as well as some samples from other sectors, were exported to Berkeley for phytolith analysis, of which 40 from all site sectors were processed and 20 from the La Banda sector were analyzed. The extraction techniques used in the wet lab were based on standard procedures (Pearsall 2000; Piperno 2006:90). The following is an abbreviated description of the extraction process that was completed in the UCB Archaeological Research Facility wet lab:

Extraction Methods

1. 10g of sediment was mixed with 200ml of distilled water in a beaker. Baking soda was added to the mixture and then the mixture was shaken for 24 hours by a wrist action shaker.
2. The sample was placed in a large beaker and water was added up to the one L mark. Clays were removed by allowing silt to settle for an hour and then the clear supernatant was removed. This process was repeated several times.
3. Carbonates were removed with 10% HCl.
4. Organic matter removed with nitric acid and potassium chloride.
5. Removing organic humic compounds with Potassium Hydroxide (KOH) Solution. This step was not always necessary as highland Andean samples generally contain fewer samples than lowland tropical samples.
6. Flotation of phytoliths with heavy liquid solution (Sodium Polytungstate).
7. Removal of heavy liquid solution and drying phytolith sample.
8. Mount phytoliths on slide using permount.

7.4.1 Microwave Digestion Technique for the Comparative Collection:

Although microwave digestion (Parr, Dolic et al. 2001) is now a common technique for processing phytoliths the decision was made to only use this technique when processing comparative plant material. This decision was made in case there was a lower recovery rate than standard procedures. This possibility is less of an issue when dealing with comparative material as there is less morphological diversity in comparative assemblages. All microwaved samples were prepared using the following process:

1. Botanical material was dried overnight at 70 degrees centigrade in order to remove any excess moisture. The sample was then weighed and there was a maximum mass of 0.30 grams per sample.

2. The sample was then added to the test tube along with 5ml HCl, 5ml nitric acid, and 1ml of potassium chloride. This mixture has proven to be the most efficient means of recovering digested plant material.

3. Eight samples at a time were microwaved for one hour using a programmed comparative material digestion technique.

4. The samples were then washed with distilled water and precipitated out using standard centrifugation methods.

5. After washing and centrifuging the samples were dried again overnight, weighed, and then mounted on slides using permount.

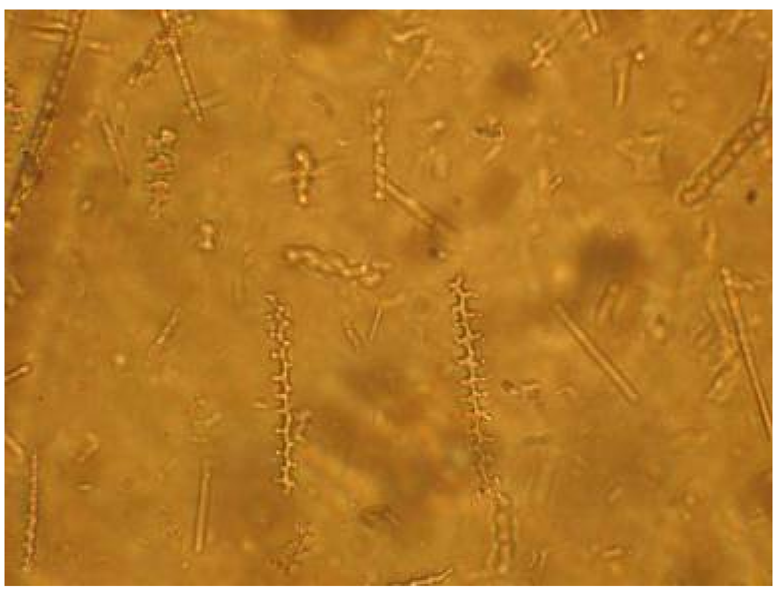


Figure 7.26: Images of comparative phytoliths (*Paspalum ceresia*).

In all I processed 56 comparative plant specimens that I collected and 57 comparative Poaceae samples collected by members of the Museo Nacional de Historia Natural (Appendix E). The comparative grass samples were collected in the *Callejón de Conchucos*. I sampled two portions, the inflorescence and a portion of the non-inflorescence plant body, from the comparative samples.

7.4.2 Analysis Methods:

I initially scanned the slides at 200x magnification to find phytoliths. Photographs were taken at 400x magnification to have a clearer image of the phytolith. Each slide was scanned until a count of 200 was reached. In the case of slides with counts clearly less than 200 final counts were not recorded. Scanning on these sparse slides was repated two or three time to confirm the initial result of sparse phytolith counts. Identifications were based on dominant grass categories (Piperno 2006: 31), and species specific forms (Piperno 2006). Online databases from Pearsall's University of Missouri Laboratory and comparative samples housed at U. C. Berkeley were also consulted. Microsuite software was used to take photographs and measure phytolith size.

7.4.3 Data:

The phytolith data are presented below (Table 7.3). The data from archaeological slides are included in the table and reference collection materials are included in appendix (E).

Table 7.3: Archaeological Phytolith Samples. Samples and identifiable types presented.

Sample # and Location	Pooid	Globular/ Arboreal	Bilobate	Cross	Rondel	Panicoid	Elongate	Hair	Bambusoid	Spherical verrucate	Sclerid
75A, L11/M11, VII, Feature 1	6		2			11	181	2			
50, K15 VI	4	1	10	1	4	4	176				
63A, K14-IV-Feature 1		4			5		186	6		1	
84A, N13- IV	11					14	168		7		
49, K13 IV	13	72	3			8	104				
67A, L11 II	74	31			7		62	14		6	7
79A, M11-III	26			27		36	84	9	18		
57A, K13- III	12		3		2		161	12	4	4	5
59A, K13- V	13	7			4		169	5			2
39, J14-VI	12	25					150	9			4

Archaeological:

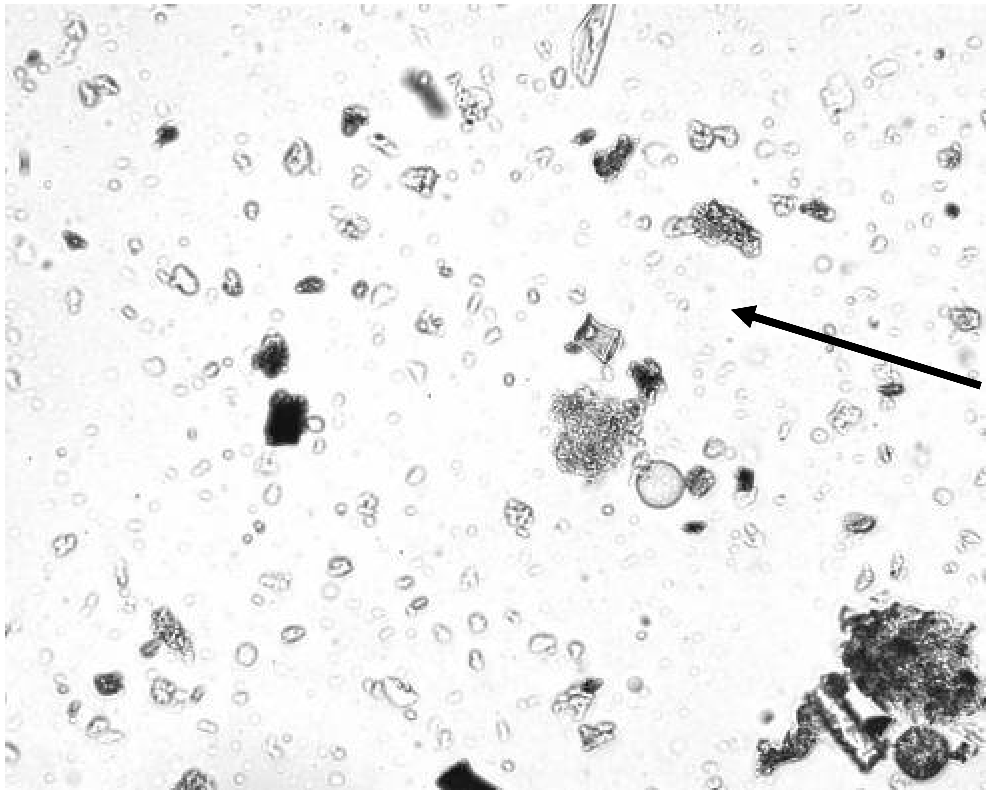


Figure 7.27: Image of archaeological rondel phytolith from K14 IV, Feature 1.

The samples analyzed in this dissertation provided insights into the use of plants in la Banda. The crosses were almost entirely variant 1, a form that predominates in maize and also occurs in some other grasses. My variant 1 cross bodies averaged 13.2 µm in size which indicates maize presence, however more cross-shaped bodies from this sample need to be measured (n=3 currently) when the laboratory microscope is functional again after the flood repair work is completed to confirm that these are maize cross bodies (Iriarte 2003). however more measurements need to be made to confirm absolutely that these are maize cross bodies (Iriarte 2003). While the maize specific wavy top rondels were not encountered these are small portions of the rondel assemblages in general and are not very common in general maize rondel assemblages. Given the light presence of rondels in the examined slides their absence is a likely side effect of only encountering small numbers of rondels. Earlier analysis of samples from La Banda did reveal the presence of phytoliths from the genera *Lagenaria* but these were not present in the La Banda slides from 2005. Their absence and the absence of phytoliths from the genera *Cucurbita* is most likely due to the fact that at this point in time species in this genus had been selected for soft rinds and no longer produced these diagnostic forms of scalloped phytoliths (Piperno 2006). Also, while some of the slides analyzed above were prepared from fractionated silt samples (e.g. coarse silt and fine silt) not all of them were and future work will emphasize this process as it will likely lead to greater recoveries of maize, squash, and bottle gourd phytolith forms.

Phytolith data are generally conducive to multivariate analysis if the counts are normally distributed. Each slide is counted for 200 identifiable categories and these sums allow for more rigorous analysis of ancient environmental parameters as well as providing some evidence for the consumption of individual species. This work is ongoing as the initial slides analyzed were dominated by elongate forms that are generally not diagnostic beyond the family level. Slides that did not contain 200 identifiable forms were not included in this chapter, except in reference to their small counts which will be discussed below. These slides were scanned at least twice and generally had counts of less than 100. The specific types encountered in the scanned slides are not in the table and as such I only refer to their low counts in the section that follows. Future analysis will focus on additional phytolith studies of sediments as well as the Andean grass comparative collection, as this area of research is in need of additional work. While the Bolivian altiplano (Logan 2006), Argentinean grasslands (Zucol 2000; Korstanje 2008), Ecuadorian coasts (Pearsall 2004), and Uruguayan grasslands (Iriarte 2003) have had comparative analysis done there is a gap in the Peruvian Literature. After that work is completed there are other archaeological samples from earlier time periods of Chavín that are in need of analysis.

Below I present data (Figure 7.28) from slides that contained over 200 identifiable phytoliths and slides that had less than 200 identifiable samples. Presence means the slide contained over 200 identifiable phytoliths and absence means the slide contained fewer than 200 phytoliths. The presence and absence of botanical remains has previously been used to reveal activity areas (Balme and Beck 2002).

La Banda Architectural Plan

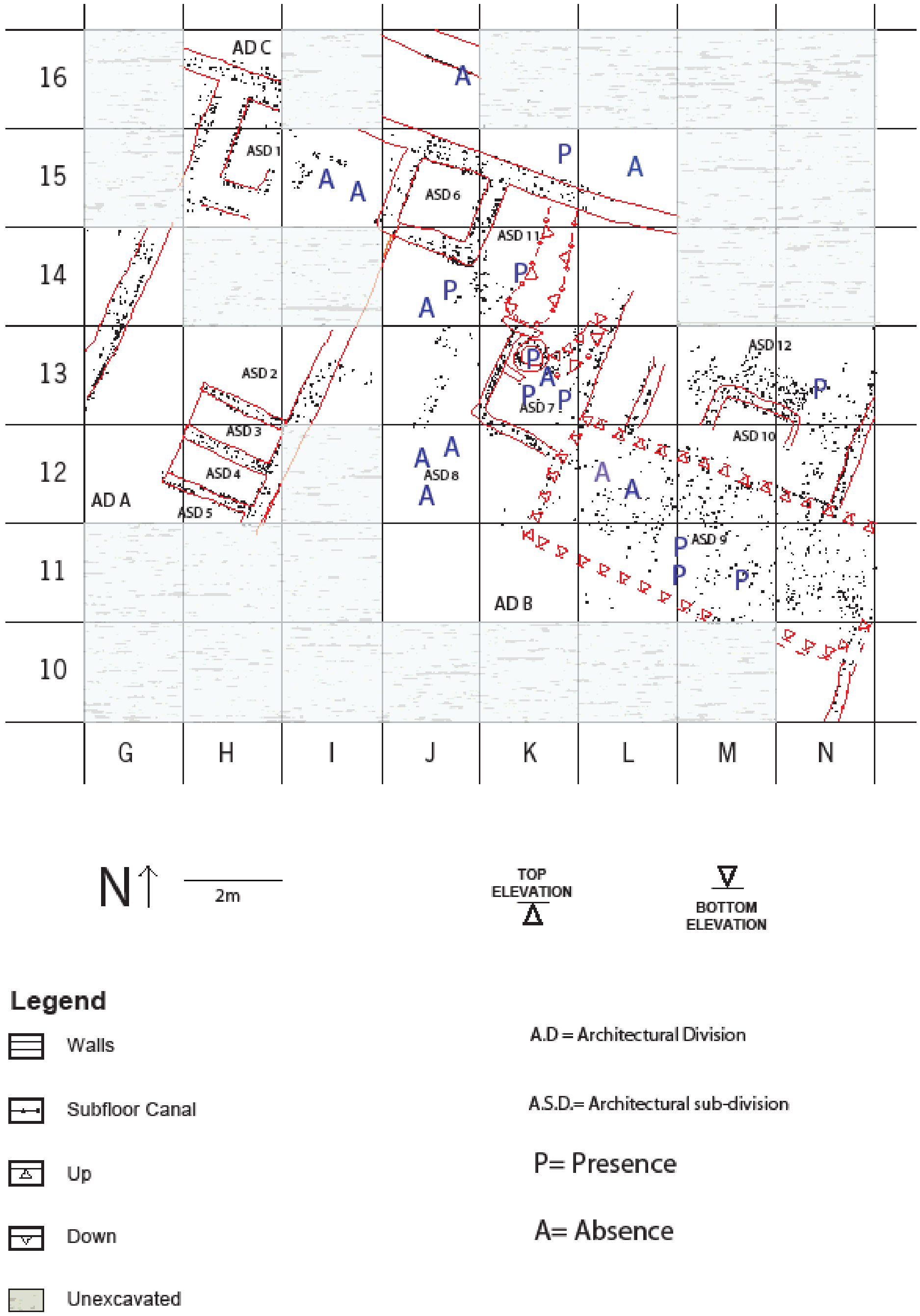


Figure 7.28: Phytolith Presence/Absence

The data above reveal broad patterns that are similar but not identical to the spatial patternings found in the charcoal remains. The samples with less than 200 identifiable phytoliths were #52 (Unit K13 III), #44B (J16 III), #48A (Unit I15 VII), #33 (Unit J12 VI), #45 (Unit J12 IX), #47 (Unit J14 V), #48B (Unit I15 VII), #74A (Unit L15 III), #42 (Unit J12 VII), and #72 (Unit L12 III). The samples with identifiable remains are listed in Table 7.3. Sample J12 was identified for particular analysis as this unit contained the sand foundation for much of the construction. This now appears to be sterile fill without significant phytolith remains. There is an interesting difference between unit I15, samples #47 and #48, which did not have large numbers of identifiable phytoliths and K13. This small domestic hearth had small numbers of phytoliths but the large formal hearth in unit K13, ASD 7, had samples with over 200 identifiable phytoliths. The only sample from K13 with less than 200 identifiable phytoliths was sample #52 which was not directly within the hearth. The other samples recovered from K13 had greater counts of phytoliths as did samples in K14 and J14 north of this area. The samples from L11/M11, ASD 9, and M11 had more than 200 identifiable phytoliths. These areas were directly above and below the formal patio floor. The area below the floor in L11/M11 contained burnt bones and other evidence of offerings or construction fragments that were deposited before the floor was constructed. N13, a unit in ASD 12, is posited to have been part of the residential area and this sample contained identifiable phytoliths. The pathway contained two samples with few phytoliths, L15 and J16, and one with more than 200 identifiable phytoliths, K15. This indicates that the pathway likely had slight botanical ground cover and burnt deposits but was generally sediment and kept fairly clear.

The overall picture that emerges from the phytolith remains is that the living areas in the north and northeast of area AD B contained greater numbers of phytoliths on their living surfaces. The more sparsely used areas, in AD A and AD C, as well as the southwest of AD B contained fewer identifiable phytoliths. These data fit into the patterns shown with the macrobotanical and charcoal remains. There is much more work to be done with the phytolith samples but this beginning reveals that the preservation was generally superior to the macrobotanical preservation. The dominance of elongate forms in the samples is problematic and limiting but it does not prevent me from making preliminary interpretations of the spatial patterning.

7.5 Faunal Analysis

The faunal remains from La Banda were analyzed by Silvana Rosenfeld and the report is contained in Appendix N.

7.6 Food Production and ecology in La Banda

The evidence for food production in La Banda is indirect. While non-wood macrobotanical remains were recovered in the sector these remains were sparse. It is evident that many of the plants consumed in the La Banda sector were highland plants native to the sector. It appears that many of the foods produced in La Banda were produced in the fields on the slopes to the east of the settlement but there is limited evidence that the inhabitants of the portion of La Banda excavated in 2005 spent the majority of their time working in these fields. These fields would have been accessed by various members of the community, and most likely by people of all ages. Farming implements of the sector may have been removed by the La Banda inhabitants and post-temple occupants of the sector because these tools would have been useful for any highland farmer.

Lathrap (1973) postulated that the origins of the Chavín food production system lay in the eastern jungle lowlands. The macrobotanical remains recovered and analyzed here do not support this conclusion. The agriculture practiced at Chavín was a typical highland practice of tuber, quinoa, and maize production that was combined with camelid husbandry.

The faunal remains provide striking evidence for the local care and raising of camelids and guinea pigs. These animals were the major sources of protein for Andean people. Animals were also used to provide companionship, protect homes, fertilize fields, haul raw materials, and provide sources of clothing and warmth. In contact times children were employed in the raising of animals and it is likely that this would have also been the case in Chavín times. This is one of the first activities/chores that children can complete with minimal adult supervision and has been observed since Inka times (D'Altroy 2002). Children are often seen training other children in how to manage and control animals. At this point in time, roughly 2700 B.C., the society would likely have been filled with children under the age of 15 and watching animals and collecting firewood were major activities that they could take part in. The lack of dung recovered in the macrobotanical samples lead us to conclude that the camelid dung was most likely collected and deposited in the fields as a fertilizer.

The residents of La Banda and greater Chavín were able to manage their fuel use over time. One striking find from this project was the lack of dung in the macrobotanical samples. While some dung may have been used in fires and later destroyed by taphonomic factors in other areas of the Andes, such as Xauxa, and the Bolivian altiplano, dung is commonly identified in the archaeobotanical samples (Bruno 2008, Hastorf 1993; Whitehead 2007). At Chavín wood appears to have been plentiful and well managed, presumably in an ecological strategy similar to those discussed in field rotation and fallow systems. The dung from camelids and other animals was likely used as a fertilizer in fields with wood being the preferred fuel item. The long term management of forest resources is not only evidence for successful ecological practices but also means that further work is needed into the political and social processes that led to the rise and decline of the main temple.

7.6.1 Food use in La Banda

The evidence for food use predominately comes from the macrobotanical and faunal remains. However, there was other evidence for these practices. Out of the three hearths uncovered in the La Banda excavations two appear to have been used for everyday cooking and food processing. The third, in ASD 7, was more formal and may have been used for food processing but was more likely employed in the production of ritual goods. The wood densities show that wood was used at a similar rate throughout different time periods and that the people of Chavín did not overharvest the forest. A pollen study of nearby lakes would be a valuable addition this dataset and would also add to our knowledge of ancient environmental change.

The sparse non-wood macrobotanical remains provide evidence for the differential use of architectural spaces. Across different levels the patio, ASD 9, was generally kept clear of food and wood. This was not a space where food was cooked or commonly consumed. Rather these practices predominately occurred in the spaces north of the patio, ASDs 10 and 12, as well as in ASDs 1 and 2, the area north of the colored clay floors of AD A. There was not much evidence for food deposition in the pathway, AD C, or in the fill of AD D. Rather, food was cooked and consumed in the areas away from the formal spaces and close to the ritual good production area of ASD 7.

The ceramics do not provide overt evidence of large scale food consumption rather it appears that there was household based consumption and that communal eating events may have occurred elsewhere, perhaps in areas in the monumental center. The lithic remains need to be analyzed for starch grains to see if these tools were used in food processing and consumption; however, the faunal remains do show evidence of cut marks and processing to remove marrow. This indicates that the meat supply was valued and almost every edible portion of meat was consumed (Rosenfeld Appendix N).

The phytoliths do not reveal extensive evidence for the storing and processing of food. There was a lack of identifiable maize cob, squash, or gourd phytoliths. These crops were most likely produced nearby this residential sector and may have been stored in another portion of the La Banda sector. The elongate phytoliths recovered are predominately from the grass family and indicate that grasses were common in the La Banda area, meaning that the nearby surrounding land was most likely covered with grass or covered with thatched roofs. However, the pathway may have been uncovered as there was much less evidence for grass there. Underneath the architecture excavated in La Banda in 2005 was sand and other evidence of ancient riverbeds. Thus, it was possible that the La Banda sector was not covered by grass during temple times but the phytoliths indicate that the soil of the sector was mature enough to support this ground cover.

The next chapter analyzes crafts and production. The majority of these remains were made from non-local biological materials. While the shell and marine bone remains do come from edible species unless these remains were carried to the site in brine or other preservatives it is unlikely that they were consumed at Chavín. It is more probable that the shells and marine bones were brought defleshed in order to be processed and used in La Banda.

Chapter 8: Value, Crafts and Production

8.1 Anthropological Theories of Value, Crafts, and Production

The previous chapter analyzed the archaeobiological remains from the 2005 excavation season at Chavín. This chapter moves from a study of biological remains to discuss materials of more traditional analysis. Value, crafts, and production are subjects that anthropology has addressed since the inception of the field (Childe 1939; Mauss and Halls 1990; Graeber 2001). Within archaeology crafts and production are subjects an extensive literature (Brumfiel and Earle 1987; Earle 1997; Costin 2001; 2004). Discussions of crafts and production often times leave value as an unstated assumption yet this subject is in particular need of examination when analyzing non-market economies. There is a profound barrier of consciousness when we attempt to discuss value in societies that did not use money. The question of what a society considers to be of value is a problem that has been addressed by Andean scholars (Patterson 1991; Hastorf and Johannessen 1993; Lechtman 1994; Burger 1995; 2004; Vaughn 2006). This chapter analyzes objects that were not regularly found throughout the architectural space like bulk ceramics and other objects of comparably more common usage. These objects were either found in individual pieces or were clustered in one production area.

Appadurai (1981) provides a useful starting point for considering the issue of value. First, his terminology is flexible enough to be employed in a wide variety of circumstances, and it leads to solid conclusions regarding value and transactions while at the same time permitting objects to be considered in situ. Appadurai acknowledges that an object's value is not a constant, that 'regimes of value' can change based on the user or context of the object. For Appadurai there is little value in discussing an objects' "sentimental value". In his definition an objects' value does not come from production but rather from exchange. This means that if no other party is willing to acknowledge sentimental value, and I need to trade the object, then my sense of connection to the object does not matter as much as how much I am able to trade for the object. This is a sentiment more common in capitalist societies.

While the term craft is employed in this discussion it is not confined to everyday articles. There has been significant discussion of the continuing use of this term as it implies that the objects are not fine art or mass produced (Clark and Houston 1998; Costin 2007). Crafts will be used here to discuss locally valuable artifacts presumably made by inhabitants of the La Banda region. There are craft objects that fall outside of this domain. Such objects are referred to as transcendent objects. These pieces, such as the royal jewels, generally cannot be sold or alienated from a certain person or place (Graeber 2001). They confer a sense of lineage and power onto the holder that carries a tremendous sentimental value that prevents them from entering the marketplace. The objects discussed here appear to have moved through space and were not ultimately deposited in a non-moveable setting. Some of the objects that appear to the modern eye to be of transcendent value, such as the *Lanzón*, are located in the monumental center but many of these issues of value are not discernable to the modern archaeologist.

I see the artifacts discussed below as products of specialization. One broad definition of this process is, "all production for use by others (outside the producer's household) is "specialized" (Costin 2007:147). In many instances the producers' relationship with an object of value may fade quickly over time. In the case of La Banda we appear to have uncovered objects that were used in the ceremonial center during rituals. Where goods were produced can inform us how the people of La Banda conceived of space. These crafts were not found in the center where they were presumably used to a greater extent. Other crafts, in completed form, have been found in offerings including in the galleries such as the *Spondylus* and *Strombus* objects found in the Ofrendas and Caracoles Gallery (Lumbreras 1993; Burger 1995; Rick 2005). These objects deposited in situ do not have one to one corollaries in the crafts found in the La Banda sector.

A central focus of production research is defining whether or not the production was attached or unattached (D'Altroy, Earle et al. 1985). Attached and unattached are differences in control over the producers, generally control by elites in a hierarchical power over lower members of the society. While this is a question of importance it is not the central issue in this chapter and it is a question that I believe will be better addressed when there is more data about the La Banda region and other domestic areas. Rather, I focus more on the process of production and the social relations that are embedded within that process. Hendon (2007) points a way out of circular arguments and turns to analyze socially embedded processes.

8.2 The Production Process:

It is impossible to discuss production without mentioning the contributions of Marx and thinkers influenced by his writings (Saitta and McGuire 1998; McGuire 2008). Marxism does consider labor and production to be part of broader culture but rather it is the foundation that creates a superstructure. Production embodies social relations, ideologies and technology (McGuire 2008:43). One necessary question is does labor produce social relations in all societies, or only in those engaging in capitalist exchange? It seems to me that we can discuss production as an important realm where relationships and power dynamics are constructed and refined.

As Turner (1984 cited in Graeber 2001) notes that in market-less societies a great deal of time is spent in social activities. There is often times much more dedication to the maintenance of these ties than to the production of new material goods. While this seemingly implies that non-market economies are fundamentally different in their approach to production than market societies it can also reveal how these societies approach production and bring to light some of the concerns regarding production. The consideration of production as an activity of lesser importance than societal cohesion does not mean that production is not valued, rather production in and of itself may be critically controlled precisely because it is of great importance. When production is part of an elaborate social process then all members must be clear about how they approach it.

The kinship mode of production (Wolf 1982) is relevant to my example as the Andean chroniclers noted the presence of this type of labor practice, *ayni* and *m'ita*, in the Andes at the time of the conquest (see definitions of these labor practices in Chapter 3). Additionally, there are overt connections between kinship, farming, and labor arrangements in most Andean communities (Mayer 2002). The advantage of acknowledging the role of family in production is that it is one of the few constants that appear in the ethnographic literature and the chronicles. In the Inka period labor was the greatest method of extracting wealth and this labor was often confined and denoted in terms of kinship. However, the kinship mode of production has some limits in terms of how we consider the ancient Andean past. In particular, at Chavín it is not always apparent how much of the local production was focused on producing for people outside of the immediate region. While elements of Chavín iconography were stylistically widespread during Early Horizon times it is not known exactly how much of the ceramics and other forms of material culture were produced at Chavín itself and then carried to outside communities or if Chavín styles were produced across the region (Druc 1998; Druc 2004). There is still a need to find ceramic production areas and the clay sources.

What is of interest here is the relationship between the inhabitants of La Banda and the monumental center. The crafts were being produced in La Banda and then possibly used there as well as in rituals in the temple. So, the question of who was controlling the producers is a necessary one. Was this process always controlled by outsiders or is it possible to consider if the producers in La Banda were also the end users of the crafts they produced?

These discussions of value, crafts, and production are stated in relationship to a monumental center where religious activities took place. It is problematic finding evidence of activities that may not produce or leave behind material correlates and this shortcoming is acknowledged here. Thus, I discuss both the material that was recovered as well as materials that were not recovered but were expected in these households. After a discussion of the artifacts recovered I will return to the questions posed in the introduction and analyze whether or not the material remains help resolve how, where, and for who the crafts were produced.

8.3 Objects Produced in La Banda with Local Materials:

There were many artifacts stored, deposited, worked and transformed in La Banda. Many of the evocative or exotic pieces are described below. While exotic goods have been found throughout Chavín, this sector seemed to have an unusual abundance of diverse stone and shell objects, suggesting these people used or at least had a special interest in exotic things.

8.3.1 Bone Beads:

Beads (Figure 8.1) made from camelid long bones, predominately from the metapodials but also the metacarpal and metatarsals were used. The bone beads were a common find in the area surrounding the ceremonial hearth, ASD 7. These were found both completed and in various states of production. The raw material for producing these beads was found next to the final product. This is an example of material good manufacture in the area that appears to have been left in an unfinished state. There were no instances of goods being deposited in the monumental center along with the raw materials for their production suggesting that these ceremonial elements were in fact produced outside of the ceremonial precinct itself, i.e. *Caracoles* and *Ofrendas galleries*. Bone processing workshops were also found underneath the modern town of Chavín (Burger 1984:227).

Figure 8.1: Bone beads from La Banda, A Bone beads and worked bone. B. Bone beads with metapodial fragments. Scale bars are in 1cm segments. All scale bars in figure in this chapter are 1cm.

8.3.2 Lithic Eye OrnamentPiece:

In the feature area, ASD 7 in Figure 6.10, where all of these artifacts were found there was also a lithic object, most likely of limestone, constructed to look like an eye (Figure 8.2). This piece would have been another possible addition to an outfit to be used in the ceremonial center. The form of the eye differs from most of those depicted in the iconography, the placement of the pupil in the center of the eye, which initially appear to be more realistic than the usual placement of the pupil near the edge of the eye. This form seems to occur most commonly in procession representations (both the cornice, and the Circular Plaza plaques have this form of eye?); probably many humans who are in natural or only slightly transformed state are depicted with these oval eyes; in fact, it might be a key distinguishing element of human forms to have such an eye (John Rick, personal communication).


Figure 8.2: Lithic Eye ornament Carving, scale in cm.

8.3.3 Polished Stone Lithic:

This polished stone piece (Figure 8.3) was produced by an artisan of tremendous skill and patience. The production process is described in Appendix J. The piece was recovered in several units, and appears to have been broken cleanly into four pieces in the past. While there were no pieces of similar skill or style found in the excavations, the stone "staff" does initially appear to be similar to other fine pieces produced by master lithic producers found elsewhere across the site (Appendix J). Those pieces also had elaborately smoothed bi-face edges. The singularly distinctive length of the Chavín piece may have been the reason for its fragility. The piece came from four unit areas: (K13 III, feature 1, K14 III, J12 II, J13 III), all areas in or near ASD 7.

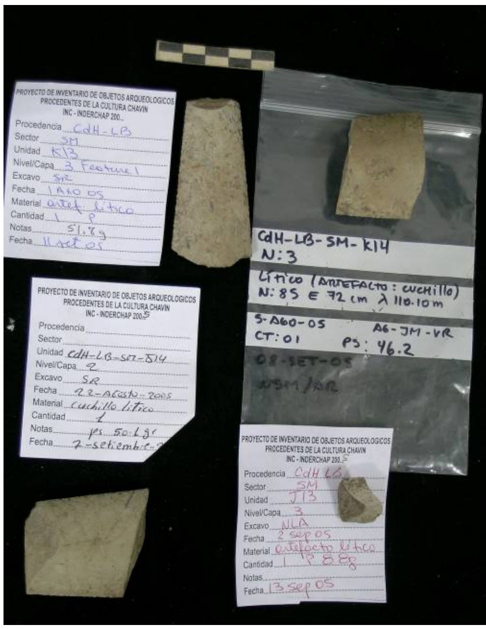


Figure 8.3a: Elaborate lithic piece   Figure 8.3b: Lithic piece joined together

8.3.4 Large Polished Stones:

These two stone slab pieces (Figure 8.4) discovered in the level five, slightly above the layers where cultural levels transitioned into natural sand layers in unit levels at the cusp of early settlement (G14 V, feature 2). These stones were apparently used as decoration plaques or as drain coverings (Appendix J). The large stone pieces (aprox. 25cm by 35 cm in size) contained a large depression in the center and beveled edges surrounding that. Future examination of these pieces for the presence of starch grains should clarify theis issue of its potential use in the past. These stones were recovered from the rubble fill of AD D. This area to the west of AD A was not completely excavated but the fact that the pieces were broken and placed in rubble fill lead us to conclude that the pieces were no longer useful.

Figure 8.4: G14 V, Large Stone Plaques

8.3.5 Cupisnique Style Ceramics:

Ceramics of a clearly non-local style were rare in the La Banda Region. The large majority of the ceramics were Janabarriu style or else non-identifiable ceramics of no discernable origin. There were a few notable exceptions to this pattern and the most common form of non-local ceramics were those that appeared to fit into the style that is sometimes called “coastal-Chavín” but more commonly known as Cupisnique style ceramics (Figure 8.5). This stirrup spout vessel was found in the pathway of AD C and this casual deposition leads me to surmise that one possibility is that it was not a highly valued piece and that it may have been produced locally.

Figure 8.5: Stirrup spout vessel found in K15 IV

8.3.6 Carved Animal Bones:

Four bone pieces were uncovered that are portable iconographic images carved in the Chavín style. They were found in AD B away from the floor in main occupation levels. The precise incisions and carving would have required a great deal of skill on the part of the artisan as well as the time necessary to create such detail. Some four of the six pieces are highly modified whereas the others simply had carvings etched into their surfaces. Bone pieces similar to these appear across the site and may have been an artifact easily carried away by pilgrims or other visitors to the site.

Figure 8.6 Carved bones, A: Carved bone fragment from J12 III, B: Carved bone artifact from J14 IV

Figure 8.7 Carved bones, A: Bone artifact from L15 V, B: Bone artifact from G14 IV W

B) Bone Pin (*Tupu*) and Possible Bone Snuff Spoon:

These two bone pieces were carved for different purposes. The piece to the left in Figure 8.8 appears to be a bone snuff spoon, used for serving tobacco or hallucinogenic plant compounds. It was carved out and could have held small amounts of liquid or solid material. The bone *tupu,* needle/pin, on the right (Figure 8.8B) would have been used to hold a manta, tunic or shoulder wrap in place. It is known that in later times *tupus* where made from bone, wood, and metal. This large piece, over 7 cm in length, was found near carved shell artifacts illustrated in shown in Figures 8.10, and 8.11.

Figure 8.8 Carved bones, A: carved spoon from K15 III, B: Bone pin from K13III

8.4 Objects Produced in La Banda with Outside Materials:

This section presents the objects uncovered in the La Banda excavations made from non-local materials. After presenting these materials and analyzing some of their possible sources, I discuss some of the materials that were not found in La Banda but should have been present.. The non-local materials provide clear insights into the trade networks and the routes of pilgrims that arrived to the site.

8.4.1 *Choromytilus chorus* and other marine shell:

The distinct mollusk genera found in La Banda were brought in from different latitudes along the Pacific coast of South America, and potentially arrived along different entry routes. After being transported to Chavín they were differentially processed and deposited across the site as well, further suggesting that different neighborhoods might have not only had different occupations but different trade links with communities outside of the valley.

It is well established that many marine species are ecological indicators of specific microenvironments and that some marine mollusks can only survive in very distinct climatic regimes (Claassen 1998). The classic example in Andean archaeology of a mollusk subject to such ecological constraints is *Spondylus princeps* which live in warm water like that off of the coast of Ecuador (Burger 1995; Sandweiss et. al 2001). The most notable constraint on the viability of many Pacific species is the havoc that El Niño Southern Oscillation (ENSO) events can cause. Two of the most common species found at coastal sites that are also used to establish the changing frequencies of El Niño events in antiquity are *Mesodesma donacium* and *Choromytilus chorus (*Sandweiss et. al 2001*)*. These species are not able to survive in the warm waters that come with ENSO events, but were readily accessible shoreline animals that formed a regular portion of the central Peruvian coastal diet, and were generally the most common component of shell middens between 3850 and 850 BC (Sandweiss, Maasch et al. 2001). *Choromytilus chorus* may have been a species of ceremonial importance before the widespread use of *Spondylus sp.* in Andean rituals (Sandweiss, Maasch et al. 2001).

As Sandweiss *et al.* (*2001*) explain, there is evidence that there was greater variation in ENSO events between 1250 and 850 B.C. By 850 B.C. ENSO events became more frequent, and the microclimate suitable for *Choromytilus chorus* was thereby more restricted. This means that they would have been more difficult to gather on the central coast of Peru during the Early Horizon/Formative times, because they would have only been able to survive further south, south of the modern Casma River,.

Table 8.1: Marine shell species identified from La Banda 2005 excavations.

Species	Count
Choromytilus chorus	55
Perumytilus purpuratus	7
Aulacomya ater	3
Argopecten purpuratus	5
Eurhomalea rufa	2
Oliva peruviana	2
Donax obeselus	4
Natica sp.	1
Mesodesma donacium	1
Spondylus princeps	1
sea snail *cf. Thais sp.*	3
unidentified	2
Thais chocolate	1
Tegula atra	1

Table 8.1 depicts the numbers of individual marine species recovered from the 2005 excavations. The species identifications (Figure 8.1) were completed by Natali López Aldave who confirmed them using standard references (Alamo Vasques and Valdivieso Milla 1997; Osorio and Piwonka 2002). *Choromytilus chorus*, n=55 out of 88, was the dominant species in the assemblage. While the other environmentally sensitive species mentioned in this report (*Mesodesma donacium*) was rare in the La Banda assemblage, n=1, its presence must still be noted. These species not only provide direct evidence of exchange but also are indicative of broader environmental conditions. The shell samples recovered (see Figure 8.9 for a representative image) from the La Banda excavations confirm that the most likely coastal source of these shells at the time of La Banda's existence (850-500 B.C.) is between 7-9 degrees south latitude, the central coast of what is now Peru.

This coastal region was less prone to El Niño events at the time of La Banda's initial construction making the shells not common on the central coast after its occupation, after 850 B.C. ., "*M. donacium* and *C. Chorus* remained minimally present in the Casma Valley past 2.8ka" (Sandweiss et al. 2001: 604)."). These shells may have initially come from a coastal source due west of Chavín, but if they were transported to Chavín at a slightly later phase, their most likely source would have been from regions to the south. The evidence presented here reveals that the distinct mollusk species found in La Banda were gathered from different portions of the Pacific coast of South America. After being transported to Chavín they were differentially processed and deposited across the site, not only La Banda.

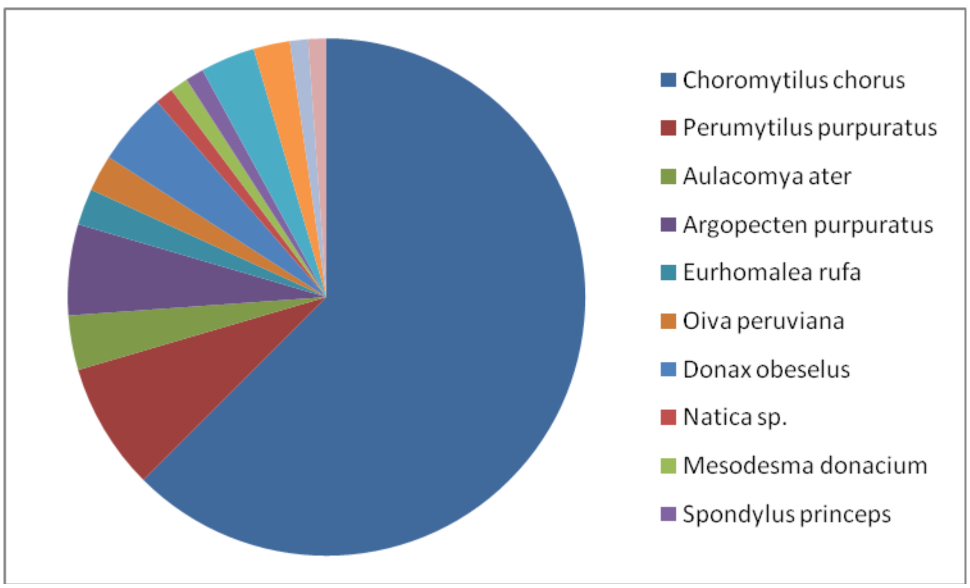


Figure 8.9: Marine shell taxa found in La Banda

8.4.2 Carved Exotic Bone:

There were several other artifacts of non-local origin in the La Banda Sector. The shell goods were clearly exotic goods but there were also several bone artifacts (Figure 8.10) that could not have been produced from local animals. The largest animals in the highland Andes are camelids and the largest camelid bone is the scapula. The carved triangle and circular bone pieces recovered in La Banda measured well over 15cm, thus making them larger than camelid scapulas.

My immediate assumption was that these bone artifacts were from marine animals, which is a statement that could be confirmed via isotope analysis. Marine mammals have the highest nitrogen values of all animals. The most likely possibility is that these bones are from whales. Thus, it is highly probable that marine bones were transported to Chavín and worked in the La Banda region. There were no complete marine bones found, unlike the case of camelid metapodials, so it is unlikely that large quantities of these bones were brought to the site at any time.

Elaborate effort was necessary to transform the marine bones into the artifacts that were found in La Banda. The bones contained no remnants of their original cortical surfaces, they were leveled and polished to such an extent that only the interior material remained. Initial analysis suggests that the pieces were carved into their final shape, then holes were carved into the pieces, and finally they were polished. Holes were placed in the objects to allow them to be worn as ornamentation by priests or other actors. There are similarities between these carved pieces and the ornamentation seen on the deity-like figures in the iconography of the ceremonial center.

The two fragments (Figure 8.10) shown below may have been used as pectoral ornamentation or as pieces that hung from the ears. The only piece that does not have an immediate corollary in the iconography is the carved triangle. While the triangle is the only bone fragment to have a large empty space present in the middle, it does have similarities with the other carved bones. It is smoothly polished and contains drilled holes, presumably to enable hanging the piece as personal ornamentation.

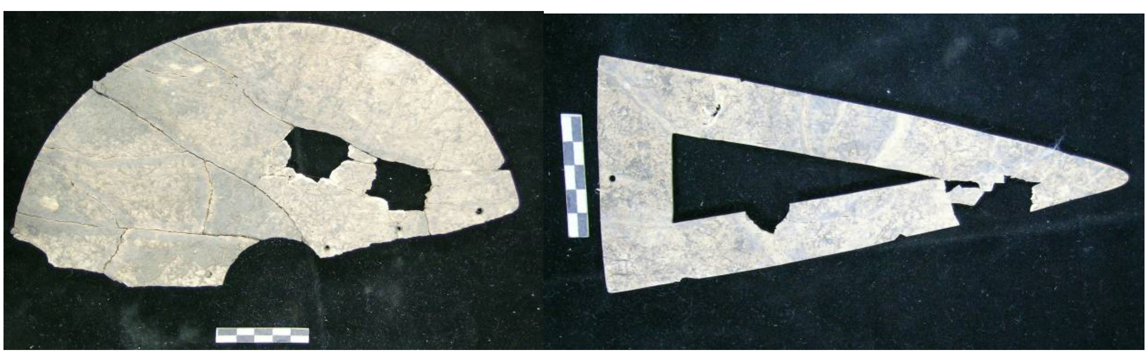


Figure 8.10 Carved bone A: Carved pectoral piece, K13III. B: Carved Triangle, K13 III.

8.4.3 Painted Marine Shells:

In unit K13, in addition to the bone artifacts (beads and carved pieces) there were also five painted marine shells (Figure 8.11). Red pigment (presumably cinnabar) covered the shells (*Argopecten purpuratus)* and there were holes drilled in the lower center portion of the shell. The drilled holes would have enabled people to hang the pieces on clothing, or use as adornment. This capacity to wear the piece means that all of the prominent artifacts found in unit K13 were both portable and wearable.

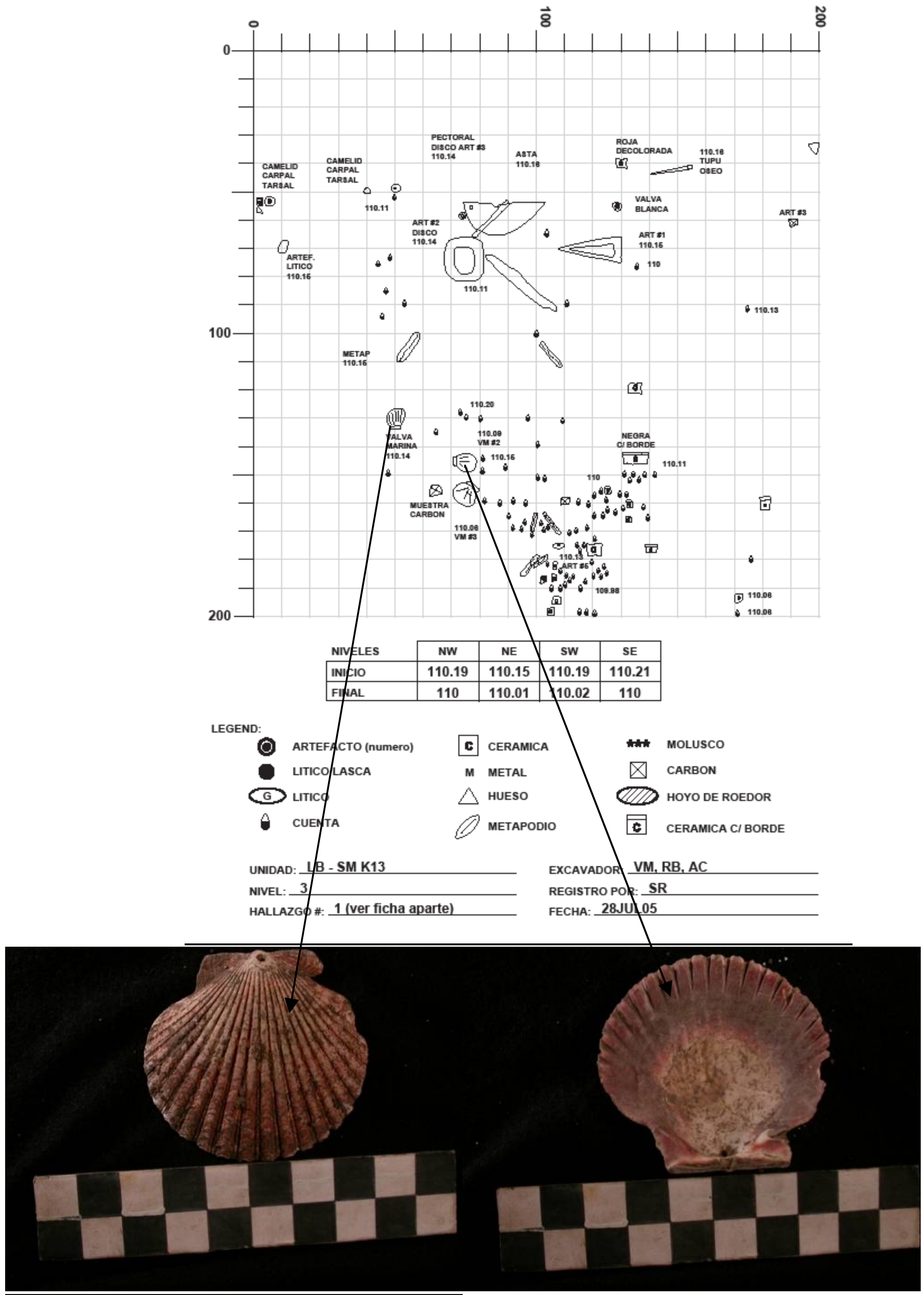


Figure 8.11Marine Shell Ornaments: A: Unit level drawing. B: Carved and painted shells in unit level drawing. Scale bars are in 1cm segments.

8.4.4 Fern Fossil:

This fossil impression on a stone (Figure 8.12), was found in K15III. This singular example of a fossil was found near what appears to be the center of shell production in the excavated La Banda Region, around the ceremonial hearth in ASD 7, the main production area. There is no evidence that this fossil impression was worked or modified and this leads to the likely conclusion that this piece was carried to the area due to its atypical qualities. The clear imprint of a fern on the surface of the rock is striking but this type of plant imagery is not common in the site iconography.

Figure 8.12: Fern Fossil (K15 III)

8.4.5 Coral

One piece of coral (Figure 8.12b) originated in coastal waters and was transported to the site, perhaps in conjunction with the other marine goods found during the course of excavation. The piece was not found in conjunction (unit level M13 IV) with other prominent artifacts and it is isolated from other artifacts of clear Chavín style. There were no clear marks of human origin on the piece and the lack of modification makes this ecofact stands out as all other exotic pieces of such size has evidence of human alteration. It is possibly of the genus Porites.

Figure 8.13: Coral fragment (M13 IV)

The nearest sources for coral are Pacific Islands west of mainland South America and the area directly off of the coast of Colombia. While coral reefs undoubtedly had slightly different distributions in Chavín times the ocean temperatures off of the coast during Chavín times would not have been capable of supporting warm water corals

(Sandweiss, Maasch et al. 2001). The few species of cold-water corals that have been documented near South America have been found near the Galapagos Islands, although future research may expand the extent of these species' habitat range (see http://www.icriforum.org/secretariat/cold/coldcoral.html).

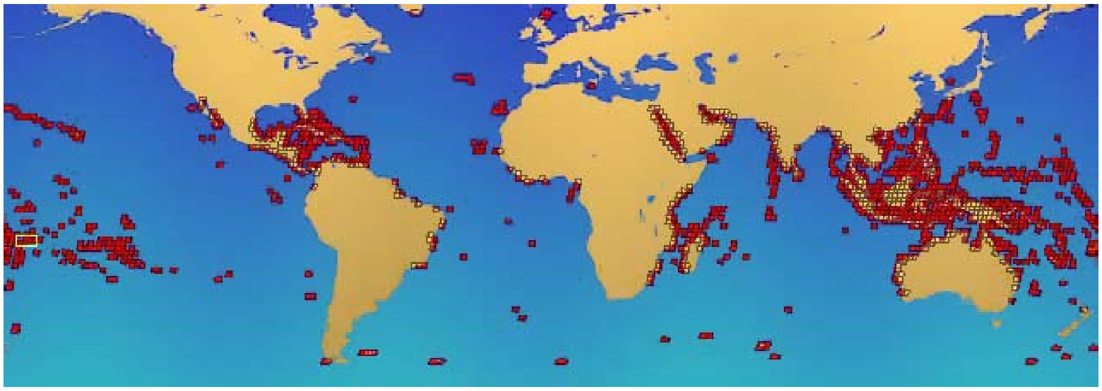


Figure 8.14: Modern locations of coral reefs. Wikimedia commons licensed from: http://www.nasa.gov/images/content/68211main_landsat_coralreef_m.jpg

8.4.6 Obsidian:

There was only one worked obsidian point that could clearly have been hafted. Obsidian debitage was present throughout the levels. However, obsidian points were very few. Those that were found were found in upper, post occupation layers. The object below (Figure 8.15) was found in one of the main occupation levels, in K11 III. There is a wide literature on obsidian trade and manipulation in the Andes, and much of this due to the pioneering efforts of Burger (1984) and colleagues (2000b; 2000a). This literature reveals that the nearest source of the vast majority of obsidian found at Chavín was Quispisisa, which was 600km to the south (Burger and Glascock 2000). All of the obsidian at Chavín would have been traded in or brought in as offerings and as Burger has noted in post-temple times, the quantity of obsidian in the region appears to have fallen.

Figure 8.15: K11 III

8.5 What is Missing?:

The materials discussed above are all objects that would have been considered to be of greater value than everyday objects. It is worth wondering what other objects we would presume to find in a workshop area outside of the monumental center.

Snakes and caymans:

Given the preponderance of snakes and caymans in the iconography of Chavín it is striking that they do not appear in the artifacts recovered at La Banda, either in the faunal assembalge or in any readily discernable representation in the carved bone or ceramics excavated. It may be that materials representing snakes and caymans were produced elsewhere or perhaps they were associated with death and will be found at later points in time when the burials from temple times are found.

Textiles:

Textiles were the most elaborate and fully developed Andean art form, of which several examples of Chavín style (Burger 1995) that appeared on the coast, were not present in these excavations. Textiles themselves were unlikely to preserve at a highland site such as Chavín. Bones used in the weaving process have been found in previous excavations (Burger 1995:162) but bones fashioned for use as weaving tools were not found in the La Banda excavations either, suggesting that these people did not produce their own textiles, and further supporting their specialist status as bone and shell manufacturers.

Gold:

While gold has been found in limited quantities both within and without the monumental center (Burger 1984; Rick 2005) it is not a common occurrence. Gold is a more common find at other highland sites of the Early Horizon, such as Kuntur Wasi (Onuki, Kato et al. 2000).

Large Stonework

The main temple at Chavín is an enduring monument to the labor of the past inhabitants of Chavín. The andesite, sandstone, and other stone material that were carved to make the temple and its accompanying iconography were generally produced from stones available within 50km (Turner et. al 1999). However, to date there has not been evidence found for a large stoneworking workshop located on or near temple grounds. There is little evidence that these large stone pieces were produced in La Banda and that work must have occurred in another sector of the site.

8.6 Conclusion

The artifacts described in this chapter came from both the local highlands, the coast and the distant highlands of the Andes. It is possible that materials from the eastern jungle did arrive at Chavín but there is no concrete overt evidence for these goods in this residential sector. It has been postulated that access to the regions of Peru (*costa, sierra, selva*) explains why Chavín was located where it is (Burger 1995). Figure 8.16 illustrates the diversity of sources of the raw materials that were worked or deposited in La Banda. The movement of goods over long distances and across mountain chains indicates that there were elaborate trade systems in place during the Formative. It is clear that coastal goods were highly valued by the residents of La Banda and it is likely that these goods moved up and down the coast in watercraft, which were then transported up into the highlands.

Figure 8.16: Map of the northwestern part of South America with sources of raw materials found in La Banda. Modified from Wikimedia Commons: http://en.wikipedia.org/wiki/File:SACN_member_states.jpg

Most scholars have argued that Chavín did not rise to become a center of regional importance and authority due to its control of specialized goods and objects of exchange, but rather that these costly goods functioned within a religious system which employed exotic goods in rituals and processions (Burger 1995; Rick 2005). The coastal artifacts present in the La Banda sector may have been brought to the site by pilgrims or residents. These pilgrims would have travelled to the site in search of greater spiritual knowledge or for access to an important oracle or deity (Burger 1992). After their visit it appears that the pilgrims went back to their home communities impressed with the imagery of Chavín (Kembel and Rick 2004) and then set about recreating the iconography that they saw at the site.

One element that makes the objects discussed in this chapter valuable is the skill and ritual knowledge that went in to creating them. While many of the materials were undoubtedly nonlocal in origin they were all significantly transformed through the production process. Stones that may have been used for smoothing edges or drilling holes were found around the artifacts.

They inhabitants of this sector of La Banda appear to have lived near where they worked. They were close to the monument and possessed or produced many of the accoutrement of priests. The physical proximity to the ceremonial center and the location of the central production area, ASD 7, so close to the patio floor, leads me to the conclusion that the ritual participants themselves may have been producing their own regalia. It is also likely that the 'priests' (possibly male and female) would not have worked alone. Their families would have lived in these spaces as well with them. The location of these artifacts is show below in Figure 8.17.

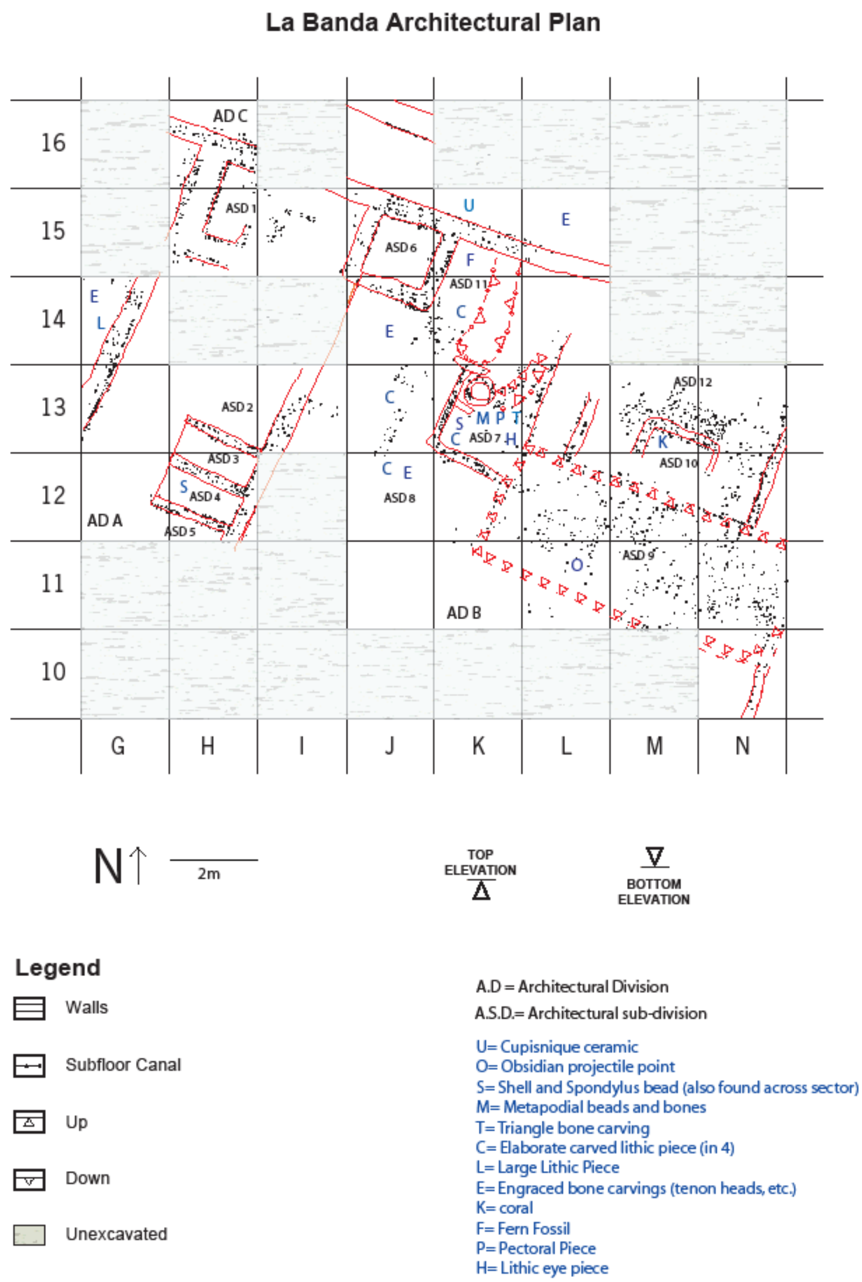


Figure 8.17: Locations of artifacts produced in La Banda and discussed in this chapter.

Children and other familial members are often sources of power and wealth in large part because of their labor contribution to the household production. In the Quechua Language (Runa Simi) of the Inkas the term for orphan, *wakcha*, was also translated to mean poor (Cummins 2002). The one without relatives is poor and those with large families are considered rich. This is in part because if you cannot call on the labor of relatives then you have no access to production. A person with a social base was able to mobilize labor and this labor most likely would have included the work of children. While they may not have performed the highly precise incisions or paintings on some pieces, children could have performed the initial smoothing and polishing of raw materials. These could have been a family productive affair.

The artifacts depicted in this chapter are not solely considered to be objects of value due to our modern conceptions of trade and distance. Numerous artifacts uncovered in La Banda in 2005 have direct corollaries on the iconography from the monumental center (Figure 8.18). The deity figure and the priests marching in procession seen in the image below are both seen holding *strombus* shell trumpets and *spondylus* shells, as well as wearing objects that we now believe were fashioned from animal bone and uncovered at La Band around ASD 7. While some of the bone may have been from marine animals the majority of the bone beads and other bone goods were made from terrestrial species.

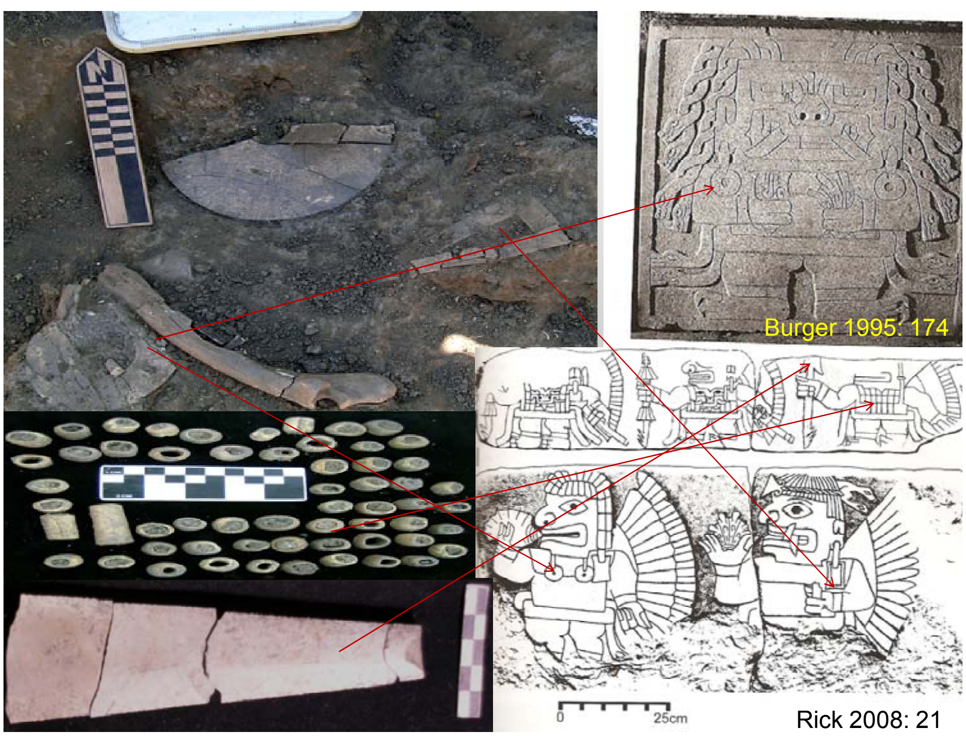


Figure 8.18: Artifacts in relation to iconography from the monumental center.

Religious ideology was clearly created and reinforced through processions and other ritual movements. The priests' regalia were the material manifestation of their power and access to exotic goods. While the priests' status and power negotiations with larger communities may have occurred in the ceremonial core some of the crafts described in this chapter were created in the La Banda region and most likely worn in ritual processions in this core across the river. Additionally, the rituals that occurred in the monumental center may have been initially created and practiced in the patio area, steps from where they had created the ceremonial regalia.

In this chapter I have presented evidence about which particular objects were produced in the La Banda and what those objects may have been used for in activities in the monument and in the domestic sphere. The preponderance of bone and shell remains leads me to the conclusion that these people were focused on producing these goods and not other crafts like textiles and stone carvings. In particular, the area around ASD 7 appears to be a center of craft production and the people who worked there most likely lived in the area near ASD 10, further suggesting a ritual connotation for these objects. Overall the vast majority of worked materials, of local and non-local origin, were found in AD B and this was the focal point of craft production practices in the La Banda sector.

Chapter 9: Living at Chavín

9.1 Living at Chavín

This chapter synthesizes data presented in previous chapters. Four major themes will be addressed: ritual at La Banda, domestic life, trade and importation, and production and exchange practices of the inhabitants of La Banda. When discussing each theme I compare the finds from my La Banda excavations with documented finds from other sectors of Chavín as well as artifacts recovered by other projects. Additionally, I will analyze the La Banda finds in comparison with other projects that have worked at the site. The end of the chapter returns to these themes and elaborates on how they have been developed throughout the dissertation. Finally, there will be a discussion of the most productive paths for additional research in the sector and I will pose questions that have not been resolved but could be addressed in the future.

9.2 Ritual at La Banda

Ritual at Chavín was introduced in Chapter 4. While the previous discussion of ritual analyzed theorists' conceptions of ritual life at Chavín, here I present my own impressions of ritual in La Banda and the broader Chavín world. Ritual activities were also touched on in Chapters 6-8 in relation to architectural and artifactual finds in La Banda.

The site of Chavín is not built along an axial line (Moore 1996). Rather the central spatial arrangement of the site is a U-shaped temple that faces the rising sun in the east. The La Banda sector is in the east facing the opening of the U. Pilgrims who visited the ceremonial center most likely came from the coast or other western areas if the imported goods are an indication of their origins. The major pathway that currently connects the Callejón de Conchucos to the Callejón de Huaylas passes by the peak of Mt. Huantsan and descends into the valley of Chavín through the west field sector (Figure 2.1). Visitors to the site coming from the west would have seen the back of the temple and the square plaza in front of that with the La Banda sector and its attendant houses visible in the relatively flat area that exists before the valley starts sloping back up into the cordillera.

Chapter 6 described how the Mosna River separates the main temple from the La Banda sector and mentioned that this river would not have been a major barrier limiting travel between the sectors, particularly in the dry season when the river is low. Thus it is possible to envision processions beginning in the La Banda sector and continuing into the ceremonial center. Even if these long processions did not take place the inhabitants of La Banda were well placed to easily cross over to the temple with their ritual paraphernalia and participated in rites in the center.

In Chapter 4, I reviewed Moore's (2005:220-222) convincing argument that there were canonical priests at Chavín and these practitioners would have referred to dogma and formal learned knowledge when leading ritual activities. One practice that was apparently a common feature of rites at the site was the procession. Processions are organized movements of people and goods and these structured activities were depicted in the site's iconography (Figure 8.16). Processions are instances when practice and structure interact (Bourdieu 1990). In another formulation, "Structured agency is exercised in sequences of practices that recapitulate and transform prior actions (Joyce and Lopiparo 2005:365)". The movement through space is a moment in time where formal and repetitive action is undertaken and the priests had interactions with different agents viewing the procession. The changing historical situations meant that these were also moments when practice could transform structure.

The *habitus*, of Chavín's priests would have included knowledge evolved from shamanistic practices, but by the time the temple was fully functioning these practices had most likely been codified. At Chavín *doxa*, was formalized to such an extent that they advertised its formal aspects on the site's iconography. This formal knowledge was internalized and the power of this knowledge was enacted in rituals for both local people and pilgrims. While the power of this ritual knowledge is readily acknowledged by everyone who has worked at the site, see Chapter 4, there is debate surrounding the goals and societal function of this priesthood. While the priests can be seen as attracting visitors with their advanced knowledge, it is also presumed that they were manipulating their knowledge to gain more power and prestige for themselves (Rick 2005).

What I propose is an alternative reading of priestly practice. It is possible to envision a temple priesthood that did manipulate knowledge and power to gain greater control of resources for themselves while at the same time actually believing in the gods and systems that they enacted in rituals with their followers. In my conception of Chavín's past *doxa* not only controlled the credulous masses, but the priesthood and the elite were also constrained in their actions by their beliefs. Any system that attracted pilgrims had to deal with outsiders and their foreign behavior, accepting or changing the new actions into acceptable practices. While the priesthood was restricted in what actions they would have considered permissible it would not have completely limited them from attempting to expand their power base and entrench their heightened forms of authority. I propose that these participating priests used all means (musical instruments, elaborate galleries with distorting environments, sounds and lights, the ingestion of hallucinogenic plants, etc.) to manipulate the senses of newcomers and new believers and bring them into the system. They may have thought that the more believers they could attract to praise their gods the more power they themselves would accrue.

While processions and rites were undoubtedly enacted in the ceremonial center there were also ritual structures found in the La Banda sector. The formal hearth found in unit K13 was a unique find. This structure reminded many of the excavation team of *mito,* defined below, type structures revealed in other areas of the site of Chavín. The West Field had a more formal mito hearth and chamber (Contreras 2007). Additionally, the 2003 season revealed another mito type structure in the La Banda sector (Figure 9.1). This suggests that local residential sectors had their own local ceremonial precincts in addition to the centralized ceremonial core we all focus on usually at Chavin.

Figure 9.1: Photo of mito type hearth found in 2003, unit CdH-LB-19, underneath the hearth was sterile sediment. N→. Photo courtesy of J. Wolf. This was a 2 x 2m unit.

The Mito Tradition and the Kotosh Religious Tradition are two major religious traditions of the Late Preceramic, in the Central Andes, whose chronologies are currently being debated (Contreras, in press). The timeframes of these traditions are in flux, but the basic tenets of their religious architecture are agreed upon. There are five features typically used to define a mito hearth. They are: an entry and exterior step, a floor, a lateral bench, a central circular hearth, and a partial façade (Izumi and Terada 1972; Burger 1980; Burger 1985; Bonnier 1988; Bonnier 1997; Contreras 2010). The hearth illustrated in Figure 9.2 has most of these features but departs from these norms in a number of ways. The hearth is accessed from the patio floor via a step down and there is a partial bench located behind the hearth. While it does have a ventilation duct (another attribute), it was not formally interred and does not have a smooth plaster floor.

The formal hearth uncovered in 2005 (Figure 9.2a and 9.2b) was smaller but was surrounded by air ducts and channels, which are shown in the photo and illustration. This is located in ASD 7, which was where the workshop was also suggested by the finds there (idealized drawing in Appendix I). It appeared that the ritual goods produced in this area were made with ready access to the hearth. While ritual artifacts were found in states of production in this ASD, it also was an area with easy access to the patio of ASD 9. This 'mito' hearth appeared to be the ideal place for domestic ritual activities. This is not to discount its possible utilitarian uses but rather this statement that takes into account the unique layout and construction of the hearth. A stone walled hearth with stone air ducts is quite different from the other hearths found in the excavations at La Banda, which were small and informal (see Figures 6.8 and 6.13).

Figure 9.2: Hearth in ASD 7, A: the plan map includes the spanish word, fogon, for hearth, B: Photo of mito-type hearth found in CdH-LB-SM-K13.

In this hearth we see a melding of terms that are generally considered diametric opposites. Here is a hearth in a domestic setting that is clearly distinct from the surrounding simple hearths and is modeled on forms that may be considered to be solely ritual in purpose. It was a ritual hearth in a domestic setting. This mixing of the sacred and profane was not uncommon in the ancient Andes (Dean and Kojan 2001; Hastorf 2008). This hearth is a place that may have provided room for the small daily acts of gratitude, praise, and negotiation that are common elements of religious practice.

The practice of ritual was diverse and varied across sectors of Chavín. My analysis was influenced by Bell's (1992, 1997) work which analyzes ritual as a part of general social activity. In this chapter I discussed ritual activities and related them to issues of trade and production. However, it is also important to acknowledge the formality present in ritual, which makes this a special activity. One of those features is liturgy which informs the practice of rites. Moore (2005) convincingly demonstrated that it is important to consider the differences between canonical priests who reference a liturgy and ecstatic shamans. I find the argument for priests to be compelling and I have referred to them, and the activities they engaged in, as such throughout the dissertation

9.3 Domestic Life

The La Banda sector has been the focus of this dissertation, but as was discussed in Chapter 6, there have been a number of other projects that have also worked in the sector. These early projects did not uncover evidence of extensive domestic settlements and it was not until the road project of 2003 plowed through the area that significant evidence of domestic settlements were found (see Figure 9.3). The initial 2003 excavations (Figures 9.4-9.6) uncovered evidence of a large proto-urban settlement which initially seemed to reveal elite and commoner settlements (Rick 2005:72,74,75; Vaughn 2006:321) . However, the 2005 excavations forced us to reassess this conclusion. My excavations were conducted due south of the area considered to be a commoner settlement (Figure 9.4). What we (the Stanford team) excavated was a formal patio and large high walled structures that seemingly fell more into the high status category. We also realized that the 2003 excavations in the less formal "commoner" areas simply did not have the time and resources to complete a thorough excavation. The National Institute of Culture's excavators did not dig deeply enough to reveal all of the architecture in the area. It is likely that further research in this area would also reveal extensive and well-developed settlements. Future research is needed to assess and contextualize whether or not, "craft production is directly associated with the elite remains at the site (Vaughn 2006:321)". Additional excavations would also allow us to differentiate clearly what an elite house was like and what a commoner house was.

Previous research outside of the ceremonial center also encountered differences that were interpreted as the difference between high status and low status areas (Rick 2005). Burger's (1984) significant work in sectors outside of the main temple to the north, uncovered evidence of Janabarriu status differences between elite and common settlements. While these people did not have significant differences in the types of meat they consumed (Miller and Burger 1995:445) they did have distinctly different access to high status material goods (Miller and Burger 1995). As previously discussed, the 2005 La Banda excavations muddy these differences as areas within La Banda that were previously postulated to demonstrate status differences now do not appear to do so. It may be possible that the inhabitants of the sector were all of a similar status level, artisans, priests, and producers of materials for the temple, and that distinctly higher and lower status communities were found outside of this sector. These fuzzy differences should force future investigators to reconsider their assumptions and to investigate the possibility that many relatively egalitarian communities existed within the Chavín sphere.

The La Banda sector occupies a unique position when we discuss status differences. This was an area physically separated from the temple by a river; yet within the discussions of how La Banda fit into the broader Chavín world, there is also the question of how the small sectors, architectural divisions of La Banda were different from one another. There were two main living areas uncovered in the 2005 La Banda excavations, AD A and AD B. AD A had only light evidence of occupation use. The densities of bulk, decorated, and diagnostic ceramics were relatively low as were the densities of macrobotanical and wood remains, (see Chapters 6 and 7). While special artifacts, such as the spondylus bead and painted clay floors were found there, in general AD A was an area that appeared to be more lightly used than AD B. The patio group area, AD B, contained greater evidence of intensive use. Major artifact classes, such as ceramics, lithics, bones, and macrobotanicals, were found in higher densities here. Thus, there is evidence for use intensity differentiation between the two ADs. These side by side living spaces do not contain such distinct artifact types or densities of remains to argue that they were occupied by people of different statuses. Rather there is evidence for one area being a space of greater use and the other area being a space which may not have been as heavily occupied during its household life or kept cleaner. This intimate study of Chavín domestic areas reinforces an analysis of household life where power relations and internal struggles occur in the most routine of settings (de Certeau 1984). Some of the tactics of these individuals are visible in the ecological remains preserved in the archaeological record.

Outside of their households, the residents of the La Banda sector were engaged in pastoral and agricultural activities. The presence of bones from all portions of the camelids (Figure 7.29 and 7.31) indicates that camelids were most likely kept near the site and it is common today for children and elderly people to be responsible for the care of herding animals. Thus it is likely that children would have walked animals out from the La Banda sector up to the high grasslands to feed. The lack of dung in the macrobotanical remains is evidence that the camelids were likely not housed within the compounds of the La Banda sector. The age profile of the camelids (Appendix N) reveals that the animals were commonly eaten before the age of two and the older animals were kept nearby, most likely transportation.

The macrobotanical remains reveal a community thoroughly embedded in complex relationships with the surrounding ecological zones. In particular, they indicate that the inhabitants of La Banda had ample access to firewood. If we assume that the modern presence of *Polylepsis* sp. trees correlates to areas covered in Chavín times, then the inhabitants of La Banda would have had to walk up from the valley floor in order to gather firewood. This was also an activity likely to have been performed by children. The macrobotanical remains also indicate that the diet of the La Banda people was that of a typical highland community, i.e., dominated by tubers and quinoa with the occasional inclusion of maize and beans. There was little macrobotanical or microbotanical evidence for the consumption of squashes but it is possible they were also consumed in the sector. By temple times Janabarriu ceramics were common and dried *mate* remains may not have been as necessary for use storage containers. These plant and animal remains reveal a community that consumed food near where they produced ceremonial goods. The data do not reveal overt evidence for status distinctions between site sectors. The overall remains recovered in the West Field and Wacheqsa sectors were similar to those found in La Banda (Chapter 7).

Finally, in order to more fully understand domestic life at Chavín, additional paleoethnobotanical work is necessary, but it will have to take into account the poor preservation in the area. While there were scarce remains, these finds did provide insights into the subsistence practices, spatial configurations of domestic space, and environmental management practices of La Banda's residents. Future work should take larger macrobotanical samples in order to gain greater access to the burnt remains of past plant use.

9.4 Trade and Importation

There were many interactions between the residents of La Banda and people from outside the valley. These encounters with animals and plants from outside of their highland world are depicted on the site's iconography, but as Donald Lathrap (1973:103) stated, "I also suspect that cultigens more resistant to cold than those shown on the Obelisk would make up a large, possibly predominant, part of the fecal content". This section will analyze this tension between the many levels of evidence that show that the residents of La Banda had access to exotic goods and the many examples of these residents living a typical highland Andean existence focused on local crops and animal husbandry.

Out of the varied exotic goods that arrived in La Banda, marine shells were the most conspicuous. While most of these shells clearly came from the nearest coastal regions, some came from areas further away, see Chapter 8 and Table 8.1. Many of these shells were the same species found in previous excavations outside of the ceremonial center (Burger 1984:259). Shell artifacts were not uniformly distributed across the site, and to date no shell artifacts were excavated in the Wacheqsa sector (Mesia 2007:137) that contained dense concentrations of other artifacts, and is closer to the monumental center than La Banda. The shells recovered by Burger were not worked or painted (Burger 1984: 257-261). Whereas some of the shells found in La Banda had holes drilled in them and were painted red, additionally one *Spondylus* shell bead was found in this sector. This differential deposition of worked shell artifacts shows that certain living areas outside of the site where used for working and producing goods while others were not.

The imported materials that were worked in La Banda are shown in Figure 8.15. These diverse goods were predominately imported from coastal regions. The three sets of materials that were not from coastal Peruvian areas were *Spondylus* shells, coral, and obsidian. Out of these three sets of materials, the coral came from the furthest distance. This source needs further investigation. The large piece of coral was found unworked and may have arrived in La Banda in order to be manufactured into smaller pieces that could be worn by priests. Like many other objects found in the area. *Spondylus* appears in the Huarochiri manuscript as a food for the gods (Salomon and Urioste 1991). In this manuscript the gods eat *Spondylus* in loud chomping bites. In this instance, the shell was found worked as a bead rather than whole as a possible food source. The worked bead fits into the general pattern of the area where many goods were prepared for clothing or physical adornment. Obsidian is a well studied material in the region with the Quispisisa source likely provided over 95% of the obsidian found at Chavín (Burger and Glascock 2000). This source was 600km from Chavín. This material may have been used both as a tool in hunting as well as to cut and prepare other foods and other raw materials. All of these goods reveal that this community located away from the center had broad connections to the world outside.

The plant and animal remains found in La Banda were described in Chapter 7. The vast majority of these remains came from local highland biota. The only clear examples of non-local bones were the marine bones found in ASD 7, which were presumably used in rituals (see Chapter 8). There were bones that initially appeared to be non-local, but were later found to be from local animals. In La Banda a large uncrushed puma arm bone was found near the hearth, K15 III. These bones were quite regular finds at the site and are from animals that may have served as an imaginative link between the highlands and the lowlands. Pumas (*Puma concolor*) are depicted on the site's iconography (Burger 1995). They live in the lowland regions of Peru. However, these animals can also live in the highlands and may have been hunted near the site across temple times. Whatever the case of their origin, these were venerated animals imbued with power.

The plant remains provide insight into ancient landscape management. Wood use was relatively constant across time (Chapter 7), as can be seen when comparing the wood percentages from the Atrium and La Banda. The majority of the samples from the Atrium were from post-temple times yet the percentage of wood still dominants. This finding indicates that the people of Formative Chavín did not overharvest the surrounding forests. It also appears that there was never a dependence upon camelid dung for fuel. There is a need to examine the wood species in order to determine whether or not all of these species are local or if some were imported. If some wood was brought in from other zones then it is possible that people in Chavín times over exploited their forests. This will be learned when a wood identification project is completed.

The people of La Banda were consumers of food and most likely producers of food. The food remains recovered in La Banda were from highland crops. While the houses in La Banda were in some cases literally built on sand these people lived near the sloping arable hills that extend above the valley floor with ready access to fields. In the 2003 excavations a clod breaker was found in the La Banda sector but in general there was scant direct evidence for farming. Based on the evidence presented in this dissertation, it is unlikely that the inhabitants of La Banda were attached or full time specialists solely focused on the production of ritual goods. What is more probable is that the inhabitants of La Banda engaged in both agricultural and manufacturing activities. Throughout Andean history agriculture has been a valued activity, such that even the Inka rulers would ceremonially engage in it (D'Altroy 2002). In Chavín times it is likely that people of all ages engaged in agriculture and food production throughout the year. As was discussed in Chapter 4, it is likely that the ritual calendar reflected this importance and revolved around the agricultural calendar.

This discussion of trade and importation also forces the consideration of ecology and the different regions that provided materials to Chavín. One standout find from the paleoethnobotanical research was that wood as a percentage of samples remained constant. This means that the inhabitants of La Banda managed the forests wisely across time and that they were able to use dung for their fields and in other areas. The historical ecology of a region is important when discussing trade as overexploitation of a resource can leave a community dependent upon outside supplies of goods. At Chavín there is not evidence for the bulk importation of quotidian goods, rather the people of the community were able to supply for their basic needs and solely rely on outside materials for the production of craft and ritual goods. The food was locally produced and the fields do not appear to have been overtaxed.

9.5 Production and Exchange Practices

While production and exchange were discussed in the previous section of this chapter these practices merit further consideration. Objects of value were discussed in Chapter 8 and here I return to discuss some of those goods and what insights they can provide into specific production and exchange activities in La Banda. Ritual goods were undoubtedly produced in La Banda in addition to outside goods also arriving at the site, either via trade routes or carried in as offerings by pilgrims visiting the monument.

When discussing the objects produced in La Banda (Chapter 8) I also discussed materials that were not found in the region. In section 8.4 I mentioned that remains from snakes or caymans, textiles, and gold were not found in La Banda even though they were presumably elements of ceremonial importance. One important aspect of production was not raised in Chapter 8 – the tremendous amount of work that went into stone carving and earth movement required in the core. Silvia Kembel (2001) carefully laid out the elaborate construction process that lead to the construction of the final version of the temple that is visible today. There were undoubtedly lifetimes spent carving stones for the monument and its accompanying iconography. While I did not find evidence in the homes for the tools of these workers, the amount of work and skill necessary to produce the lithic piece visible in Figure 8.6 indicates that the fruits of stone working labor were not confined to the monument. These carvings were likely produced in as yet to be excavated workshop. As Dan Contreras (2007, 2009) has shown there were massive amounts of earth moved at and near the monument, both to alter the Mosna River from its course and to reinforce and support temple construction. The tools needed to move earth may have been basic and many woven baskets used in this process would not have preserved. These two labor inputs are strong reminders that the major chores and work of a community may not always have overtly visible correlates in the material record. The lack of evidence for these activities in the La Banda sector also reminds us that these inhabitants may have been devoted to their own distinct labor.

It is does not appear that other sectors that have been excavated contained areas devoted to the production of ritual goods. While the West Field contained evidence of ritual architecture (see Contreras 2007) and the Wacheqsa Region revealed extensive deposits of domestic goods (Mesia 2007) there were no other sectors that contained units with extensive evidence for the production of ritual goods. That being said, we need further excavations of domestic areas to see if there is differentiation in goods production by neighborhoods across the settlement. Future work in La Banda would contextualize the finds of the 2005 season and help researchers differentiate work patterns across the site.

Chapters 4 and 8 discussed ritual paraphernalia and activities as well as the accompanying personnel who carried out these rituals. There are a variety of social explanations for who could have produced the ritual goods found in ASD 7. These possibilities are that:

- there were specialists who solely worked on these goods,
- there were farmers who lived in La Banda who also worked on ritual good production,
- some of the priests who worked in the ceremonial core lived in La Banda and produced the materials that they used in formal processions and rituals, and/or
- people from outside Chavín lived in La Banda periodically and produced these goods.

While this list is by no means exhaustive, one possibility seems more likely than the others- that the priests of Chavín lived in La Banda and were also responsible for producing the formal goods that they would wear in processions. This seems to be the most likely explanation as the living areas were clean with only slight evidence for farming as a central activity, the goods were found next to a domestic/ritual hearth leading one to believe that this was an intermediary, an important space for these residents as no other region of Chavín contains evidence for production of this sort. While formal Chavín period burials have not been recovered, this does not mean that the priests could not have lived in La Banda. It is always possible that burials were off site, or that they were mummified and those remains have not preserved, or that some other destructive form of burial was practiced.

If Chavín era priests were engaged in the production of the materials that they would wear, then they would control the knowledge of how to produce these materials as well as the knowledge codified in their religious practices. Some of the materials, such as the worked whale bone and the large lithic staff found in four pieces (Appendix J), clearly required extensive specialized knowledge to produce. Thus, I acknowledge that this piece could have been created by a specialist, but the concentration of so many ritual artifacts in such a small space leads me to believe that this type of activity was controlled and access to these goods would have been limited to a select few. Also, the most likely work for a specialist would have been stonework as massive labor inputs were needed at the temple (Rick 2005). Thus, in order to constrain the number of possible people with knowledge of powerful goods it seems likely that the very priests who used these materials in ritual also wanted to control them through every stage of their use life and they were responsible for producing the paraphernalia that they wore.

When analyzing the production of ceremonial goods it is necessary to discuss the exchange of raw and finished materials. The people of La Banda were in exchange networks with communities on the north and south west coasts. As demonstrated in Chapter 8 and discussed above the inhabitants of La Banda had access to goods from areas in modern day Colombia, Ecuador, southern Peru, and possibly Chile. These materials could have arrived at the settlement via a variety of means. The people of Chavín could have gone to the coast to procure the materials directly, materials could have been brought in as gifts by pilgrims, goods could be sent as offerings by rival powers, or materials could have arrived via trade networks and caravans. While obsidian was clearly exchanged across the Andes over long periods of time (Burger and Glascock 2000) many of the other exotic materials, such as marine shells and coral, were not common finds in later time periods and later Horizons. The faunal remains (Appendix N) indicate that the inhabitants of La Banda raised camelids for meat, wool, and work. Thus, they would have had the capacity to travel with their own caravans. This, combined with the amazing diversity of raw material sources, leads me to the conclusion that the goods probably arrived to the settlement via a variety of methods. The ability to draw in outsiders would have increased the amount of exotic materials available to local inhabitants (Burger 1984; Druc 1998) and allowed for local peoples to concentrate on production as well as exchange.

9.6 Conclusion

In this chapter I have discussed four major themes: the ritual at La Banda, domestic life, trade and importation, and production and exchange practices. These four topics were briefly addressed again. Here I have discussed these four themes as they relate to La Banda and other work that has been conducted at Chavín. While some previous chapters solely focused on La Banda, here I have attempted to place the residents of this sector within the broader temple period Chavín world.

It is now clear that objects of higher prestige value, due to their exotic origins and unique qualities, were traded or brought to the site but there was little evidence for the movement of bulk supplies. All of the materials shown in Figures 8.15 and 8.16 were light and portable. Additionally, there were clear ritual uses for many of these materials.

There were not changing percentages in the presence of wood across time, as some basic material was probably locally supplied, nor was there evidence for the trade or giving of exotic food stuffs. Rather it appears that transportation costs were great and only goods of special ritual significance were brought to the site from outside. These materials were things like shell, marine bone, obsidian, coral, and possibly stone. Extensive trade networks do not appear to be the source of Chavín's power and prestige. Rather prestige may have been gained through ritual displays as well as other public and private displays of respect. The public adornments of power were produced in La Banda and the people who made these goods were located at a crucial nexus between daily lived life and the ceremonial activities that occurred in the temple.

Chapter 10: Synthesis and Summary

10.1 Synthesis

Chavín de Huántar is a major early archaeological site in the highlands of Peru, often described as the ritual center of the mother culture of the Andes (Tello 1960). In 2003, a road was being built from the Conchucos valley to the town of Huari that went around the site of the main temple at Chavín, when the construction crew started plowing through a Middle Horizon cemetery. When archaeologists from the National Institute of Culture found abundant evidence for archaeological sites across the millennia they filed a *denuncio* that stopped the road construction temporarily. When local and international teams arrived and started a rescue operation at the cemetery site, they found evidence of a continuous occupation back through the period of the main temple all the way to hunter-gatherer times. The archaeology teams suggested a new route for the roadbed, which was completed in 2004.

About 300 m south of the Middle Horizon cemetery, in an area that the residents of Chavín call La Banda, remains of a proto-urban settlement were found that dates from the same time period as the temple at Chavín. The first fascinating aspect of the remains at La Banda is the intellectual symbiosis between the well-known physical finds and the cultural inferences from the excavations around the temple grounds at Chavín.

Until the excavation at La Banda, it was presumed that the main ancient residential areas connected to the temple were located beneath the modern town of Chavín (Burger 1995). With the La Banda discovery, we were able to establish that there were other significant residential sectors beside the constructions under modern Chavín. Many of the most surprising conclusions about La Banda rely on juxtaposition with data from the monumental core, and several puzzles about the monumental core seem to be resolved by evidence from La Banda. The La Banda sector and the monumental core sector illuminate each other in a way that is satisfying to those interested in the life of common folk and to those who are more interested in power dynamics and more elaborate formal displays of hierarchical organization.

The artifacts and architecture uncovered during the 2005 excavations allowed me to address four major areas of research: ritual, domestic life, trade and importation, and production and exchange practices of the inhabitants of La Banda. Here I discuss these themes by presenting the architectural finds and then moving on to the analysis of the artifacts and biological remains found within those spaces.

Thesis excavations uncovered a domestic group organized into at least three major architectural divisions, ADs. The largest division in this area was the space that expanded out from the stone patio, in AD B (Figure 6.10). The patio group revealed living spaces north of the patio and a workshop, ASD 7, for the production of ritual goods located off the patio. The workshop and artifacts found within and nearby the patio were a fascinating find and helped form a solid vision of who lived and worked in this area. The other major architectural space was AD A. This space was located to the west of the patio area and was separated by a large wall from AD B and the pathway, AD C. In the southern portion of AD A lay a set of distinctly colored clay floors built within small rooms that were less formal living space with a hearth in the north of AD A. In general, this space had less dense material remains than AD B. The third major AD was the pathway, AD C. This space was bordered by two large walls and had an earthen floor. Thesis data reveal that trash was deposited in the pathway but it was kept clear of major obstructions. There was one other architectural division, AD D, but this rubble fill was only briefly encountered in the westernmost units.

The excavations and the analysis of the ceramic and lithic densities across La Banda revealed a domestic area with workshops. This living area was located within visual and auditory association with the ceremonial center, suggesting that the activities that the people of La Banda were engaged in were clearly related to activities in the center. In this dissertation I have shown how important research is that focuses on the local populations, of this important settlement, forming a better sense of lived lives across time. With more of such material it will be possible to create broader means of organizing time rather than placing inordinate emphasis on ceramic styles and their implications for chronologies and changing ideologies.

The plant and animal remains recovered from La Banda as well as the macrobotanical remains from other sectors excavated in 2005 enabled me to form a detailed view of what agricultural and herding practices were practiced at the site across time and space. This archaeobiological analysis consisted of macrobotanical remains from all major sectors, phytolith remains from La Banda, and faunal remains from La Banda. The macrobotanical data are dominated by wood and these densities enabled me to discuss the intensity of use and deposition practices in different architectural spaces. I discussed the macrobotanical remains from each sector of the site and then focused on the deposition of the remains throughout the ADs of La Banda. Throughout AD B there was varied spatial patterning of charcoal densities and food remains and this patterning enabled me to reach conclusions about the uses of the distinct architectural spaces. ASDs 10 and 12, north of the patio for example, appear to be living areas. Their associated patio did not have dense remains of charcoal or food remains. The patio appears to have been a work area that exhibited the cleanliness, lack of dense artifactual deposition, that is common throughout Chavín. These conclusions and insights about the uses of space could not have been reached without these botanical data.

AD A was similar to AD B in having distinct use areas and in having ASDs with dense charcoal remains and others with low density depositions. In the pathway, AD C, there were relatively dense amounts of charcoal found but there were not dense food remains in the pathway. This space may have been kept clear by people and cleaned of food remains by animals. The phytolith remains were not as diverse as anticipated but they did enable me to discuss the use of wood and presence of grass remains in the sector. These data created a clearer picture of the environment around La Banda than was previously possible. This ecological baseline will enable future researchers interested in historical ecology to compare their finds from earlier and later time periods to Chavín temple times. Also, without these data, it is difficult to imagine a landscape with no grass cover because much of the sediment under La Banda was sand and deposits from former rivers. It also shows that patio areas may have been thatched. The ubiquitous phytolith grass remains make clear that the area around La Banda was probably covered in grass and that the agricultural fields at that point in time were upslope, north and south of the sector in areas with deeper soil deposits. In post temple times, Huaraz phase and others, the La Banda sector was covered by colluvial depositions and then later was used for agriculture. The faunal remains make clear that La Banda was a domestic sector, these heavily bones were broken open and cooked, with every possible purpose edible portion extracted or applied in ceremonial garb. Age profiles and MNI analysis made clear that animals lived locally as cuts of meat from all parts of the camelids were consumed.

The craft objects produced in La Banda were related to activities that occurred in the ceremonial center. The special non-quotidian objects such as exotic shell pendents and worked bone artifacts also reveal that many artifacts found at the site were constructed from non-local materials. Many of these pieces were likely used by priests in ceremonies and they remind us that religious ideology was created and reinforced through processions and other ritual activities. The priests' regalia were the material manifestation of their power and demonstrated that they had access to exotic goods. The analysis of crafts and local production informed my discussions of daily life and the people who I believe were responsible for producing these goods.

The four major themes of the dissertation--ritual, domestic life, trade and importation, and production and exchange practices appeared throughout the dissertation but are worth returning to in order to synthesize what was learned. One particularly noteworthy find was the ritual hearth found in ASD 7. The hearth appears to fit in the range of structures considered to be part of the Mito and Kotosh Religious Traditions. These two religious traditions used to be considered major pre-Chavín forms of ritual (Bonnier 1980; Burger and Salazar Burger 1980, 1984, 1985; Izumi and Terrada 1972) but we have learned that such complexes continued on throughout the EH times. With both the ASD 7 hearth, and the other hearth found in the West Field (Contreras in press), prove there is greater time depth of such ritual structures and these associated religious practices, which may have lasted across millennia. The fact that this hearth was found in a domestic area, and there was not a similar find in the ceremonial center, means that there were multi-scalar religious practices occurring at Chavín and the communities that bounded it.

When considering the ritual goods found in La Banda it should now be clear that while objects of higher prestige value, due to their exotic origins or unique qualities, were traded or brought to the settlement, there was little evidence for the movement of bulk supplies. Trade networks do not appear to be the source of Chavín's power and prestige. Rather prestige was gained through ritual acts as well as other public and private displays of respect. The public adornments of power were produced in La Banda and the inhabitants who made these goods were located at a crucial nexus between daily lived life and the ceremonial activities that occurred in the temple.

Archaeologists rarely have opportunity to relate iconography to artifacts but the artifacts found in AD B, and in particular in ASD 7, allow me to do this. The co-existence of reinforcing iconographic and artifactual evidence allows for a more clear interpretation commonly associated with nearly perfectly preserved sites like Pompeii. The pectoral pieces, bone beads, circular bone carving, elaborate lithic piece, and shells all have visual correlates to the iconographic evidence of priests marching in processions (Figure 8.18). These objects enabled us to form a hypothesis of priests or priest-craftsmen working on the ornaments that they would use in rituals. This evidence combined with the faunal and botanical data have demonstrated that the inhabitants of La Banda were consuming food in their living spaces were the same people who produced the artifacts.

As I discussed in previous chapters the distinctions between priests and shamans (Moore 2005) has clear implications for how ritual and religion were practiced. Throughout this dissertation I have considered ritual in conjunction with other activities, as per Bell (1997). As the mito-type hearth and ritual goods indicated ritual activities were not separate from the domestic sphere. Production of paraphernalia that was worn in ritual processions occurred besides areas where food was consumed. In fact, ritual was practiced in many sectors of the site and although I have used the term ceremonial core it should be evident by now that ceremonies were apparently not solely enacted and performed in the main temple area.

There are some limits to the interpretation of priests working and living in La Banda that could be eliminated if more evidence was present in the sector. The macrobotanical remains of food species were sparse, there were no identifiable kitchens, there were few obvious food storage areas, and there were no burials of the inhabitants found in the compounds. All of these limit my interpretation but not overwhelmingly. In many instances they are the inevitable result of excavating an almost three thousand year old dwelling and working space at a site where burials have been rarely encountered. Additionally, food may have been stored in baskets or in pots, and all artifacts constructed from animal and plant material at the site suffered from millennia of clear wet and dry seasons.

A predominance of the data supports the working hypothesis that synthesizes the major ritual focus of the monumental sector with the relatively modest residential structures of La Banda. Because there were probably fewer than 3,000 people in and around Chavín at the peak of the Janabarriu phase settlement (Burger 1995:168), the roles of people living near Chavín were probably not as highly differentiated as in later Andean polities. People of La Banda lived and worked in the same place; they were certainly crafters of ritual ornaments and consumers of local produce. If the peak Black and White Stage (Early Horizon) population of Chavín did not live in an elaborately segmented social class system then we can conclude that the La Banda residents were probably priests who made many of their own vestments and ritual objects. On the other hand, if the Black and White Stage population at Chavín was highly segmented then it may be more justifiable to impute a specific crafting role to the La Banda people and the existence of priestly dwelling spaces in other, as yet excavated sectors.

These ambiguities combined with the tantalizing finds reported on here mean that there are an abundance of issues that future research could resolve. Further work in the La Banda sector would enable us to construct an accurate depiction of a Chavín temple area community in all of its attendant complexity. The settlement layout has only been partially determined but the finds to date suggest a highly organized and dense proto-urban settlement whose exact extent is not known. A thorough mapping of this sector would allow for a more nuanced vision of past population size and societal arrangement. Additionally, work in La Banda revealed domestic spaces devoted to unique activities and production practices, future work will undoubtedly reveal other production areas and spaces for work on distinct artifact classes. The relatively sparse macrobotanical remains could be enhanced by taking larger sample sizes and continuing research into the microbotanical remains present in the sediments and on artifacts will further our understandings of past ecological and farming practices. Isotope analysis of marine and terrestrial bones would allow for more detailed research into the movement of raw materials and worked goods. Additional work on bone artifacts postulated to have been used for the consumption of hallucinogenic plants would be enhanced by the collection of larger sample sizes and the application of Gas Chromotography Mass Spectometry analysis to sediments and materials found associated with these tools. The results of the first broad horizontal excavations of domestic space in La Banda indicate that future work in this grain will continue to reveal fascinating evidence of the lives of the people who lived within sight of the temple of Chavín.

This study contributed to the field of historical ecology by revealing that the farming systems of the Chavín residents were stable and well managed. The domesticated animals were kept near the settlement and all portions of the animal were used for sustenance and craft production. Additionally, the fields were likely fertilized with the dung of these animals. The plant communities of the surrounding area were used responsibly and wood resources were available across time. The goods transported into La Banda were not staple goods as they people produced their own staple supplies. While the residents of La Banda had many connections to outside communities and exotic material they were not dependent upon these supplies, thus when the temple ceased to be a major ceremonial center the inhabitants of La Banda did not disappear. Rather, they continued to farm and live in a traditional manner although they now lived with fewer exotic materials that could be made into elaborate adornments for ritual activities.

Historical ecology analyzes the complex historical relationships between people and the landscape. In the field, landscape is seen as a dynamic entity that connects history and evolution. The studies of people and landscapes is historical and history, in this sense, is not solely a description of temporal events, rather it can be seen as many processes and events that intersect in different arenas (social, economic, ecological, etc.). In this dissertation I examined many facets of life in a small community located across the river from a major ceremonial center and I connected the different arenas of their lives to the broader historical and ecological narratives in which they reside.

10.2 In Sum

All of these data presented here reveal an increasingly complex and nuanced vision of life in Chavín times. The title of the dissertation revealed my theoretical perspective and provided insight into the themes that would be investigated. Life Across the River: Agricultural, Ritual, and Production Practices at Chavín de Huántar, Perú. I am interested in domestic life and therefore focused on this angle of research rather than on the actions of elites or priests who acted in the central temple area. I presented multiple lines of evidence: botanical, faunal, malacological, ceramic, lithic, architectural, and ritual, to elucidate daily life in a highland community located across the river from a major ceremonial center. These discussions clarified what life was like for the inhabitants of La Banda and revealed how this community was on the one hand intimately connected to the broader world and on the other hand practicing their own unique rituals and living discrete lives away from the glare of the temple.

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Appendix A: Bulk Ceramics, Decorated, and Diagnostic Ceramics
Table 1: Bulk Ceramics

Area	Unit	Level	Quantity	Weight (g)		
CdH-LB-SM	G12	5	4	12.3		
CdH-LB-SM	G12	2	678	2256		
CdH-LB-SM	G12	4	116	371.2		
CdH-LB-SM	G12	3	860	2600		
CdH-LB-SM	G13	2	605	2250		
CdH-LB-SM	G13	5	290	1182.4		
CdH-LB-SM	G13	4	680	3600		
CdH-LB-SM	G13	7- cuad se	26	62.9		
CdH-LB-SM	G13	9	16.6			
CdH-LB-SM	G13	3	308	1955.5		
CdH-LB-SM	G13	6	1	16.69		
CdH-LB-SM	G13	3	646	3000		
CdH-LB-SM	G14	5- cuad e	35	119.3		
CdH-LB-SM	G14	3- cuad w	59	1505.5		
CdH-LB-SM	G14	2	260	1001		
CdH-LB-SM	G14	3- cuad e	186	694		
CdH-LB-SM	G14	6- cuad w	2	2.6		
CdH-LB-SM	G14	4- cuad w	42	140.5		
CdH-LB-SM	G14	5- cuad e	2	3.1		
CdH-LB-SM	G14	4- cuad e	36	121.8		
CdH-LB-SM	G14	4- cuad w	1	1.8		
CdH-LB-SM	H12	3	349	1293.5		
CdH-LB-SM	H12	2	190	825.3		
CdH-LB-SM	H12	4	153	1158.1		
CdH-LB-SM	H12	6	227	2506		
CdH-LB-SM	H12	7	8	34.7		
CdH-LB-SM	H12	3	3			
CdH-LB-SM	H12	5	21	144.8		
CdH-LB-SM	H12	3	21	144.8		
CdH-LB-SM	H13	3	43	917.6		
CdH-LB-SM	H13	4	49	109.7		
CdH-LB-SM	H13	3	717	3300		
CdH-LB-SM	H13	3b	340	2038.7		
CdH-LB-SM	H13	3b	183			
CdH-LB-SM	H13	2	247	1182		
CdH-LB-SM	H15	2	358	938		
CdH-LB-SM	H15	5	128	430.4		

Appendix A

Table 1: Bulk Ceramics, continued.

Area	Unit	Level	Quantity	Weight (g)
CdH-LB-SM	H15	4	72	260.9
CdH-LB-SM	H15	3	1	1.5
CdH-LB-SM	H15		443	1762.7
CdH-LB-SM	H16	5	124	348
CdH-LB-SM	H16	6	156	405
CdH-LB-SM	H16	4	2	
CdH-LB-SM	H16	3	655	2505.49
CdH-LB-SM	H16	4	139	475
CdH-LB-SM	H16	2	102	383
CdH-LB-SM	I13	3	11	66.6
CdH-LB-SM	I13	4	6	60.6
CdH-LB-SM	I13	5	18	62.7
CdH-LB-SM	I13		390	1968.4
CdH-LB-SM	I13		214	871.4
CdH-LB-SM	I13	2	665	2321.2
CdH-LB-SM	I15	8	10	35.7
CdH-LB-SM	I15	7	42	153.2
CdH-LB-SM	I15	5	180	532.7
CdH-LB-SM	I15	9	1	1.4
CdH-LB-SM	I15	8	30	97.5
CdH-LB-SM	I15		61	195.7
CdH-LB-SM	I15	4	254	779
CdH-LB-SM	I15	3	366	1404.3
CdH-LB-SM	I15	2	140	448.3
CdH-LB-SM	J11	2	360	1780
CdH-LB-SM	J11	3	436	1876.9
CdH-LB-SM	J12	4b- w	189	590.5
CdH-LB-SM	J12	6	36	173.5
CdH-LB-SM	J12	2	88	199.1
CdH-LB-SM	J12	3	4	
CdH-LB-SM	J12	8	34	78.5
CdH-LB-SM	J12	7	8	26.9
CdH-LB-SM	J12	7b	4	12.7
CdH-LB-SM	J12	3	191	1021.5
CdH-LB-SM	J12	4	548	1274.7
CdH-LB-SM	J12	3b	710	2204
CdH-LB-SM	J12	3	1690	5890

Appendix A

Table 1: Bulk Ceramics, continued.

Area	Unit	Level	Quantity	Weight (g)
CdH-LB-SM	J13	6	23	73.7
CdH-LB-SM	J13	5- piso	15	52.3
CdH-LB-SM	J13	2	405	1523.5
CdH-LB-SM	J13	3	605	2250
CdH-LB-SM	J14	3	535	2803.4
CdH-LB-SM	J14	4- sur	67	236
CdH-LB-SM	J14	4- norte	34	133.7
CdH-LB-SM	J14		706	2847
CdH-LB-SM	J14		36	127.8
CdH-LB-SM	J14	5- sur	207	1253
CdH-LB-SM	J14	6	48	227.7
CdH-LB-SM	J14	2	114	441.1
CdH-LB-SM	J14	4	401	1742.6
CdH-LB-SM	J15	6	5	20.6
CdH-LB-SM	J15	5	2	3.6
CdH-LB-SM	J15	2	450	1375.6
CdH-LB-SM	J15	3	1802	10168.8
CdH-LB-SM	J15	4	150	560.3
CdH-LB-SM	J16	4	108	396.5
CdH-LB-SM	J16	3	330	177.7
CdH-LB-SM	J16	5	324	929.6
CdH-LB-SM	J16	2	153	435.2
CdH-LB-SM	J16	6	400	1470.9
CdH-LB-SM	J16	7	680	1603.4
CdH-LB-SM	J16	3	647	2301.1
CdH-LB-SM	J16	8	181	434.8
CdH-LB-SM	K11	3	880	2945
CdH-LB-SM	K11	2	94	325.4
CdH-LB-SM	K12	4	274	1755.1
CdH-LB-SM	K12	2	152	462.5
CdH-LB-SM	K12	3	407	1238.5
CdH-LB-SM	K12	4- cuad n	243	1417.2
CdH-LB-SM	K12	4- cuad w	274	1755.1
CdH-LB-SM	K12	3	49	
CdH-LB-SM	K12	4- cuad n	158	
CdH-LB-SM	K12	4- cuad oeste	710	6250
CdH-LB-SM	K13	hall 1	12	85
CdH-LB-SM	K13	4	285	1374.6

Appendix A

Table 1: Bulk Ceramics, continued.

Area	Unit	Level	Quantity	Weight (g)
CdH-LB-SM	K13	3	597	
CdH-LB-SM	K13	5- cuad sw	5	24.4
CdH-LB-SM	K13	2	310	868.7
CdH-LB-SM	K13/L13	hall 2	2	1.9
CdH-LB-SM	K14	4	8	17.5
CdH-LB-SM	K14	1	3	
CdH-LB-SM	K14	2	382	1248.7
CdH-LB-SM	K14	feat 1- lev 1	3	2
CdH-LB-SM	K14	4- feat 1 nivel	116	481
CdH-LB-SM	K14	4	190	
CdH-LB-SM	K14	3	560	1644.6
CdH-LB-SM	K14/K15	1 feat 1	3	14
CdH-LB-SM	K15	6	17	51
CdH-LB-SM	K15	hall 1 - nivel 2	2	5.1
CdH-LB-SM	K15	4	690	2579
CdH-LB-SM	K15	5	151	427
CdH-LB-SM	K15	2	550	1843.7
CdH-LB-SM	K15	3	533	1426
CdH-LB-SM	L11	2	770	3100
CdH-LB-SM	L11	3	1348	5289.8
CdH-LB-SM	L11/M11	6	3	17.9
CdH-LB-SM	L11/M11	7	2	37.7
CdH-LB-SM	L11/M11	4	274	1088.2
CdH-LB-SM	L11/M11	5	144	562.5
CdH-LB-SM	L11/M11	6	111	298.1
CdH-LB-SM	L12	4- norte	79	257.8
CdH-LB-SM	L12		399	2584.6
CdH-LB-SM	L12	3	428	1570
CdH-LB-SM	L12	2	125	556
CdH-LB-SM	L13	4	2337	5809.4
CdH-LB-SM	L13	2	780	3088.7
CdH-LB-SM	L13	3	2956	9370
CdH-LB-SM	L14	3	2236	10851.1
CdH-LB-SM	L14	2	1106	3920.2
CdH-LB-SM	L14	3	2452	9710.5
CdH-LB-SM	L14		656	2784.6
CdH-LB-SM	L14		440	1638.9
CdH-LB-SM	L15	5	122	593.5

Appendix A

Table 1: Bulk Ceramics, continued.

Area	Unit	Level	Quantity	Weight (g)
CdH-LB-SM	L15	6	42	193.3
CdH-LB-SM	L15	4	488	2217
CdH-LB-SM	L15	3	908	2800.9
CdH-LB-SM	L15	2	686	2584.8
CdH-LB-SM	L15		226	1050.7
CdH-LB-SM	M10	3	567	2500.1
CdH-LB-SM	M11	7	561	2600
CdH-LB-SM	M11	2	140	548.7
CdH-LB-SM	M11	3	471	2128.8
CdH-LB-SM	M12	4- cuad n	1467	7021.1
CdH-LB-SM	M12	4- norte	650	3334.7
CdH-LB-SM	M12	4	1970	9138.4
CdH-LB-SM	M12	4- cuad w	15	254
CdH-LB-SM	M12	2	2731	4868.8
CdH-LB-SM	M12	2	266	1553.9
CdH-LB-SM	M13	4	353	200.8
CdH-LB-SM	M13	4	1379	3917.3
CdH-LB-SM	M13	3	1946	9175
CdH-LB-SM	M13	2	991	4365.5
CdH-LB-SM	N10	2	569	1753.1
CdH-LB-SM	N10	3	567	2500
CdH-LB-SM	N11	3	260	1114.6
CdH-LB-SM	N11	2	210	1048.7
CdH-LB-SM	N12	4	7	16
CdH-LB-SM	N12	2	566	2288
CdH-LB-SM	N12	3	1278	6034.8
CdH-LB-SM	N12	4	1288	6550
CdH-LB-SM	N13	5	53	195.6
CdH-LB-SM	N13	2	395	1125
CdH-LB-SM	N13	feat 2	988	6830.1
CdH-LB-SM	N13	3	1831	12375
CdH-LB-SM	N13	4	617	3478.8
CdH-LB-SM	sin procedenci	x	372	1534.6
CdH-LB-SM	sin procedenci	x	518	2486.6
CdH-LB-SM	,12	4	311.8	x

Appendix A

Table 2: Diagnostic Ceramics continued

Area	Unit	Level	Count	Weight (g)	Density
CdH-LB-SM	G13	2	42	841.3	1.058239
CdH-LB-SM	G14	2	19	658.8	0.818385
CdH-LB-SM	H12	2	11	186.6	0.210847
CdH-LB-SM	H13	2	6	68	0.146237
CdH-LB-SM	H15	2	15	128.2	0.237407
CdH-LB-SM	H16	2	4	24	0.029091
CdH-LB-SM	I13	2	1	4.1	0.002654
CdH-LB-SM	I15	2	3	44.3	0.077719
CdH-LB-SM	J12	2	4	19.2	0.025098
CdH-LB-SM	J13	2	54	406.9	0.775048
CdH-LB-SM	K11	2	2	28.9	0.053519
CdH-LB-SM	K12	2	3	28.6	0.036667
CdH-LB-SM	K14	2	10	87	0.075325
CdH-LB-SM	K15	2	47	723.4	0.90425
CdH-LB-SM	L11	2	46	709.3	1.182167
CdH-LB-SM	L14	2	59	602.3	0.409728
CdH-LB-SM	M11	2	5	45.9	0.020265
CdH-LB-SM	M12	2	44	1320.5	1.023643
CdH-LB-SM	M13	2	50	703.7	0.879625
CdH-LB-SM	N10	2	5	22.8	0.054286
CdH-LB-SM	N11	2	22	276.5	0.449593
CdH-LB-SM	N12	2	39	393.4	0.49175
CdH-LB-SM	N13	2	11	280	0.602151
CdH-LB-SM	H12	3	17	297.7	0.218095
CdH-LB-SM	H15	3	34	552.6	0.635172
CdH-LB-SM	H16	3	56	1200	1.481481
CdH-LB-SM	I15	3	20	235.4	0.373651
CdH-LB-SM	J12	3	40	1298	0.882993
CdH-LB-SM	J14	3	3	15.2	0.01078
CdH-LB-SM	J15	3	80	1229.9	2.049833
CdH-LB-SM	J16	3	100	981.3	0.77881
CdH-LB-SM	K11	3	35	441.2	0.865098
CdH-LB-SM	K12	3	4	26.2	0.056344
CdH-LB-SM	K13	3	17	193	0.18381
CdH-LB-SM	K14	3	3	143.4	0.147077
CdH-LB-SM	K15	3	44	392.5	0.211022

Appendix A

Table 2: Diagnostic Ceramics continued

Area	Unit	Level	Count	Weight (g)	Density
CdH-LB-SM	L11	3	66	1280.5	1.497661
CdH-LB-SM	L13	3	74	1090.4	0.969244
CdH-LB-SM	L14	3	18	91.1	0.04708
CdH-LB-SM	L15	3	10	220.7	0.113763
CdH-LB-SM	M13	3	214	4589.7	4.707385
CdH-LB-SM	N10	3	26	353.1	0.574146
CdH-LB-SM	N11	3	18	59.6	0.180606
CdH-LB-SM	N12	3	20	739	0.92375
CdH-LB-SM	G13	4	45	1596.5	0.909687
CdH-LB-SM	G14	4	4	120.4	0.1505
CdH-LB-SM	H12	4	3	18.2	0.027576
CdH-LB-SM	H15	4	2	66.7	0.130784
CdH-LB-SM	H16	4	3	45.1	0.062639
CdH-LB-SM	I13	4	12	502.5	0.628125
CdH-LB-SM	I16	4	10	145.8	0.18225
CdH-LB-SM	J13	4	21	230.1	0.374146
CdH-LB-SM	J14	4	3	7	0.093333
CdH-LB-SM	J15	4	35	365.7	0.625128
CdH-LB-SM	K12	4	9	493.5	1.370833
CdH-LB-SM	K13	4	14	201.8	0.168167
CdH-LB-SM	K14	4	6	27.4	0.043492
CdH-LB-SM	K15	4	86	895.1	1.217823
CdH-LB-SM	L12	4	3	9.8	0.031111
CdH-LB-SM	L13	4	16	153.9	0.114
CdH-LB-SM	L15	4	81	561.1	0.779306
CdH-LB-SM	M12	4	8	149.1	0.2485
CdH-LB-SM	M13	4	6	544.4	0.378056
CdH-LB-SM	H15	5	3	49.5	0.103125
CdH-LB-SM	H16	5	12	202.4	0.364685
CdH-LB-SM	J14	5	1	2.5	0.003125
CdH-LB-SM	J15	5	13	93.8	0.382857
CdH-LB-SM	J16	5	1	3	0.00375
CdH-LB-SM	K15	5	37	451.1	0.939792
CdH-LB-SM	L15	5	11	207.8	0.39581
CdH-LB-SM	N13	5	6	151.2	0.504
CdH-LB-SM	G14	6	1	12.9	0.016125
CdH-LB-SM	H15	6	1	4.9	0.027222
CdH-LB-SM	H16	6	24	226.3	0.260115

Appendix A

Table 2: Diagnostic Ceramics continued

Area	Unit	Level	Count	Weight (g)	Density
CdH-LB-SM	I15	6	6	89.8	0.122177
CdH-LB-SM	J12	6	2	10.9	0.006728
CdH-LB-SM	J14	6	2	18.4	0.023
CdH-LB-SM	J16	6	15	117	0.24375
CdH-LB-SM	L15	6	15	380.6	0.604127
CdH-LB-SM	I15	7	2	7.5	0.022727
CdH-LB-SM	J16	7	30	194.1	0.199077
CdH-LB-SM	I15	8	7	57.4	0.067135
CdH-LB-SM	J12	8	4	407	0.361778
CdH-LB-SM	J16	8	4	44.5	0.074167
CdH-LB-SM	L13	2- artefacto1	1	125.9	0.157375
CdH-LB-SM	G14	3- cuad w	4	45.8	0.05725
CdH-LB-SM	J11	3- cuad w	5	57.7	0.072125
CdH-LB-SM	J11	3- oeste	19	1268.2	1.58525
CdH-LB-SM	H13	3b	4	20	0.026667
CdH-LB-SM	H13	3c	10	183.1	0.228875
CdH-LB-SM	G14	3-este	9	150.6	0.18825
CdH-LB-SM	J15	3-oeste	39	1433.6	1.792
CdH-LB-SM	K15	4- cuad s	1	47.3	0.059125
CdH-LB-SM	K12	4- cuad w	2	10.9	0.013625
CdH-LB-SM	K14	4- feat 1 nive	1	2.1	0.002625
CdH-LB-SM	L12	4- norte	20	339.1	0.423875
CdH-LB-SM	M12	4- norte	3	4.6	0.00575
CdH-LB-SM	G14	4-interfacie 4	2	16.8	0.021
CdH-LB-SM	K12	4-norte	10	38.3	0.106389
CdH-LB-SM	M12	4-norte	50	1232	1.54
CdH-LB-SM	H12	5- cuad nw	1	44	0.055
CdH-LB-SM	K13	5- cuad sw	2	26.2	0.03275
CdH-LB-SM	J14	5- recinto sur	12	181	0.22625
CdH-LB-SM	G13	7-cuad se	4	38.7	0.048375
CdH-LB-SM	N13	hallazgo 2	7	52.1	0.065125
CdH-LB-SM	sin procedenci	x	6	356.5	0.445625
CdH-LB-SM	sin procedenci	x	30	692.2	0.86525

Appendix A

Table 3: Diagnostic Ceramics

Area	Unit	Level	Count	Weight	Density
CdH-LB-SM	M11	2	1	1.4	0.000618
CdH-LB-SM	sin precedenci	x	1	1.6	0.002
CdH-LB-SM	G14	5-cuad e	1	1.9	0.002184
CdH-LB-SM	H13	4	1	1	0.002222
CdH-LB-SM	H13	3c	1	2.1	0.002258
CdH-LB-SM	G14	3- cuad w	1	2.4	0.003
CdH-LB-SM	M13	3b	1	2.5	0.003125
CdH-LB-SM	J14	5	2	2.9	0.003625
CdH-LB-SM	G14	5- cuad w rell	1	2.5	0.004505
CdH-LB-SM	K14	3	3	4.5	0.004615
CdH-LB-SM	H13	2	1	2.2	0.004731
CdH-LB-SM	J12	8	1	5.4	0.0048
CdH-LB-SM	G12	2	2	4.3	0.004859
CdH-LB-SM	K12	3	1	2.3	0.004946
CdH-LB-SM	K13	3	2	5.8	0.005524
CdH-LB-SM	J13	4	1	3.5	0.005691
CdH-LB-SM	H12	2	1	5.1	0.005763
CdH-LB-SM	I13	4	1	4.8	0.006
CdH-LB-SM	I13	2	3	9.3	0.006019
CdH-LB-SM	K13	2	4	9.9	0.006346
CdH-LB-SM	L13	2	3	8	0.008081
CdH-LB-SM	I13	3	1	7	0.00875
CdH-LB-SM	L11/M11	6- hall 1	1	7.1	0.008875
CdH-LB-SM	J11	2	4	15.8	0.008927
CdH-LB-SM	J16	2	2	16.2	0.009643
CdH-LB-SM	J14	2	3	13.5	0.009783
CdH-LB-SM	G12	4	4	16.4	0.010513
CdH-LB-SM	K13	4	4	13.6	0.011333
CdH-LB-SM	I15	6	1	9	0.012245
CdH-LB-SM	J14	5- recinto sur	2	9.9	0.012375
CdH-LB-SM	H13	3	3	19.5	0.012621
CdH-LB-SM	L11/M11	7	2	10.7	0.013375
CdH-LB-SM	N10	3	6	9.6	0.013617
CdH-LB-SM	L15	2	5	28.7	0.013667
CdH-LB-SM	I15	3	2	8.7	0.01381
CdH-LB-SM	K14	2	4	18.1	0.015671
CdH-LB-SM	K14	4- feat 1 l 1	1	4.8	0.016

Appendix A

Table 3: Diagnostic Ceramics continued

Area	Unit	Level	Count	Weight (g)	Density
CdH-LB-SM	G13	6	2	9.5	0.016667
CdH-LB-SM	N13	2	1	7.8	0.016774
CdH-LB-SM	G14	cuad w	13	14.7	0.018375
CdH-LB-SM	H12	6	3	21.3	0.018442
CdH-LB-SM	G13	4	7	32.5	0.018519
CdH-LB-SM	J13	3	3	14	0.018667
CdH-LB-SM	J12	4B	7	15.9	0.019875
CdH-LB-SM	G14	3	1	16.4	0.0205
CdH-LB-SM	L13	3	5	24.4	0.021689
CdH-LB-SM	J13	2	4	11.4	0.021714
CdH-LB-SM	K15	5	2	11.8	0.024583
CdH-LB-SM	H15	2	3	13.6	0.025185
CdH-LB-SM	M13	4	9	36.3	0.025208
CdH-LB-SM	I13	3	3	20.4	0.0255
CdH-LB-SM	K14	4	8	17.1	0.027143
CdH-LB-SM	J12	4	4	23.1	0.0275
CdH-LB-SM	N12	4	6	23.2	0.029
CdH-LB-SM	K11	3	3	15.6	0.030588
CdH-LB-SM	H16	4	5	22.1	0.030694
CdH-LB-SM	K15	4	40	23.8	0.032381
CdH-LB-SM	L11/M11	7	8	26.9	0.033625
CdH-LB-SM	G13	3	6	41.5	0.03547
CdH-LB-SM	J12	7b	6	16.5	0.035484
CdH-LB-SM	K12	4	3	13.5	0.0375
CdH-LB-SM	H12	4	4	25.8	0.039091
CdH-LB-SM	I15	5	7	17.7	0.039333
CdH-LB-SM	L11/M11	5- hallazgo 1	8	31.9	0.039875
CdH-LB-SM	N12	3	7	32.6	0.04075
CdH-LB-SM	J15	4	5	24	0.041026
CdH-LB-SM	H16	5	8	23.9	0.043063
CdH-LB-SM	H16	6	5	38.3	0.044023
CdH-LB-SM	M12	2	7	59.5	0.046124
CdH-LB-SM	J?	4	6?	38.5	0.048125
CdH-LB-SM	I15	7	9	16.3	0.049394
CdH-LB-SM	K15	3	14	93.1	0.050054
CdH-LB-SM	N13	3	7	53	0.051961
CdH-LB-SM	L13	4	16	70.8	0.052444
CdH-LB-SM	G14	2	6	26.2	0.052929

Appendix A
Table 3: Diagnostic Ceramics continued

Area	Unit	Level	Count	Weight (g)	Density
CdH-LB-SM	J16	4	2	26.2	0.052929
CdH-LB-SM	N11	3	4	17.8	0.053939
CdH-LB-SM	J13	5-piso	8	36	0.058537
CdH-LB-SM	N11	2	5	36.5	0.05935
CdH-LB-SM	G13	5	16	67.1	0.063005
CdH-LB-SM	L11	2	5	37.9	0.063167
CdH-LB-SM	M11	3	8	45.1	0.063972
CdH-LB-SM	L12	3	5	51.3	0.064125
CdH-LB-SM	M12	4-norte	1	52.5	0.065625
CdH-LB-SM	J12	3	11	98.4	0.066939
CdH-LB-SM	H15	5	3	33.4	0.069583
CdH-LB-SM	K15	2	7	55.7	0.069625
CdH-LB-SM	N12	2	8	56.7	0.070875
CdH-LB-SM	H15	3	7	62.7	0.074643
CdH-LB-SM	J16	8	11	46.6	0.077667
CdH-LB-SM	H16	3	10	65.8	0.081235
CdH-LB-SM	N13	4	41	55.1	0.08163
CdH-LB-SM	sin precedencia	x	5	66.9	0.083625
CdH-LB-SM	N10	2	5	35.3	0.084048
CdH-LB-SM	H12	3	9	126.7	0.092821
CdH-LB-SM	N13	hallazgo 2	3	31.3	0.094848
CdH-LB-SM	L11	3	15	90.5	0.105848
CdH-LB-SM	J15	2	13	67.4	0.118246
CdH-LB-SM	H13	3b	8	93	0.124
CdH-LB-SM	L14	2	21	100.5	0.125625
CdH-LB-SM	J12	3b- cuad e	9	62.8	0.126869
CdH-LB-SM	J16	5	13	102	0.1275
CdH-LB-SM	M12	4	14	78.8	0.131333
CdH-LB-SM	M13	3	19	129.6	0.132923
CdH-LB-SM	J15	3	20	82.5	0.1375
CdH-LB-SM	J16	3	35	241	0.19127
CdH-LB-SM	L15	3	17	127.4	0.202222
CdH-LB-SM	L14	3	56	312.1	0.212313
CdH-LB-SM	J16	6	29	107.7	0.224375
CdH-LB-SM	L15	5	21	165	0.229167
CdH-LB-SM	J16	7	47	226.6	0.23241
CdH-LB-SM	I15	4	7	64.8	0.24
CdH-LB-SM	L15	4	40	466.6	0.241137

Appendix A
Table 3: Diagnostic Ceramics continued

Area	Unit	Level	Count	Weight	Density
CdH-LB-SM	J14	3	10	346.2	0.245532
CdH-LB-SM	K12	4-CUAD W	5	117.5	0.290123
CdH-LB-SM	L15	6	21	195.6	0.372571
CdH-LB-SM	M13	2	10	704.3	0.880375
CdH-LB-SM	J14	4	36	181	2.413333

Appendix B

Table 1: Lithics

Area	Unit	Level	Quantity	Weight
CdH-LB-SM	G12	4	5	32
CdH-LB-SM	G14	5	1	10600
CdH-LB-SM	H12	3	1	12
CdH-LB-SM	H12	2	2	468.5
CdH-LB-SM	H12	6	3	59.1
CdH-LB-SM	H13	3	4	2044
CdH-LB-SM	H13	3C	2	215.3
CdH-LB-SM	H16	3	1	8300
CdH-LB-SM	I13	4	2	175.6
CdH-LB-SM	I15	7	9	2650
CdH-LB-SM	I15	8	1	3.7
CdH-LB-SM	I15	9	2	55.9
CdH-LB-SM	J12	3b- cuad sw	2	2031.9
CdH-LB-SM	J12	4b-cuad w	1	2390.7
CdH-LB-SM	J12	7b	1	5.7
CdH-LB-SM	J12	c/n 3	2	389.4
CdH-LB-SM	J12	3	3	3500
CdH-LB-SM	J13	3	2	128.2
CdH-LB-SM	J13	5	1	1265.1
CdH-LB-SM	J13	4	1	40.6
CdH-LB-SM	J14	2	1	50.1
CdH-LB-SM	J14	4- recinto nort	4	1597.6
CdH-LB-SM	J15	4	8	470.5
CdH-LB-SM	J15	6	2	644.3
CdH-LB-SM	J15	3	4	1914.4
CdH-LB-SM	J16	5	2	762.8
CdH-LB-SM	J16	3	1	0.5
CdH-LB-SM	J16	6	1	42
CdH-LB-SM	J16	7	1	4.8
CdH-LB-SM	K11	3	3	171.3
CdH-LB-SM	K13	3	1	51.8
CdH-LB-SM	K13	4	2	1800
CdH-LB-SM	K13	4	1	737
CdH-LB-SM	K13	3- hall 1	1	1.7
CdH-LB-SM	K13	3- artefacto	1	64.2
CdH-LB-SM	K13	2	1	319
CdH-LB-SM	K13	4	1	0.5

Appendix B

Table 1: Lithics, continued

Area	Unit	Level	Count	Weight
CdH-LB-SM	K14	3	1	46.2
CdH-LB-SM	K14	3	1	730
CdH-LB-SM	K15	3	1	1134.4
CdH-LB-SM	K15	2- bead artifact 2	1	1.3
CdH-LB-SM	K15	3- point and flake	2	5.3
CdH-LB-SM	K15	2	1	8.7
CdH-LB-SM	L11/M11	7- in canal feature 1	1	60.9
CdH-LB-SM	L11/M11	4	4	50.8
CdH-LB-SM	L11/M11	5	3	15.4
CdH-LB-SM	L13	2	2	909.3
CdH-LB-SM	L13	4	5	122.7
CdH-LB-SM	L13	3	2	2.7
CdH-LB-SM	L14	3	1	6.9
CdH-LB-SM	L15	2	1	1516.8
CdH-LB-SM	L15	3	1	19.6
CdH-LB-SM	L15	3	1	207.7
CdH-LB-SM	L15	2	1	55.8
CdH-LB-SM	L15	6	1	70.2
CdH-LB-SM	M13	4	3	626.8
CdH-LB-SM	M13	2	1	0.8
CdH-LB-SM	M13	3	2	71.5
CdH-LB-SM	M13	4	2	1711.5
CdH-LB-SM	M13	3	1	x
CdH-LB-SM	M13	4 artifact #3	1	534.6
CdH-LB-SM	N12	4	1	146.9
CdH-LB-SM	N12	4	1	1066.7
CdH-LB-SM	N12	4	1	1039.2
CdH-LB-SM	N12	4	1	993.3
CdH-LB-SM	N12	3	1	1900
CdH-LB-SM	N12	4	1	6200
CdH-LB-SM	N12	4	1	432.9
CdH-LB-SM	N12	2	5	66
CdH-LB-SM	N13	4	1	27.3
CdH-LB-SM	N13	feature 2	2	111.6
CdH-LB-SM	N13	feature 2	1	19.4
CdH-LB-SM	N13	5- peast profile	1	1.7
CdH-LB-SM	N13	4	1	0.9

Appendix C
Table 1: Faunal remains

Area	Unit	Level	Count	Weight
CdH-LB-SM	G12	3	89	405.3
CdH-LB-SM	G12	4	58	145.7
CdH-LB-SM	G12	2	47	77
CdH-LB-SM	G12	5	3	10.1
CdH-LB-SM	G13	5	46	107.7
CdH-LB-SM	G13	2	55	134.5
CdH-LB-SM	G13	4	1	37
CdH-LB-SM	G13	4	160	377
CdH-LB-SM	G13	6- quad se	1	8.8
CdH-LB-SM	G13	3	52	197.4
CdH-LB-SM	G13	7- quad se	13	56.3
CdH-LB-SM	G14	3- quad w	36	131
CdH-LB-SM	G14	2	70	231.6
CdH-LB-SM	G14	3- quad e	38	125.8
CdH-LB-SM	G14	4- quad w	19	38
CdH-LB-SM	G14	3- quad w	4	2.4
CdH-LB-SM	G14	5- quad w	11	24.5
CdH-LB-SM	G14	2	3	5.6
CdH-LB-SM	G14	6- quad w	3	19.6
CdH-LB-SM	G14	4	3	1.6
CdH-LB-SM	G14	4- quad e	18	64.8
CdH-LB-SM	G14	5- quad e	3	3.5
CdH-LB-SM	H12	6	51	278.4
CdH-LB-SM	H12	2	49	107.2
CdH-LB-SM	H12	6	2	5.1
CdH-LB-SM	H12	4	1	19.2
CdH-LB-SM	H12	4	32	122.6
CdH-LB-SM	H12	5- quad nw	7	21
CdH-LB-SM	H12	3	107	281.3
CdH-LB-SM	H13	5	1	3.2
CdH-LB-SM	H13	3b	3	14
CdH-LB-SM	H13	2	25	45
CdH-LB-SM	H13	4	7	7.4
CdH-LB-SM	H13	3b	106	329.2
CdH-LB-SM	H13	3	11	16.7
CdH-LB-SM	H13	3c	66	135.8
CdH-LB-SM	H13	3c	1	0.7

Appendix C
Table 1: Faunal remains, continued

Area	Unit	Level	Count	Weight
CdH-LB-SM	H13	3	1	0.1
CdH-LB-SM	H15	4	2	50
CdH-LB-SM	H15	6	6	60.1
CdH-LB-SM	H15	5	12	81
CdH-LB-SM	H15	4	28	48.2
CdH-LB-SM	H15	3	98	209
CdH-LB-SM	H15	3	9	10.4
CdH-LB-SM	H15	5	3	1.6
CdH-LB-SM	H16	5	8	6.1
CdH-LB-SM	H16	3	287	620.2
CdH-LB-SM	H16	2	8	33.7
CdH-LB-SM	H16	4	81	268
CdH-LB-SM	H16	6	71	129.1
CdH-LB-SM	H16	6	3	2.4
CdH-LB-SM	H16	5	93	248
CdH-LB-SM	I13	2	53	101.9
CdH-LB-SM	I13	4	57	98.7
CdH-LB-SM	I13	2	26	29.3
CdH-LB-SM	I13	3	64	143.1
CdH-LB-SM	I13	3	4	1.6
CdH-LB-SM	I15	3	79	148
CdH-LB-SM	I15	4	27	66.5
CdH-LB-SM	I15	2	20	16.4
CdH-LB-SM	I15	8	1	3
CdH-LB-SM	I15	5	5	47.9
CdH-LB-SM	I15	6	17	41.7
CdH-LB-SM	I15	8	21	44.4
CdH-LB-SM	J11	3- quad e	238	721.3
CdH-LB-SM	J11	3	196	468.2
CdH-LB-SM	J11	2	43	115.4
CdH-LB-SM	J11	3- quad w	5	6.1
CdH-LB-SM	J12	3	8	94.5
CdH-LB-SM	J12	4	154	218.3
CdH-LB-SM	J12	3b- quad sw	150	376.1
CdH-LB-SM	J12	2	2	3
CdH-LB-SM	J12	3	13	30.5
CdH-LB-SM	J12	4b quad w	48	95.2
CdH-LB-SM	J12	5- quad e	12	28.6

Appendix C

Table 1: Faunal remains, continued

Area	Unit	Level	Count	Weight
CdH-LB-SM	J12	8	6	15.3
CdH-LB-SM	J12	6	20	52.5
CdH-LB-SM	J12	3b- quad w?	226	372.8
CdH-LB-SM	J12	7	8	15.7
CdH-LB-SM	J12	3	197	757.7
CdH-LB-SM	J13	2	26	55.3
CdH-LB-SM	J13	3	8	5.1
CdH-LB-SM	J13	5-floor	128	249.8
CdH-LB-SM	J13	6	24	26.6
CdH-LB-SM	J13	3	50	202.1
CdH-LB-SM	J13	4	79	118.9
CdH-LB-SM	J14	2	4	15.4
CdH-LB-SM	J14	4	82	101.2
CdH-LB-SM	J14	3	158	281.5
CdH-LB-SM	J14	4	120	289
CdH-LB-SM	J14	4	53	290.3
CdH-LB-SM	J14	4	118	156.2
CdH-LB-SM	J14	5-floor	7	6.9
CdH-LB-SM	J14	6	2	3.1
CdH-LB-SM	J14	5- south area	1	0.4
CdH-LB-SM	J14	6	5	9.2
CdH-LB-SM	J14	5	86	207.1
CdH-LB-SM	J14	7	18	37.1
CdH-LB-SM	J15	7	21	28.2
CdH-LB-SM	J15	5	2	14.2
CdH-LB-SM	J15	2	37	81.3
CdH-LB-SM	J15	3	465	1162.5
CdH-LB-SM	J15	6	12	64.9
CdH-LB-SM	J15	4	120	483.7
CdH-LB-SM	J15	4	5	4.6
CdH-LB-SM	J16	6	x	0.9
CdH-LB-SM	J16	3	570	1187.1
CdH-LB-SM	J16	6- cervid antler	1	94.8
CdH-LB-SM	J16	5- quad sur	350	812.1
CdH-LB-SM	J16	4	128	442.2
CdH-LB-SM	J16	2	14	26.4
CdH-LB-SM	J16	6	146	480.6
CdH-LB-SM	J16	3- feature 3	1	918

Appendix C

Table 1: Faunal remains, continued

Area	Unit	Level	Count	Weight
CdH-LB-SM	J16	3	25	144.8
CdH-LB-SM	J16	6	5	1.1
CdH-LB-SM	J16	3	6	5.2
CdH-LB-SM	J16	7	424	1009.2
CdH-LB-SM	J16	8	93	152
CdH-LB-SM	J16	8	4	2.5
CdH-LB-SM	K11	3	52	114.9
CdH-LB-SM	K11	1	1	1.3
CdH-LB-SM	K12	4- deer antler	2	38
CdH-LB-SM	K12	3	44	76.8
CdH-LB-SM	K12	3	4	2.6
CdH-LB-SM	K12	2	1	7
CdH-LB-SM	K12	4- quad w	174	441.7
CdH-LB-SM	K12	4- quad n	71	149.9
CdH-LB-SM	K12	3	2	1.4
CdH-LB-SM	K13	3- feature 1 (deer antler)	14	41.6
CdH-LB-SM	K13	4- feat 1 hearth	1	0.9
CdH-LB-SM	K13	4	7	18.9
CdH-LB-SM	K13	4	3	2.8?
CdH-LB-SM	K13	3	64	101
CdH-LB-SM	K13	3- feature 1	34	207.1
CdH-LB-SM	K13	4	71	278.5
CdH-LB-SM	K13	2- feature 1	7	248.2
CdH-LB-SM	K13	2	57	159.5
CdH-LB-SM	K14	2	4	7
CdH-LB-SM	K14	2	29	38.2
CdH-LB-SM	K14	3	2	35
CdH-LB-SM	K14	4	78	178
CdH-LB-SM	K14	3	166	391.7
CdH-LB-SM	K14	1- feat 1	22	92.1
CdH-LB-SM	K14	4- feat 1- level 1	4	4.2
CdH-LB-SM	K14	4	15	22.4
CdH-LB-SM	K14/K15	1- feature 1 canal	3	8.9
CdH-LB-SM	K15	6	14	50.7
CdH-LB-SM	K15	4	327	1312.9
CdH-LB-SM	K15	5	9	12
CdH-LB-SM	K15	2	370	760.8
CdH-LB-SM	K15	3	588	1186

Appendix C

Table 1: Faunal remains, continued

Area	Unit	Level	Count	Weight
CdH-LB-SM	K15	3	7	77.5
CdH-LB-SM	K15	4	1	96.7
CdH-LB-SM	K15	5	142	603
CdH-LB-SM	K17	3	1	0.7
CdH-LB-SM	L11	3	239	768.1
CdH-LB-SM	L11	2	83	215.8
CdH-LB-SM	L11	3	1	9
CdH-LB-SM	L11/M11	7- feature 1 offering	99	508.4
CdH-LB-SM	L11/M11	6- feature	57	197.7
CdH-LB-SM	L11/M11	5- feature 1	22	48.6
CdH-LB-SM	L11/M11	4	67	164.4
CdH-LB-SM	L11/M11	4	106	329.1
CdH-LB-SM	L12	3	12	16
CdH-LB-SM	L12	3	39	98.2
CdH-LB-SM	L12	2	8	23.8
CdH-LB-SM	L12	4-n	70	134.3
CdH-LB-SM	L12	4-n	3	5.8
CdH-LB-SM	L13	3	376	588.7
CdH-LB-SM	L13	2	40	98
CdH-LB-SM	L14	3	83	247.4
CdH-LB-SM	L14	3	376	623
CdH-LB-SM	L14	3	275	557.6
CdH-LB-SM	L14	2	1	3.2
CdH-LB-SM	L14	2	146	208.1
CdH-LB-SM	L14	3	2	2.3
CdH-LB-SM	L14	3	4	5
CdH-LB-SM	L15	4	294	1192.6
CdH-LB-SM	L15	2	270	695.9
CdH-LB-SM	L15	3	8	352.2
CdH-LB-SM	L15	3	630	1720
CdH-LB-SM	L15	6	87	726.2
CdH-LB-SM	L15	6	36	639.9
CdH-LB-SM	L15	6	3	3.2
CdH-LB-SM	L15	5	94	369
CdH-LB-SM	L3?	4	456	666.2
CdH-LB-SM	M11	3	1	1.4
CdH-LB-SM	M11	3	94	215.8
CdH-LB-SM	M11	2	32	49.3

Appendix C

Table 1: Faunal remains, continued

Area	Unit	Level		Count	Weight
CdH-LB-SM	M12		2	108	372.5
CdH-LB-SM	M12	4- n		276	705.5
CdH-LB-SM	M12		2	6	5
CdH-LB-SM	M12		4	1	4.3
CdH-LB-SM	M12		4	1	4.1
CdH-LB-SM	M12	4- quad n		378	787?
CdH-LB-SM	M12	4- n		2	0.5
CdH-LB-SM	M12	4- quad n		8	13.6
CdH-LB-SM	M13		3	127	436
CdH-LB-SM	M13		2	97	293.7
CdH-LB-SM	M13		2	252	701
CdH-LB-SM	M13	4 deer antler		9	41.4
CdH-LB-SM	M13		3	x	1.5
CdH-LB-SM	N10		2	94	137
CdH-LB-SM	N10		3	184	293.9
CdH-LB-SM	N10		3	1	2.1
CdH-LB-SM	N11		2	69	215.5
CdH-LB-SM	N11		3	90	294.5
CdH-LB-SM	N12		4	232	451
CdH-LB-SM	N12		3	137	172.2
CdH-LB-SM	N12		2	62	101.3
CdH-LB-SM	N13		3	225	821.2
CdH-LB-SM	N13	feature 2		131	685
CdH-LB-SM	N13		2	21	56
CdH-LB-SM	N13	feature 2		9	2.4
CdH-LB-SM	N13		4	2	1.8
CdH-LB-SM	N13		4	115	334
CdH-LB-SM	N13		4	21	57.2
CdH-LB-SM	N13		3	8	52.2
CdH-LB-SM	N13		5	17	40.3

Appendix D: Level Notes and Unit Levels by ASD

Unit G12

Level	Description
I	Post occupation colluvial fill.
II	Cultural fill with normal quantities of material.
III	Fill above floor. Fill above white compact floor which surprisingly is not present. The southern half of the unit is fill while the north is a compact floor without evidence of cal.
III North	Loose rock fill. This fill level in the north of the unit reached all the way to the presumed level where the lime floor will appear. The south did not contain nearly as much fill. There were no artifacts of note.
IV	Compact sediment south of the dividing wall. This area was the southern half of the unit. The stratigraphy of the unit was separated by the wall that runs east to west, so presumably these deposits occurred fairly soon after the structure was abandoned. A prepared white floor was found in the southwest corner of the unit higher than expected. The rest of the unit was brought down to the floor level.

Unit G13

Level	Description
I	Post occupation colluvial fill.
II	A compact clay sediment. The compact fill above a rock fill with not much cultural material.
III	A rock fill that was excavated with picks, there was not a great deal of cultural material.
IV	A packed rock fill. The level revealed the western wall completely which will be mapped with the final level.
V	A cultural clay loam sediment level laid down during use of the floor. This level was excavated down to the presumed white lime floor. However, as in G12, this was not present. In the SE quadrant there were pieces of slate, this will be removed and excavated as level 6 cuadrangulo sureste. There was not a great deal of cultural material. The wall in the northwest of the unit presumably unites with the north-> south wall in H16, however they are not directly in line.
VI, quad SE	Floor covered with white lime and made with compact clay. The *oliva peruviana* found in this level, in conjunction with the cut stones, closing off the white lime floor. There is also lime marking off the east closure of the lime floor. A bead was from an undetermined shell.
VII	Fill with cultural material below the clay surface. The level finished when the fill began to have more stones and more sediment. .

Unit G14

Level	Description
I	Post occupation colluvial fill.
II	Cultural fill. The wall continuing from G12 was revealed. This appears to be the same wall that was encountered in H16. Level two was finished when the borders of the wall were revealed. To the west compact sediment began to appear and to the east there was a rock fill. The sediment in level two appears to be the same as level one but it is less dark.
III, quad west	More compact sediment that is clear. In the northeast there are rocks that form a stone floor.
III, quad east	Fill of médium stones. The sector to the east of the wall has Little archaeological material, it is fill containing small and médium sized stones.
Four, quad east	Uniform fill, the material contains polished black ceramics, bones, molluscs (*Choromytilus chorus*), and a few small stones.
IV, quad west	Fill of semicompact sediment, thick texture, yellowish brown color, with inclusions of white particles. A bone artifact was found and the fill is clearly cultural. The security of the context is clear. Exactly at the interface between levels four and five the largest quantity of material was found wihch gives clear indications of the level of occupation. The found materials are two bone artifacts, the first was rectangular and measured 2.5cm of length and was polished. The second artifact was considered a feature because it was in the form of a

	fish and was close to the floor. Additionally, it was similar to the artifact found in unit G12 in the south edge in level four. Near this find there was Wacheqsa, Ofrendas,, and Janabarriu style ceramics, bone artifacts, bone, and carbón.
IV, Feature #1	A bone artifact that measures 4cm with a zoomorphic form that appears to be a fish or a bird, was found. It has a round head and a circular eye, additionally it has an appendage that may be a beak. The artifact is the second found in the investigation and is similar to the one found in G12, level four. The artifact is associated with Wacheqsa, Janabarriu, Chavín, and Ofrendas style pottery. It appeared right at the broder between levels four and five.
V, quad east	Fill of compact sediment, fine texture, colo r dark yellowish brown. There is light quantity of artifacts. There is abundant carbon that is present in all parts of the fill. The hypothesis is that people mixed carbón with dirt which implies that they were bringing in the carbón from elsewhere.
V, quad west	The stone fill (26cm x 19cm) is filled with small angular stones. The fill is an intrusión that measures 97cm x 65cm wide. In the borders of the intrusion there is a fill of sediment and small angular stones. In the NW corner there are smooth rocks and in the corner there is a fill of sediment. Then it was decided to excavate the intrusión of stones.
VI	Intrusion of large stones, some of quandrangular form (25cm x 32cm wide), others are round but there is hardly any sediment. This intrusión has clay sediment in the the borders that is mixed with sand and abundant rubble. There were bones and ceramics in the fill. The materials considered to be features were two blocks of worked white stone that may have functioned as molds.
VI, Feature #1	Artifact of stone that measures 170cm x 25cm of width. At one edge it has a fixed border and at the other a perforation in the form of a half moon. The artifact is semi-trapezoidal and it was found in an intrusion of stones in the NW corner of the unit. Next to the artifact was a second artifact, 5cm away, of a similar form.
VI, Feature #2	Stone artifact of quadrangular form with borders at the extremes and a fluted area between them. The white artifact is 34cm in width. It may have been a mold used in metalworking.
VII	Fill of clayish sediment, mixed with rubble and sand. It was similar to the intrusive fill. The texture of the sediment is thick and the color is dark yellowish Brown. There is no cultural material and considering that this level is sterile it appears similar to other levels of this depth in other units.

Unit H12

Level	Description
I	Post occupation colluvial fill.
II	Cultural fill, dark sediment in bunches with few rocks, semi-compact sediment with little clay. The rocks are aligned NW/SE. A fragment of decorated Chavín ceramic was found in the screen (artifact #1). The unit was excavated from the height of the rocks and we decided to end the level because the south profile of H13 has different sediment and coloration.
III	Compact sediment with small rocks and cultural fill. The alignment of the stones in level two did not form the facing of a wall. However, there appeared the beginning of a wall with at least two rows of depth in the NE corner and it headed east twoards unit I13. A concentration of ceramic was found in the west of the unit. In between the fragments there was a decorated fragment of ceramic.
IV	Semi-compact clayey sediment. In the south profile of H13 there was a fill of médium rocks and dark sediment in the west quad that reached to the floor visible in H13. In the east quad next to the wall there was a clayey sediment that covered 25cm and then the same sediment that was in the NW appeared. The clayey sediment of the NE, SE, and SW dominated level four and the fill of the NW quad will be level five. The alignment of the rocks to the south, that touch the east wall, could be a wall. In the north profile, E120cm, there was a concentration of large undecorated black ceramics.
V	Fill of dark sediment with médium rocks and loose sediment. This level began in the NW quad at the same elevation as that of level four in the rest of the unit but after 25cm of level four the sediment of level five began to appear in all of the unít and in order to avoid confusión we ended level five and began level six. There is little archaeological material.

VI	Fill of dark sediment with médium rocks and loose sediment. It is the same fill sediment as level 5, what appeared in the NW quad has now covered the entire unit. It is mainly bulk ceramic, borders, a red decorated fragment and the fragment of a marine shell. The wall to the east was formal and contained large well cut rocks. The alignment of the rocks to the south was also a wall. Below the loose fill of rocks was a thin cap of compact sediment and below that was a prepared white floor. A spondylus bead was found above the white floor in the north of the unit. In the NE corner the continuation of the wall from H13 appeared. At the east wall there were three walls forming narrow passages with a fine white floor. To the south of the south wall the west profile appeared to be a clayey sediment even though the south profile appeared to indicate a fill of loose rocks like that of level six. Just to be certain we changed to level seven.
VII	We excavated a little deeper to the north of the wall but did not find the white floor. There were few artifacts so we stopped digging.

Unit H13

Level	Description
I	Post occupation colluvial fill.
II	This is the first intact level. This level was completed when we encountered stone rubble across the entire unit. There will most likely be more levels in this unit than in other units as the floor will not be encountered and there is not a great deal of road fill.
III	A fill level, we are dividing it arbitrarily. The sediment is grey and dark with many unconsolidated rocks. The sediment is loose and the rocks are easily removed. The next arbitrary level will be 3B. There is a rock wall in the NE part of the unit. The rock fill within this structure is very loose and is like the sediment on the outside. It appears to be the same material. There is a lot of bone and ceramic. We also found a claw of a small animal that still has the joint in place. A small cluster of shell was found in the middle of the western side of the unit. The ceramics were mostly blackware with thick rims.
III B	A configuration of loose fill evident in Level 3. It does not appear to be a change in sediment or ceramics, loose sediment, unconsolidated small rocks, with dark grey sediment. This level will end arbitrarily. Artifact #1 was a large concentration of ceramics in the southwest corner of the unit. Most of the ceramic was unpolished black or blue. The sediment with the wall in the NE corner remains a similar fill much like outside the wall. There seems to be fewer amounts of ceramics in the screen as we go down so we will call this a level now and start the next one at 3C sediment with wall area of NW corner is the same loose fill as the wall in the NE corner of the unit. Level with 3B as it is supported only by rock fill.
III C	A cultural fill that is continuous from level 3 and 3B. However, the amount of material seems to be getting less and less. The level consists of loose unconsolidated rocks. The sediment is very loose and the sediment seems to be brown towards the end of the level. The ceramics in this level were fairly scarce. There does appear to be a Chavin style rim shard but this is mixed in with some later orange ceramics. Most of the ceramic does appear to be blue or black but most of it doesn't seem very polished. We have some interesting lithics such as obsidian, a water worn pebble and a smooth lithic that is very crumbly inside is artifact #1. We found a grinded down human molar as well. There are no walls, the amount of material seem to have decreased as we have moved from 3 to 3B to 3C.
IV	This is a continuation of the loose fill evident in level 3. There does not appear to be a change in sediment or ceramics, loose sediment, unconsolidated small rocks, and dark grey sediment. We shall now end this level arbitrarily.

Unit H15

Level	Description
I	Post occupation colluvial fill.
II	Fill of semi-compact sediment, granulose texture, brownish yellow color. The soil is semi-compact, mixed with rubble (small stones) and a few small rocks, 5-8cm large. The color of the sediment is yellowish brown. The archaeological material was bone and ceramic

	fragments, the bulk ceramics appeared with greater frequency.
III	Fill of angular stones that varied from 8cm to 15cm in length, the compact granular sediment was greyish brown. The archaeological material consisted of fragments of ceramics and bone, and in this level a modern coin was found (1942) at an elevation of 1.10m below the surface.
IV	Fill below the compact white floor. There were two wall, one ran from SE-SW and the other ran from NE-SW. They united and formed a 90 degree angle in the SW.
V	Fill of compact granular sediment, color brown. There were also large stones, 20-30cm long and 15-18cm wide.
VI	Fill of compact soil with small rocks. This level clearly exposed the continuation of the small wall that goes from the north to the south from unit H16 to unit H15.

Unit H16

Level	Description
I	Post occupation colluvial fill.
II	Compact clay level.
III	A fill of dark sediment with médium and large sized rocks. There were severak ceramic borders and some obsidian flakes as well as some bone artifacts. A posible floor appeared and the sediment bécame more red in color.
IV	A compacted sediment and floor. There was little archaeolgial material but there was some red pigment (color 10r 4/8) above the north side. A row of stones was encountered.
V	A cultural fill between apparent walls that run E-W and N-S in the SE corner of the white floor appeared that is partially visible in the last level's stratigraphy. Additionally, a stone floor was visible in the south. This was mapped but will be removed with the next level. There is a large gap underneath the white floor which is where the fill from I15 connects with the fill underneath this unit.
VI	A cultural fill above floors that ended with profound differences between the areas in the north and the south. North of the main E-W wall was fill, in the south floors. The SW corner had a white floor that was left in place. The white floor in the SE corner, from the last level, continued into H15 nivel tres (and defined its end). Another N-S wall appeared in the SE corner as did two large stones which border the opening into unit I15 (opening in fill). Hopefully these walls will be better defined in H15. The large N-S wall only appears to head down on its west side, on the east side there is fill underneath the large stones.

Unit I 13

Level	Description
I	Post occupation colluvial fill.
II	Fill with a few artifacts and a worked bone.
III	This fill contained abundant large and médium sized rocks (30 x 40cm) and compact sediment.
IV	This level contained abundant large rocks, and semi-compact fill sediment. This level appeared to be a posible wall fall. There were many large rocks, a rocky aglomeration to the NE and the beginning of a wall that began in the SW corner. There were ceramics, bones and lithics in the level.

Unit I 15

Level	Description
I	Post occupation colluvial fill.
II	Compact level with a dense texture and brownish color. There was rubble fill to the east of the level. There were diverse but limited archaeological materials varying from ceramics to bone to obsidian.
III	Compact dense sediment with small angular rocks in regular quantities. There was a geometric cist near the north profile but there was nothing inside it.
IV	A large quantity of small smooth (5-8cm length) mixed with compact soil.

IV, Feature #1	This feature consisted of a collection of rocks in a geometric form where the rocks were found with mud mortar. Some of the rocks have a length of 20-25 but inside the cist there was no archaeological material.
V	Compact granular sediment with the presence of large smooth rocks (20-35cm) long and small rocks (10-12cm) long.
VI	Fill of compact sediment of gracular texture and brownish color. The sediment is mixed with small rocks (15-20cm) in the west and north.
VII	Ompact granular sediment with rubble fill. In the center and the NW of the unit there was an accumulation of médium sized rocks, 12-18cm long. The color of the sediment had two color tones, red and pale yellow. In the SW corner there was the remains of a hearth with a large quantity of ash.
VII, Feature #2	The feature consisted of ash and a hearth stucture. The rest of the ash was found in the SW corner of the hearth. This hearth was made of stones arranged in a circular form, they were held together with mortar.
VIII	Was a fill of rubble and compact granular soil of a reddish brown color. There was a wall of mud that went from the east to the west. In part of the fill there was a bone artifact and a planar stone with geometric inscriptions. From the center to the west profile of the unit was an accumulation of ash and carbón.
IX	A fill of rubble with compact granular soil, color dark grey. There was a large quantity of smooth rocks and cobblestones. There was no archaeological material.

Unit J11

Level	Description
I	Post occupation colluvial fill.
II	Sediment with few rocks and a low density of artifacts.
III, quad east	It is a fill above the small wall. This level was mainly composed of plain ceramic and bone. The rough outline of a wall defined the end of this level. The wall was similar to that found in unit M13/N12. Level four may be excavated after the west quad, composed of fill, is completed.
III, quad west	A loose rock fill; level two in this section ended slightly deeper than normal as there was no evidence of the floor. This quad was separated from the east as the east is not all loose rock fill. The fill sloped down to the north. Underneath this was no recognizable architecture so no map was drawn.

Unit J12

Level	Description
I	Post occupation colluvial fill.
II	Modern fill.
III	Dark, loose soil, unconsolidated, with small rocks in the east. A compacted, consolidated rock and hard clay in the west. Alignment one separates the two soil changes. Alignment two is architecturally in line with the two large rocks in the SW corner. Each soil is substantially filled with cultural material. Artifact #1 is a bone that looks like it was worked on the edges as it is very smooth. Some Janabarriu pottery was found.
III B, quad SW	This level began with many small rocks in a matrix of unconsolidated fill. It was easy enough to excavate by hand. Near the end of the level, the fill became more consolidated and more similar to the quad to the east. Most ceramic was large rim shards of domestic vessels, there was one Janabarriu fragment that was found. Ceramic and bone was plentiful at the beginning but near the end it had tapered off to a few small fragments per bucket.
III B, Quad E	There are many consolidated rocks and compact clay. The rocks are very large, cultural material is less compared to earlier levels. There is a mix of late and early ceramics- the level was cut off arbitrarily after 15cm. The soil has not really changed from the previous level in color. There are no artifacts and the unit is divided into two alignments. Alignment one comes out at the southern middle while alignment two goes southwest from the northeast corner. Both alignments are large rocks. Alignment one has fill underneath while Alignment

	two clearly is stacked on other rocks. The soil is hard and almost floor-like, there is no distinguishing bone, there are orange and black rim shards, and no decorated ceramics. The soil was consistent throughout the level. There were fewer ceramics as we went down further. We plan on removing Alignment one and reuniting the unit as it looks like both areas have the same soil.
IV, quad SW	A compact clay interspaced with large architectural stones and non-architectural stones. In the north, there is a level of loose earth and stone fill with many holes. A darker clay is appearing in small patches. For the most part it was a consolidated fill with hard packed clay and small rocks. In the northern part of the unit, loosely consolidated fill with many holes began appearing. We ended the unit here in the north and began an arbitrary unit for the southern cuad. We also removed one course of the stone wall running South-North in the center of the unit. The mortar contained shards of Janabarriu ceramics and many red shards. We left the rest of the wall and will excavate it and the southern half of the area as level 4B. The northern quad will be called Level 5, cuad norte.
IV B, Quad W	A mortar and fill near muro uno, running N-S in the center of the unit. A hard packed clay fill, with increasing occurrence of piedras unit goes down. Same fill and soil type as Level 4. The ceramics are most apparent in the mortar of the wall. Besides that small shards are evident in the hard packed fill. One Janabarriu decorated shard was found beneath the wall. Beneath the wall there is a level of dense rock, sand and clay. It looks like it could be prepared. Due to the fact that there is no level 5 (loose fill) our next level will be called level 5 and will include the entire unit. A few shards of shell were found after screening the fill. No flotation or phytolith samples were taken because this level is the same fill as level 4. On August 11th we excavated the far NW corner of capa 4b, which was not excavated before. In this level we found a piece of cut granite which was bagged as a lithic.
V, Quad W	No level changed noted, we moved on to level 6.
V, Quad E	A level of loosely consolidated stones with many holes, there was little cultural material. This level was a very loosely consolidated fill of small rocks. It was easy to excavate by hand and shovel. This level ended when we encountered a floor surface of dense sand and clay mixture. This next level is level 6 and it is present throughout the unit. From the profile it is possible to assume that this level is the same that is present in the unit K11 to the NE. This level is also similar to level 3B cuad SW.
VI	A dark layer of soil directly above a prepared red clay and sand layer. It is most likely an indoor floor surface. It was a fairly sterile level. The level began with a brown clay layer which quickly turned into a floor surface. Both the brownish clay and the red floor surface were very hard. Next came a darker band of blackish clay, followed by small rocks in a dark matrix of clay and sand. Nivel 7 should have started with this matrix of dark clay sand and rocks, but we didn't notice the change until the wall profile was exposed. Within the red floor surface there were small greenish rocks, indentified as copper ore. The ceramics were fairly sparse except for in the NW and Se corners, were the majority of the cultural material was collected. The floor surface is approximately 10cm thick, highly stratified and easy to make out in the southern profile. We excavated nivel 5 about 10-20 cm too deep. The next level, nivel 7, will be darker soil and rock matrix in which we have already excavated about 10-20cm.
VII	A dark matrix of clay and small rocks that was slightly moist and fairly durable. This level began during the end of level 6. It is composed mostly of a fairly durable dark surface with similar sized rocks, like in previous levels. Few ceramic and bone fragments were present, this level was also fairly moist and the clay was very fine. This level and unit was closed once we came to an even moister clay level with larger rocks than in previous levels. We believe that the fill below this is sterile.
VII B	The same as level 7, dark consolidated clay matrix, with many small rocks. It was most likely a building fill that was fairly sterile but with some ceramics. Suelo con abundantes

	piedras medianas. Escaso material arqueológico. Cerramos el nivel cuando el suelo se volvión más arrenoso y con muchas piedras más suaves.
VIII	Smooth, humid, red sediment. The humid clay sediment is very smooth.
IX	Sterile level with small smooth rocks.

Unit J13

Level	Description
I	Post occupation colluvial fill.
II	Fill of semi-compact sediment with granular texture and brown color. The fill is homogenous with almost no stone inclusions and the associated material was ceramics and bone.
III	Fill of semi-compact sediment with granular texture and yellowish brown color. There were many large angular rocks (16cm x 10cm wide). The terrain of the unit was in the west while in the east there was a white floor. This occupies a 1m x 0.25m. There was diagnostic ceramics, bulk ceramic, bone, lithics, and mollusks (*Choromytilus chorus, Caracol turbante*). There is a two meter stone border (12cm x 6cm wide) between the white floor in the east and the compact floor in the west. This alignment is above the floor.
IV	Floor composed of compact sandy sediment of a clear grey color whose base is composed of gravel. The floor is uniform and there are few inclusions of médium sized rocks (22cm x 18cm wide). The associated materials are bulk ceramics, diagnostic ceramics, bones, mollusks, and lithics.
V	Floor made of compact clay sediment of a granular texture and yellowish brown color. At the surface there were planar rocks, one of which was quadrangular and large (30cm x 30cm) while the other was pentagonal (17cm x 12cm).
V, Feature #1	Small circular hearth which was 14cm in diameter. The borders were well defiend in the north. The sediment inside it was a reddish color while the border was dark grey. There was little charcoal in the hearth. It was defined by a large quadrangular rock (54cm x 13cm) in the north and in the south by a smaller burnt rock.
VI	Fill of small rocks (13cm x 7cm) with loose fine brown colored sediment. The fil lis homogemous.
VII	White floor that extends over the entire unit but it is more clear in the Eastern side of the unit. There were two well defined enclosures and one posible passage on the east side. In the other sides, NW and NE, the enclosures were well defined and the enclosure in the north has an access point.

Unit J14

Level	Description
I	Post occupation colluvial fill.
II	A brown colored with few rocks. In the screen we found an obsidian core but there was little other archaeological material. At the end of the level a bone bead was found in the SE quad as well as a lithic spoon that could connect with the fragments found in K14 and K15.
III	Darker sediment than last level, it was also sandier and more compact. There were abundant bulk ceramics. There was a white compact floor in the east of the unit, the alignment of the rocks in the north is a wall that ends in the east of the unit. There were rocks in the NE corner that could be part of the wall that was sen in the west side of K15, level 3. There was a fine flat stone incrusted in the floor in the SE quad. In the NW corner there were two rocks that appeared to be from a wall perpendicular to the north wall.
IV	The floor was in the east and there was compact sediment in the west. The floor was formed of yellowish gravely clayish sediment. It was yellowish brown. To the east was an alignment of rock which was oriented from the NE to the south and formed an enclosure. It could signal that below the floor there was a canal that ended in the east. There were black ceramics, Janabarriu ceramics, bone, lithics, crisocola, charcoal, a bone artifact, and mollusks (*Scutalus, Choromytilus chorus*) found in the level.
IV,	A conglomeration of ceramics, bone, and lithic material. There was a fragmented base

Feature #1	covering a griding stone. Some of the other fragments of ceramics were in the base of the rock. Below the bone material was worked bone with incised designs. There was also carbón. The ceramics were generally Urabarriu, but there were also three lithic pieces. One was 5cm wide, the smallest was 2.5cm, and the largest was 12cm.
V	Fill of médium rocks (36cm x 20cm) and small rocks (7cm x 8cm); in the fill there was compact clay sediment of a granular texture and brown in color. The fill was homogenous and the associated material was bulk ceramic, bone, obsidian, and mollusks (*Choromytilus chorus* and a snail).
VI	Fill of médium sized round river rocks (40cm x 28cm) and small rocks (4cm x 6cm). There was also a clayish sediment of a yellowish brown color. In the fill was gravel and clayish sediment. The fill was cultural and it is posible that the rocks were brought from the river.
VII	Floor of semicompact sediment of a fine texture with abundant rubble and yellowish brown color. The surface of the floor was semicompact and the base was formed of rubble and gravel. There was only bone cultural material. The floor was constructed parallel to the north wall of the enclosure and was associated with the functioning of the canal that was found to the east.

Unit J15

Level	Description
I	Post occupation colluvial fill.
II	Fill, granular texture, Brown color, semicompact consistency. The fill only contained small rocks. The fill pertains to the north corner and is a fill from later occupations.
III	Fill of compact sediment, thick texture, brownish grey color, with abundant angular rocks (7cm x 5cm wide). The sediment is clayish with small rocks (12-14cm) and archaeological material such as bone and ceramics. There was a wood cylindrical artifact 2cm in size. This level was a compact fill with diverse archaeological material such as decorated ceramics, bone, lithic, mollusks, and charcoal.
IV	Fill of compact sediment, brown in color. The floor is compacy, dry, and granular. The fill contained diverse archaeological material such as lithics, mollusks, charcoal, ceramics, and bone artifacts.
V	Compact fill, brown in color with rounded rocks, and little cultural material other than bones and ceramics.
VI	Compact floor, thick texture, brownish red in color, with small rocks (8-10cm) and rubble. This level consisted of rubble with little archaeological material (bone, ceramics, lithics).

Unit J16

Level	Description
I	Post occupation colluvial fill.
II	Cultivated field with modern materials. This level was disturbed by previous road work.
III	Sediment, dark and compact, with the beginnings of a wall.
IV	Fill level, with small rocks. Below the wall of level 3, that crossed into the north quad, the level continued below the wall and served as its base.
V	Sediment with few rocks, at the south of the algnment of médium rocks that separated level 4 from level 5.
VI	Sediment, regularly compacted, combined with small rocks. The level had smooth sediment to the north of center wall and more compact and dark sediment to the south of the center wall.
VII	Clay fill, the space in between the walls, the entire unit, was excavated as one level.
VIII	A fill at the base of the south wall. The level ended when we hit a sand level. All of the material was excavated from the south side of the unit and a new species of mollusc was found (*Thais chocolata*).

Unit K11

Level	Description

I	Post occupation colluvial fill.
II	Disturbed cultural fill. This level ended when we encountered evidence of the floor in the upper (north) portion of the unit. A nail was found in the northern edge of the unit and is presumed to be some of the last evidence of Tito's cleaning in 2003. The northern edge of the unit contains the border of the floor. The floor will be mapped in level 3.
III	This level began after the nail and evidence of the floor were encountered in the northern edge of the unit. In the southern portion running east-west there appears to be a canal.

Unit K12

Level	Description
I	Post occupation colluvial fill.
II	Cultural level above stone floor. This level will be drawn in conjunction with level 3. It was defined by the appearance of the stone floor, which was quite low in some areas.
III	A compact clay level with larger stone structures. The end of the floor (east side) became visible, small wall with enclosure in north corner. The soil was very compact clay; in the southern edge there appears to be another border to the floor; undecorated diagnostic pieces were found as well.
IV, quad NE	Fill level below the floor level. The cleaning exposed the walls in the north quad that extend out from the main floor. There were beads found in this level, as well as a metapodial, but not as many as expected. The concentration of ceramic, artifact #4, appears to be a broken seated vessel. It is now clear that there is fill underneath almost all of these levels.
IV, quad NW	This fill level was opened in order to examine the relationship with unit J12, to the west. It appears to be fill placed in order to create a level surface for the floor. The fill contains more artifacts than what we would expect for a Chavin fill. The area to the north of the dividing wall will be lowered as a separate quad. The fill does contain small green rocks similar to those found in 2003. The border began to appear more frequently so I decided not to bag them as artifacts, in the future they will just be drawn in. The "descending staircase" away from the floor may have been to create a level floor. It now appears that the quad was not all fill but rather a prepared entrance to the floor area. The level stopped when fill was encountered in the east and north. There were three levels of "steps" heading down from the main floor. Although this could have been excavated as three separate cultural levels it seemed that all of these steps were part of a single construction event. The fill apparent in the north wall was what constituted level 5 in K13 quad SW.

Unit K13

Level	Description
I	Post occupation colluvial fill.
II	A clay level filled with small shards. A thin level with no features and compact earth- bone beads were found in the clay sediment. They were associated with camelid bones. This context was designated Feature #1. There was also obsidian present but no architecture was noted.
II, Feature #1	Concentration of artifacts (beads) and bones in the Eastern sector of the unit.
III	Compact level with architectural features, a small wall in the east of the unit and a circular feature north of this area.
III, Feature #1	Concentration of artifacts and bones. Bone beads, a triangular artifact made of bone, a circular artifact, a disc shaped artifact, a worked diaphysis of a metapodial, bone artifact, lithic artifact, and lithic spoon.
IV	Semicompact level with architectural features. The rocks that formed a circle where the borders of a hearth which was designated Feature #1 of level four. The level contained large bulk ceramics, two round lithic pieces, a mano, worked bone, bones, and carbón. There are many architectural features and there is a canal that comes from L13 down into K12. The canal was designated Feature #2. There was a feline jaw in the SE corner. There was little

	cultural material at the end of the level.
IV, Feature #1	Hearth, all of the material from the hearth was collected in flotation and phytolith bags.
V	Fill of loose rocky sediment. There was little archaeological material.

Unit K14

Level	Description
I	Post occupation colluvial fill.
II	A superficial sterile level with not much cultural material. Presumably it is the level preceding a cultural/architectural level. Contained little cultural material.
III	A strange fill that was excavated in quadrants, there was red soil in the NE quadrant, sand and mud in the center of the top half, circular architecture in the NW. The reddish soil in NE quadrant is different from the rest of the fill. In the south of the unit there was a row of stones of the wall that continued from the small stones of K13. There was a concentration of carbon in the center of the unit.
IV	Canal located in NE quadrangle heads south and turns west at the center. Ash was found and a wall of circular structures were removed. Ceramic is light and a mixture of later and earlier periods including two Janabarriu fragments. Shell is also prevalent as we have found black snail shells and a clam type shell. Ash found on top of soil in the center of the northern half. A canal has been discovered proceeding south from the northeast quadrant and turns west in the center of the unit. The wall of the SW quadrant will be removed at the end of the level along with the circular structure in the NW. The soil present under the top rocks of the wall is manmade/prepared with cultural material present. The canal will be excavated as a feature.
IV, quad SE	30N-60E, a small area directly above the capstones of the canal. Sediments are very similar to inside the canal with dark clay filled sediment with lots of carbon. This appears to be part of a collapse of the roof of the canal that functioned as a drain- as evident from the sediment present in the canal.
IV, Feature #1	Gallery of canal with large beam stones above it. The large stones start in the NE corner of the unit and run SW until it hits the middle of the unit before appearing to turn west. The area is filled with large chunks of carbon and green sediment. It is roughly 50cm deep. Directly under level 1 of the canal is a reddish clay, followed by a loose fill. This is referred to as a "French drain"- this fill permits water to run on top of the clay freely. Appears to be a functioning canal. The wall at the north end is presumably a later addition. Deposits of greenish rocky dirt and carbon are very similar to those present in Rocas. The first level probably washed in from surrounding construction material.

Unit K15

Level	Description
I	Post occupation colluvial fill.
II	Cultural fill. We are following the stratigraphy of unit K14, however a wall has appeared running east to west in the center of the unit. The south edge of the unit entered level 3 which contained most of the artifacts.
III	A wall runs east to west through the center of the unit. Unit con abundante arquitectura. Area del norte del muro que corre de este a oeste es possible basural.
IV	Rocky clay trash fill. A trash area in between two walls that is related to the similar area in L15. The stirrup spout vessel appears to be late Cupisnique. Another spout appeared in the unit along with a fairly complete human humerus, later a possible human pelvis was found. These random body parts are found in an area that was presumably a dump- this will need further investigation. We changed levels when there were fewer rocks in the soil and the soil was redder. West and south quads were bagged separately as they were not part of the same interwall space. Most of the ousted will be bagged with J15. The south quad was finished when Anselmo encountered loose fill similar to that in the canal.
V	A brown/red clay fill. This fill level that did not contain any notable artifacts, unlike the

	upper level. A loose rock fill marked the end of the level. The wall still clearly heads down from here and it is currently 1.2meters in height. The soil is naturally a little moist in this level. At this point we are only excavating in between the two walls, if we open up the other sections of the unit it will be in quads.
VI	The cultural material is not tremendously different than the previous level. The clay level ended when we hit a loose sandy level that was also the base of the wall. This is an odd base and we will excavate deeper here later. There was little cultural material in this last level. Artifact#2, cut bird bone, is of a type that is becoming more common here.
VI, Feature #1, Levels 1 and 2	This was a continuation of the canal. The section without a rock beam was filled with loose stone. Beneath the stone was the same red clay as level 1 in the previously excavated portion of the canal. The loose rock area only contained two ceramics that were bagged with the rest of level one. Level two was excavated by Simeon Caurino and was bagged separately. It appears to be deep loose fill- perhaps deeper than what we would expect for a "French drain".

Unit L11

Level	Description
I	Post occupation colluvial fill.
II	There is evidence of previous archaeological backfill; the soil was very loose. There appears to be a continuation of the canal discovered in the adjacent unit K11, proceeding east to west. In the rest of the unit level we have uncovered more fill and a floor is also beginning to appear.
III	This was the floor level. The soil was strangely green in some of the southern half. A few ceramic shards have been found that are distinctively Chavin period. A carbon sample was taken above the floor.

Unit L11/M11

Level	Description
Feature #1	Sector located in between units L11/M11. This 1 x1m unit was opened in order to investigate the area underneath the slate floor. Color of level = 4/10Y dark greenish gray.
V	Compact level yellow in color with ochre. Medium granular texture with small stones and gravel.
VI	Level of compact sediment andsmall and medium sized stones, diminishing in quantity. Same texture as previous level.
VII	Level composed of large stone fill with large empty spaces between the stones. There appeared to be an alignment of stones possibly forming a canal. The sediment is humid and composed of sandy clay. In the NW of the unit there was animal bone which was considered to be an offering and excavated separately.
VII	Semicompact sediment of medium texture, sandy with cultural material and many small stones. These levels had river sand in them.

Unit L12

Level	Description
I	Post occupation colluvial fill.
II	Clay and rock were mixed; there was some medium-sized ceramic found but there were few diagnostics and little bone. Plant (macro and mico) samples were taken from the NW corner.
III	Compact clay with stones; there were more decorated (Janabarriu) pieces that came out of this level but not much more was found because this was a thin level. To the north of the unit we defined the wall/border to the floor. The floor appeared to extend to the south and the west. One unknown feature is a worked stone on the western wall that appears to have no relation to either wall or floor.
IV, North	Fill above the north floor. This was a cleaning of the area to the north of the slate floor. It contained a ceramic concentration in the NE. The eastern portion of the excavated area clearly showed a flat wall, something that was not seen bordering most of the northern edge

	of the late floor.

Unit L13

Level	Description
I	Post occupation colluvial fill.
II	Compact soil with cultural fill. This level contained some mixed ceramics , atleast one appeared to be Requay period, and little evidence of architecture. The level ended when more rocks began to appear and the western edge nearly reached level three in unit K13. This may be the southern border of the floor.
III	There appears to be two parallel walls in the unit. The one to the west is definitely associated with the floor as it continues across the edge of the floor and to the south. One bead (broken and incomplete) was found. The small section of a wall that crossed the northern section of the unit is quite informal. A large ceramic border was found at this intersection.
III, Feature #1, Unit L13/K13	The canal began in K13 and headed to the NE into unit L13. The map is split between the two units. The canal is covered with flagstones and lined with stones on the side. The base was red clay- apparently there was not a stone base. Tres cerámicas llanas- solo un balde era zarandeado- los otros dos eran para la muestra.
IV	There was a compact floor to the east of the west wall. To the east of the east wall the floor was not as clearly marked as the other floor. The whole level contained a great deal of ceramics. The two units to the east had loose rock floors, this was part of level 5 in those units. This floor is seemingly not present in this unit.

Unit L14

Level	Description
I	Post occupation colluvial fill.
II	A fill level above the first cultural wall. A fill above cultural wall visible from L13, also NE corner contained portions of the large wall from L15. There are now two walls visible in the unit, both extend to the NE and appear to unite with the large E-> W wall. Also, they both emanate from the main slate floor. They will be drawn in the next level when they are completely visible.
III	A fill level that contained two walls heading north, they both presumably ended when they hit the large east-west wall. The western wall's final stone may have fallen. Underneath the floor level is fill which in K14 didn't contain any significant artifacts. This level never revealed any continuation of the air duct from K13- its final stretch may have collapsed. There were no capping pieces of slate found in this unit. The walls that run through this unit have their origin in the slate floor.

Unit L15

Level	Description
I	Post occupation colluvial fill.
II	Grey loose fill that was harder than the level above it. Ceramic is mixed and plentiful. Orange, lue, and brown pieces of pottery with various thicknesses were found. Some camelid bone appeared as well. We lightly entered level 3.
III	This was a very dense clay, the continuation of a wall from the adjacent unit K15, proceeding east to west. Cultural material was present. There was more material on the west side, not so much on the east. Lots of bigger bone fragments were found and the whole region between the north and south wall appears to be fill, trash, and wall fall. There are many bones present throughout the whole area. The ceramics appear to be a mix of some early Chavín material as well as one example of a late Cupisnique stirrup spout vessel. We entered parts of level 4 when attempting to level out the unit. This is most apparent in the eastern half of the unit where the wall profile is more visible.
IV	This cultural fill level is similar to that in K15, it is the space in between the two major walls. Two of the bones that Silvana examined appear to be from sheep- not expected but not

	impossible. The next two levels are also fill. Atleast one elaborate decorated ceramic was found in this level and one possible Cupisnique ceramic was found. There are two sets of elaborate broken decorated shards. One appears to be Ofrendas style and the other is polished blackware with line engravings that appear to have fish designs on them.
V	This was a fill level with sand inclusions and many decorated ceramics- including some that appear to be part of the same vessel as in level 4. There was more sand in this level.
VI	A fill composed of rock, sand, and large amounts of big bones. Additionally, some of the elaborate decorated ceramics from levels four and five appear to have parts in this level- this will be solved in lab. There are Wacheqsa B red style shards also present.

Unit M11

Level	Description
I	Post occupation colluvial fill.
II	Intact cultural deposits and rock fill, like N11 there is evidence of previous excavations entering the level by cultural indications, not natural stratigraphy. The SE quadrant of this unit was dug according to adjacent N11, consequently and mistakenly entering the next level. At the end of the level, after finding one screened nail and nail in place we concluded that the southern third of the unit is fill and remains from previous excavations are present. We did not take botanical samples from this level.
III	Loosely packed dirt and partially disturbed fill with loose stone above a slate floor. In the SE quadrant just north of the long nail an area was found to have a very high amount of large bone fragments and many large diagnostic ceramic shards. Rocks of what first appeared to be a wall were removed to uncover a presumed floor.

Unit M12

Level	Description
I	Post occupation colluvial fill.
II	Workers went through two fill levels in level one, so this should actually be level three (skip). There are rocks beginning to appear, the dirt is still loose but of a different consistency and full of more gravel. There are medium sized ceramic shards and limited amounts of bone. The large stones are beginning to appear the end of the level.

Unit M13

Level	Description
I	Post occupation colluvial fill.
II	Loose fill that came in contact with hard compact soil with many cultural artifacts. Bastantes piedras grandes, el suelo se puso más duro. In this level there was no evidence of previous investigations. The large ceramic rim in the SE corner could not have possibly been missed by previous excavators. There was a loose configuration of rocks in the middle of the unit.
III	A compact clay level with many loose stones in the middle. At this point the stones do not appear to be related to the possible floor features in level three of units N11 and M12. The level was finished when more loose rocks began to appear in the unit. The “wall” to the east in unit N13 is not present in this unit.
IV	This level began when more loose fill was found. It most likely represented when more loose fill was found. It most likely represented an arbitrary division from level 3 as the sediment is still a hard clay. This unit continues to lack evidence of architecture but a great deal of material comes out of the unit. Near the end of the level small stones in a horizontal arrangement were found. These are now thought to be part of a floor rather than a wall base for the wall that is visible in unit N13, level 4.

Unit N10

Level	Description
I	Post occupation colluvial fill.

II	The only difference from level 1 is that the middle stone in the eastern wall visible in the level one drawing appeared. This level contained backfill but we went through all of this and level three should be intact archaeological material. This fill appears to have mixed ceramics.
III	There is mostly hardened clay with patches of softer unconsolidated soil. The floor is present only in the northern sector of the unit. The wall continues on the NE so SE side with smaller rocks. The collection of stones in the SW has a concentration of cultural material. In the NW, there is a high concentration of polished black and ceramics. The test hole in the NW yielded no continuation of the floor's surface.

Unit N11

Level	Description
I	Post occupation colluvial fill.
II	Fill with evidence of previous excavataions. Loose sediment in the west and more compact sediment in the east, between the rocks. In the SW corner 47cm from the west profile and 18cm from the south profile we found a nail probably left behind by the INC in 2003. In N13 the loose fill with modern material ends at the elevation of this nail.
III	We have discovered a floor in the NE quadrant while in the other three there appears to be a wall. As we uncovered more of the level, we realized that under the "wall" the floor continued. We removed all the rocks that were thought to be part of the wall to reveal that the bottom of the entire level is a floor. We will close this unit here. There was no evidence of previous excavations on the floor.

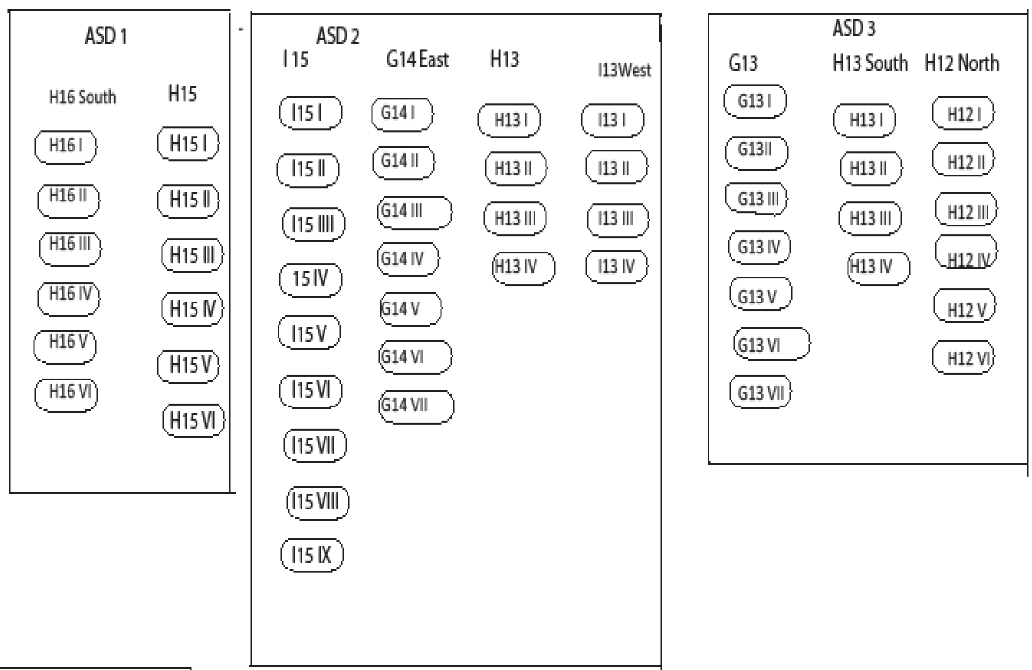
Unit N12

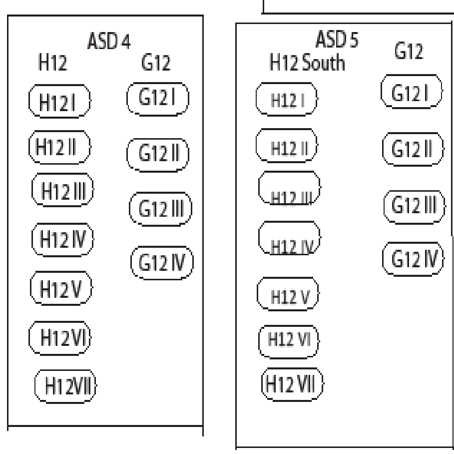
Level	Description
I	Post occupation colluvial fill.
II	Fill of compact sediment with cultutal elements and evidence of road construction fill.
III	Flat stone floor in the east and disordered stones combined with compact sediment in the rest of the area. The loose sediment is composed of rounded stones, some of them aligned to border the floor.
IV	Humid sediment, less compact, with small and medium stones in random patters. There were retouched stones next to the stone line.

Unit N13

Level	Description
I	Post occupation colluvial fill.
II	This was a mixed level that was inadvertently started without completing the fill layer. It appears that there was still some fill in all areas of the unit. It went much deeper in the northern edge of the unit. Ceramics, bone, and other cultural material are visible where the level ends. The northern edge of this level is much deeper than the southern edge.
III	Sediment more compact than the previous level with large rocks aligned from the east to the west. It contained abundant fragments of large ceramics and obsidian flakes. The alignment of stones drawn in level two now appears to be part of a wall. The sediment is getting more clayey especially north of the stone alignment and there was a great deal of archaeological material. The level ended when we had gone down 10cm and there continued to be a great deal of artifacts (mainly ceramics) and a concentration of camelid bones below the stone alignment.
III,Feature #1	Standing stone 65cm tall and 15cm long.
IV	Cultural fill. There was a wall in the NW sector that was oriented from east to the west. To the south of the wall there was a stone floor.
V	Cultural fill above the floor. Compact sediment with less cultural material.
V, Feature #2	A wall that ran from east to west. It began in level two and ended over the floor in level 5.

Appendix D: Unit Levels per ASD





AD A: Excavation of ASDs by unit level. If the unit level has a quadrant indicated on the title line that means that solely that half of the unit pertained to that ASD. As the units were excavated in 2 x 2m blocks it meant that definitions of architectural space, ASDs, were created after the units were excavated. The unit levels were excavated by natural/cultural levels, not by arbitrary levels.

Appendix D: Unit Levels per ASD

AD B

ASD 8

I13 East	J11	J12	J13	J14	K11 South	K12 East
I13 I	J11 I	J12 I	J13 I	J14 I	K11 I	K12 I
I13 II	J11 II	J12 II	J13 II	J14 II	K11 II	K12 II
I13 III	J11 III	J12 III	J13 III	J14 III	K11 III	K12 III
I13 IV		J12 IV	J13 IV	J14 IV		K12 IV
		J12 V	J13 V	J14 V		
		J12 VI	J13 VI	J14 VI		
		J12 VII	J13 VII	J14 VII		

ASD 9

K11 South	K12 East	L11 South	L12	M11	M12 South	N10	N11
K11 I	K12 I	L11 I	L12 I	M11 I	M12 I	N10 I	N11 I
K11 II	K12 II	L11 II	L12 II	M11 II	M12 II	N10 II	N11 II
K11 III	K12 III	L11 III	L12 III	M11 III	M12 III	N10 II	N11 III
	K12 IV						

ASD 10

L13	M12 North	M13 South
L13 I	M12 I	M13 I
L13 II	M12 II	M13 II
L13 III	M12 III	M13 III
L13 IV		

ASD 11

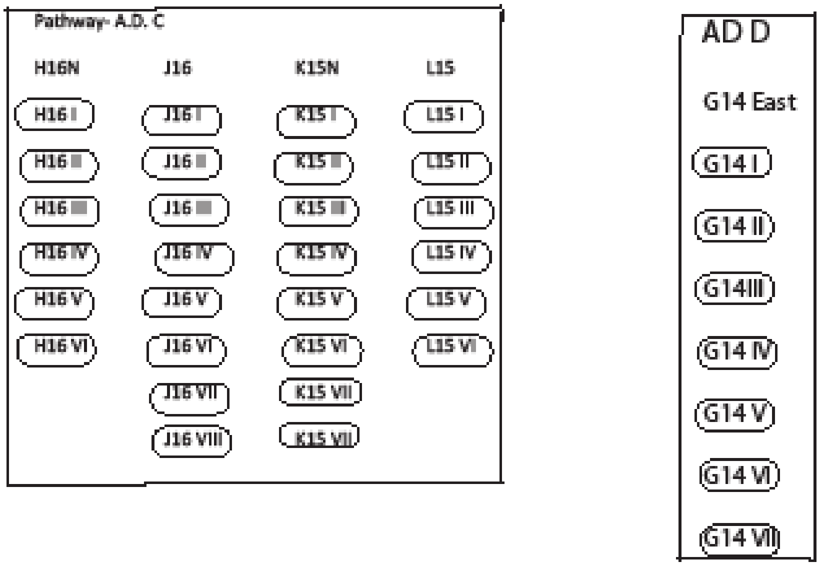
K14	K15 South
K14 I	K15 I
K14 II	K15 II
K14 III	K15 III
K14 IV	K15 IV
	K15 V
	K15 VI
	K15 VII

ASD 12

L14	M13 North	N13
L14 I	M13 I	N13
L14 II	M13 II	N13 I
L14 II	M13 III	N13 II
		N13 III
		N13 IV
		N13 V

AD B: Excavation of ASDs by unit level. If the unit level has a quadrant indicated in the title that means that solely that half of the unit pertained to that ASD. As the units were excavated in 2 x 2m blocks it meant that definitions of architectural space, ASDs, were created after the units were excavated. The unit levels were excavated by natural/cultural levels, not by arbitrary levels.

Appendix D: Unit Levels per ASD



ADs C and D: Excavation of ASDs by unit level. If the unit level has a quadrant indicated on the title line that means that solely that half of the unit pertained to that ASD. As the units were excavated in 2 x 2m blocks it meant that definitions of architectural space, ASDs, were created after the units were excavated. The unit levels were excavated by natural/cultural levels, not by arbitrary levels.

Appendix E

Table 1: Comparative Plant Collection

Colle	Family	Species	Num. of	State of sample	Origin Place
1	FABACEAE	Senna birostris	1	Dry material in herbarium	Ancash/Huari
2	RUBIACEAE	Arcytophyllum setosum	1	Dry material in herbarium	Ancash/Huari
3	POLYPODIACEAE	cf. Polypodium	1	Dry material in herbarium	Ancash/Huari
4	LAMIACEAE	Hyptis eriocephala	1	Dry material in herbarium	Ancash/Huari
5	SAPINDACEAE	Dodonaea viscosa	1	Dry material in herbarium	Ancash/Huari
6	ASTERACEAE	Flourensia macrophylla	1	Dry material in herbarium	Ancash/Huari
7	GROSSULARIACEAE	cf. Ribes	1	Dry material in herbarium	Ancash/Huari
8	LAMIACEAE	Clinopodium	1	Dry material in herbarium	Ancash/Huari
9	SAPINDACEAE	Dodonaea viscosa	1	Dry material in herbarium	Ancash/Huari
10	CALCEOLARIACEAE	Calceolaria	1	Dry material in herbarium	Ancash/Huari
11	ASTERACEAE	Ophryosporus peruvianus	1	Dry material in herbarium	Ancash/Huari
12	PASSIFLORIACEAE	Passiflora	1	Dry material in herbarium	Ancash/Huari
13	SOLANACEAE	Jaltomata	1	Dry material in herbarium	Ancash/Huari
14	VERBENACEAE	Verbena litoralis	1	Dry material in herbarium	Ancash/Huari
15	ASTERACEAE	Acanthoxanthium spinosum	1	Dry material in herbarium	Ancash/Huari
16	FLACOURTIACEAE	Pineda incana	1	Dry material in herbarium	Ancash/Huari
17	FLACOURTIACEAE	Pineda incana	1	Dry material in herbarium	Ancash/Huari
18	LAMIACEAE	Marrubium vulgare	1	Dry material in herbarium	Ancash/Huari
19	LAMIACEAE	Salvia	1	Dry material in herbarium	Ancash/Huari
20	SOLANACEAE	Solanum	1	Dry material in herbarium	Ancash/Huari
21	POACEAE	Phragmites australis	1	Dry material in herbarium	Ancash/Huari
22	OXALIDACEAE	Oxalis	1	Dry material in herbarium	Ancash/Huari
23	OXALIDACEAE	Oxalis	1	Dry material in herbarium	Ancash/Huari
24	BETULACEAE	Alnus acuminata	1	Dry material in herbarium	Ancash/Huari
25	MELASTOMATACEA	Brachyotum figueroae	1	Dry material in herbarium	Ancash/Huari
26	ASTERACEAE	Galinsoga	1	Dry material in herbarium	Ancash/Huari
27	ONAGRACEAE	Oenothera rosea	1	Dry material in herbarium	Ancash/Huari
28	RANUNCULACEAE	Aconitum	1	Dry material in herbarium	Ancash/Huari
29	SOLANACEAE	Solanum hispidum	1	Dry material in herbarium	Ancash/Huari
30	POACEAE	Polypogon elongatus	1	Dry material in herbarium	Ancash/Huari
31	POACEAE	Polypogon elongatus	1	Dry material in herbarium	Ancash/Huari
32	IRIDACEAE	Orthrosanthus	1	Dry material in herbarium	Ancash/Huari
33	POACEAE	Jarava ichu	1	Dry material in herbarium	Ancash/Huari
34	ASTERACEAE	Ageratina	1	Dry material in herbarium	Ancash/Huari
35	ASTERACEAE	Baccharis	1	Dry material in herbarium	Ancash/Huari
36	SOLANACEAE	Solanum tuberosum	1	Dry material in herbarium	Ancash/Huari
37	PLANTAGINACEAE	Plantago	1	Dry material in herbarium	Ancash/Huari

Appendix E

Table 1: Comparative Plant Collection continued

Coll(	Family	Species	Num.	State of sample	Origin Place
38	ASTERACEAE	Gynoxys caracensis	1	Dry material in herbarium	Ancash/Huari
39	ROSACEAE	Polylepis weberbaueri	1	Dry material in herbarium	Ancash/Huari
40	ASTERACEAE	Gynoxys caracensis	1	Dry material in herbarium	Ancash/Huari
41	ASTERACEAE	Paranephelius	1	Dry material in herbarium	Ancash/Huari
42	COMMELINACE	Commelina	1	Dry material in herbarium	Ancash/Huari
43	RHAMNACEAE	Colletia	1	Dry material in herbarium	Ancash/Huari
44	BROMELIACEAE	Tillandsia	1	Dry material in herbarium	Ancash/Huari
45	LAMIACEAE	Salvia	1	Dry material in herbarium	Ancash/Huari
46	PASSIFLORIACE/	Passiflora	1	Dry material in herbarium	Ancash/Huari
47	SCROPHULARIA	Veronica anagallis-aquatic	1	Dry material in herbarium	Ancash/Huari
48	POACEAE	Avena sativa	1	Dry material in herbarium	Ancash/Huari
49	BRASSICACEAE	Raphanus	1	Dry material in herbarium	Ancash/Huari
50	POACEAE	Pennisetum clandestinum	1	Dry material in herbarium	Ancash/Huari
51	POACEAE	Paspalum	1	Dry material in herbarium	Ancash/Huari
52	ASTERACEAE	Tagetes multiflora	1	Dry material in herbarium	Ancash/Huari
53	ASTERACEAE	Gamochaeta	1	Dry material in herbarium	Ancash/Huari
54	FABACEAE	Spartium junceum	1	Dry material in herbarium	Ancash/Huari
55	POACEAE	Nassella mucronata	1	Dry material in herbarium	Ancash/Huari
56	POACEAE	Sporobolus indicus	1	Dry material in herbarium	Ancash/Huari

Appendix E

Table 2: Poaceae Plant Collection

Family	Species	Collection	Procedence	Project	Collector
Poaceae	Cortaderia bifida	4321	Ancash	Conchucos	Jose Roque
Poaceae	Festuca dolichophylla	13301	Ancash	Conchucos	A. Cano
Poaceae	Stipa depauperata	13314	Ancash	Conchucos	A. Cano
Poaceae	Bothriochloa saccharoides	13389	Ancash	Conchucos	A. Cano
Poaceae	Chloris cf. halophila	15360	Ancash	Conchucos	A. Cano
Poaceae	Schyzachyrium sp.	15023	Ancash	Conchucos	A. Cano
Poaceae	Vulpia sp.	14974	Ancash	Conchucos	A. Cano
Poaceae	Paspalum ceresia	15052	Ancash	Conchucos	A. Cano
Poaceae	Agrostis cf. breviculmis	13320	Ancash	Conchucos	A. Cano
Poaceae	Festuca dolichophylla	13189	Ancash	Conchucos	A. Cano
Poaceae	Calamagrostis tarmensis	13327	Ancash	Conchucos	A. Cano
Poaceae	Calamagrostis af. Fuscata	13198	Ancash	Conchucos	A. Cano
Poaceae	Calamagrostis macrophylla	13642	Ancash	Conchucos	A. Cano
Poaceae	Calamagrostis recta	13644	Ancash	Conchucos	A. Cano
Poaceae	Calamagrostis brevifolia	13194	Ancash	Conchucos	A. Cano
Poaceae	Calamagrostis nitidula	13670	Ancash	Conchucos	A. Cano
Poaceae	Calamagrostis chrysantha	13675	Ancash	Conchucos	A. Cano
Poaceae	Calamagrostis rigida	13641	Ancash	Conchucos	A. Cano
Poaceae	Paspalum depauperatum	15502	Ancash	Conchucos	A. Cano
Poaceae	Calamagrostis recta	15265	Ancash	Conchucos	A. Cano
Poaceae	Aristida sp.	15338	Ancash	Conchucos	A. Cano
Poaceae	Poa glaberrina o horridula	3668	Ancash	Conchucos	M. I. La Torre
Poaceae	Dielsochloa floribunda	3572	Ancash	Conchucos	M. I. La Torre
Poaceae	Muhlenbergia peruviana	3702	Ancash	Conchucos	M. I. La Torre
Poaceae	Dielsochloa sp.	3920	Ancash	Conchucos	M. I. La Torre
Poaceae	Jarava ichu	3697	Ancash	Conchucos	M. I. La Torre
Poaceae	Paspalum sp.	3649	Ancash	Conchucos	M. I. La Torre
Poaceae	Poidium nonandrum	3700	Ancash	Conchucos	M. I. La Torre
Poaceae	Aegopogon cenchroides	3692	Ancash	Conchucos	M. I. La Torre
Poaceae	Calamagrostis ovata	3917	Ancash	Conchucos	M. I. La Torre
Poaceae	Avena barbata	3404	Ancash	Conchucos	M. I. La Torre
Poaceae	Stipa mucronata	3406	Ancash	Conchucos	M. I. La Torre
Poaceae	Nassella depauperata	3539	Ancash	Conchucos	M. I. La Torre
Poaceae	Nassella depauperata	3532	Ancash	Conchucos	M. I. La Torre
Poaceae	Nassella depauperata	3523	Ancash	Conchucos	M. I. La Torre
Poaceae	Trisetum spicatum	3503	Ancash	Conchucos	M. I. La Torre
Poaceae	Setaria parviflora	3691	Ancash	Conchucos	M. I. La Torre
Poaceae	Poa lilloi	3534	Ancash	Conchucos	M. I. La Torre

Appendix E

Table 2: Poaceae Plant Collection continued

Family	Species	Collection#	Procedenc	Project	Collector
Poaceae	Poa gilgiana	3518	Ancash	Conchucos	Ɩ. I. La Torre
Poaceae	Poa gymnantha	3536	Ancash	Conchucos	Ɩ. I. La Torre
Poaceae	Eragrostis sp.	3413 - A	Ancash	Conchucos	Ɩ. I. La Torre
Poaceae	Eragrostis weberbaueri	3405	Ancash	Conchucos	Ɩ. I. La Torre
Poaceae	Festuca sp.	3537	Ancash	Conchucos	Ɩ. I. La Torre
Poaceae	Paspalum sp.	3603	Ancash	Conchucos	Ɩ. I. La Torre
Poaceae	Agrostis glomerata	3754	Ancash	Conchucos	Ɩ. I. La Torre
Poaceae	Schyzachyrium sp.	3595	Ancash	Conchucos	Ɩ. I. La Torre
Poaceae	Calamagrostis rigescens	3550	Ancash	Conchucos	Ɩ. I. La Torre
Poaceae	Eragrostis pilgeri	3599	Ancash	Conchucos	Ɩ. I. La Torre
Poaceae	Calamagrostis vicunarum	3541	Ancash	Conchucos	Ɩ. I. La Torre
Poaceae	Muhlenbergia rigida	3588	Ancash	Conchucos	Ɩ. I. La Torre
Poaceae	Muhlenbergia rigida	3721	Ancash	Conchucos	Ɩ. I. La Torre
Poaceae	Bothrioclora sacchariodes	3713	Ancash	Conchucos	Ɩ. I. La Torre
Poaceae	Setaria geniculata	3596	Ancash	Conchucos	Ɩ. I. La Torre
Poaceae	Vulpia sp.	3916	Ancash	Conchucos	Ɩ. I. La Torre
Poaceae	Eragrostis pectinata	3682	Ancash	Conchucos	Ɩ. I. La Torre
Poaceae	Dicsanthelium sp.	3885	Ancash	Conchucos	Ɩ. I. La Torre
Poaceae	Stipa sp.	3663	Ancash	Conchucos	Ɩ. I. La Torre

Appendix F

Table 1: Macrobotanical Samples Exported

Number	Area	Sector	Unit	Level	North	East	Elevation	Context	Liter
501	CdH-LB	SM	J14	7	x	x	x	x	15
502	CdH-LB	SM	K12	2	x	x	x	x	15
503	CdH-LB	SM	N11	3	x	x	x	x	20
504	CdH-LB	SM	N13	5	x	x	x	x	16
505	CdH-LB	SM	N13	3	x	x	x	x	14
506	CdH-LB	SM	L15	3	x	x	x	x	20
507	CdH-LB	SM	L15	3(2)	x	x	x	x	16
508	CdH-LB	SM	N13	4	x	x	x	x	20
509	CdH-LB	SM	N12	3	x	x	x	x	16
510	CdH-LB	SM	N13	4	x	x	x	x	16
511	CdH-LB	SM	N12	2	x	x	x	x	18
513	CdH-LB	SM	M13	3	x	x	x	x	15
514	CdH-LB	SM	N12	4	x	x	x	x	17
515	CdH-LB	SM	M11	3	x	x	x	x	15
516	CdH-LB	SM	L11	3	x	x	x	x	16
517	CdH-LB	SM	M12 r	4	x	x	x	x	16
518	CdH-LB	SM	L11/M	7	x	x	x	Hallazgo 1	18
519	CdH-LB	SM	K15	5	x	x	x	x	20
520	CdH-LB	SM	L13	4	x	x	x	x	20
521	CdH-LB	SM	M12	2	x	x	x	piso	14
522	CdH-LB	SM	L13	2	x	x	x	relleno cult	18
523	CdH-LB	SM	K15	6	x	x	x	piso del mu	16
524	CdH-LB	SM	L11	2	x	x	x	relleno cult	15
525	CdH-LB	SM	N10	3	x	x	x	piso/mixto	15
526	CdH-LB	SM	K13/L13		x	x	x	canal	15
527	CdH-LB	SM	L15	2	x	x	x	relleno cult	15
528	CdH-LB	SM	K13	2	x	x	x	x	20
529	CdH-LB	SM	L12	2	180	150	x	x	15
530	CdH-LB	SM	L14	3	100	190	110.32	relleno cult	16
531	CdH-LB	SM	K11	3	55	160	110.23	x	15
532	CdH-LB	SM	K14	3	45	130	110	relleno cult	16
533	CdH-LB	SM	K11	3	145	9	109.61	relleno cult	14
534	CdH-LB	SM	K14	4	100	170	109.81	relleno cult	18
535	CdH-LB	SM	L14	3	47	182	x	relleno cult	18
536	CdH-LB	SM	K13	4	150	80	109.92	feature 1- f	15
537	CdH-LB	SM	K15	4	170	180	109.31	basural	20
538	CdH-LB	SM	K14	4	100	170	109.81	relleno cult	17
539	CdH-LB	SM	K13	4	x	x	109.66	x	16

Appendix F

Table 1: Macrobotanical Samples Exported continued

Sample	Area	Sector	Unit	Level	North	East	Elevation	Context	Liters
540	CdH-LB	SM	K14	2	100	90	110.21	x	15
541	CdH-LB	SM	H16	6	40	30	x	relleno sobre piso	20
542	CdH-LB	SM	J15	6	40	100	1.62	x	20
543	CdH-LB	SM	K13	5	50	40	109.3	relleno de piedra	14
544	CdH-LB	SM	J14	6	80	120	109.3	relleno	15
545	CdH-LB	SM	J16	6	x	x	x	x	14
546	CdH-LB	SM	K12	3	100	100	110.18	piso	16
547	CdH-LB	SM	K13	3	150	140	110.11	Hallazgo 1	20
548	CdH-LB	SM	J13	5	160	110	109.86	piso	17
549	CdH-LB	SM	J14	4	100	100	109.9	piso	16
550	CdH-LB	SM	J12	7	150	180	108.97	relleno	16
551	CdH-LB	SM	J12	8	80	60	108.68	x	15
552	CdH-LB	SM	J12	2	110	90	110.3	relleno	15
553	CdH-LB	SM	J13	2	90	80	110.28	relleno	14
554	CdH-LB	SM	J14	3	160	40	110.03	x	18
555	CdH-LB	SM	J11	3-quac	160	40	109.8	relleno	20
556	CdH-LB	SM	J14	3	48	146	1.21	relleno	15
557	CdH-LB	SM	J12	6	100	110	x	piso preparado	14
558	CdH-LB	SM	J12	3B	60	50	109.78	relleno	16
559	CdH-LB	SM	J12	3	180	20	110.2	relleno	15
560	CdH-LB	SM	J16	2	x	x	x	x	16
561	CdH-LB	SM	J12	9	x	x	x	esteril	20
562	CdH-LB	SM	J12	5	50	150	109.63	x	15
563	CdH-LB	SM	J11	2	170	25	110.13	relleno	18
564	CdH-LB	SM	J12	3	150	95	109.48	relleno	15
565	CdH-LB	SM	J13	6	130	130	109.51	relleno	16
566	CdH-LB	SM	J14	2	50	170	110.18	relleno	18
567	CdH-LB	SM	J16	6	x	x	x	x	15
568	CdH-LB	SM	J13	3	150	50	110.14	relleno	16
569	CdH-LB	SM	J16	5	x	x	x	x	14
570	CdH-LB	SM	J12	3b-qua	100	100	109.82	relleno	14
571	CdH-LB	SM	J13	4	180	40	109.98	piso	18
572	CdH-LB	SM	J15	4	x	x	x	basural?	20
573	CdH-LB	SM	J12	4	70	75	109.7	relleno	16
574	CdH-LB	SM	J15	5	X	X	X	basural?	18
575	CdH-LB	SM	H15	5	x	x	x	x	17
576	CdH-LB	SM	H16	4	90	120	109.77	piso	15
577	CdH-LB	SM	G14-(	3	175	180	108.4	relleno	16

Appendix F

Table 1: Macrobotanical Samples Exported continued

Sample	Area	Sector	Unit	Level	North	East	Elevation	Context	Liters
578	CdH-LB	SM	H15	2	x	x	x	x	18
579	CdH-LB	SM	H13	5	130	177	109.77	relleno	18
580	CdH-LB	SM	G14-oeste	7	180	135	108.27	relleno	15
581	CdH-LB	SM	I15	7	x	x	x	Hallazgo 1-	14
582	CdH-LB	SM	H15	4	30	130	1.16dd	debajo pisc	20
583	CdH-LB	SM	H15	6	160	30	1.47m	x	20
584	CdH-LB	SM	H12	2	170	20	109.97	relleno	16
585	CdH-LB	SM	G14-quad e	4	175	95	109.79	x	17
586	CdH-LB	SM	H15	3	170	30	1	x	16
587	CdH-LB	SM	G13	4	40	30	109.4	relleno	16
588	CdH-LB	SM	G13- quad	6	120	80	108.68	relleno	16
589	CdH-LB	SM	H16	5	170	180	109.57	relleno	18
590	CdH-LB	SM	G14-quad e	3	100	150	109.6	x	16
591	CdH-LB	SM	H16	2	150	150	110.09	relleno	17
592	CdH-LB	SM	H13	4	140	160	109.17?	relleno	14
593	CdH-LB	SM	H12	3	30	175	109.86	x	15
594	CdH-LB	SM	I15	4	x	x	x	x	16
596	CdH-LB	SM	H16	3	70	150	109.87	relleno	15
597	CdH-LB	SM	H12	6	170	40	109.35	relleno	16
598	CdH-LB	SM	H12	4	70	130	109.46	relleno	15
599	CdH-LB	SM	H13	3C	130	170	109.29	relleno	16
600	CdH-LB	SM	I15	9	190	189	1.95m	x	18
601	CdH-LB	SM	I15	6	35	180	1.47m	x	20
602	CdH-LB	SM	I15	5	80	120	1.06m	x	20
603	CdH-LB	SM	I15	8	15	180	1.60m	x	20
604	CdH-LB	SM	I15	2	170	170	85cm	x	19
605	CdH-LB	SM	I15	3	20	170	1.00m	x	18
606	CdH-LB	SM	G14	4	160	160	109.65	x	18
607	CdH-LB	SM	G12	3	150	90	109.21	relleno	20
608	CdH-LB	SM	E14	5	60	60	109.2	x	16
610	CdH	WF	8	x	30 s del	35	122.43	x	15
611	CdH	WF	8	x	50	120	123.27	no cultural	20
612	CdH	WF	7	x	x	x	116.75	Hallazgo 13	15
613	CdH	WF	7	x	50 s del	240	118.42	Feature 10	16
614	CdH	WF	9	2	150cm	19.5cm	120.5	fill	20
615	CdH	WF	7	x	s 1m	3.60m	2m	hallazgo 11	19
616	CdH	WF	7	4	60cm s	160 w	118.47	x	20

Appendix F

Table 1: Macrobotanical Samples Exported continued

Sample	Area	Sector	Unit	Level	North	East	Elevation	Context	Liters
617	CdH	WF	7	x	160 s del	260	118.45	feature 9	14
618	CdH	WF	7A	11	x	x	x	x	15
619	CdH	WF	7	x	75 s del n	3.40m	117.27	fill	20
620	CdH	WF	9B	12	x30	y120	5.58	x	20
621	CdH	WF	9B	x	x63	y77	6.1	x	16
622	CdH	WF	9B	x	x99	y30	5.30m	x	17
623	CdH	WF	8	x	90 s del n	100	123.55	relleno	18
624	CdH	WF	8	x	76 s del n	84	123.14	indeterminado	20
625	CdH	AE	J11	5	x116	y79	1.18m	x	16
626	CdH	AE	J12	6	x184	y103	1.78m	x	17
627	CdH	AE	J11	x	x54	y156	111.39	hallazgo 3- fogon	14
628	CdH	AE	J12	x	105	57	111.18	x	20
629	CdH	AE	J15	3	x78	y10	80cm	x	17
630	CdH	AE	J12	x	x	x	x	x	x
631	CdH	AE	J12	1	85	62	111.2	feature 1	16
632	CdH	AE	J12	x	x82	y156	1.82m	relleno	14
633	CdH	AE	J11	2	x142	y155	111.96	x	14
634	CdH	AE	J12	6	120	40	110.77	sobre piso chavir	19
635	CdH	AE	J11	6	x74	y70	111.12	apisonado	15
636	CdH	AE	I11	x	x162	y45	1.9	hallazgo #2-entie	15
637	CdH	AE	I11	x	x170	y14	11.8	hallazgo #2- fogo	16
638	CdH	AE	H12	4	x48	y147	1.05	x	18
639	CdH	AE	K11	4	x	x137	y120	110.69	15
640	CdH	AE	K13	5	43	125	100.86	x	15
641	CdH	AE	L12	2B	30	41	111.43	relleno	18
642	CdH	AE	K12	4	x	x	x	hall. #2- south pr	20
643	CdH	AE	K13	3	61	90	111.57	x	20
644	CdH	AE	J13	6	x53	y150	111.42	x	16
645	CdH	AE	J13	3	x119	y57	112.97	x	16
646	CdH	AE	J13	4	x104	y168	111.75	x	14
647	CdH	AE	J11	4B	x75	y192	111.31	relleno	18
648	CdH	AE	H12	4	x130	y175	120	ceniza	15
649	CdH	AE	J11	2	x40	y150	110.69	hallazgo1 - cista	15
650	CdH	AE	K11	2	x40	y100	0.7	relleno	20
651	CdH	AE	L12	3	30	56	111.26	relleno	18
652	CdH	AE	L13	3B				hallazgo 2	18
653	CdH	AE	N11	1	160	120	111.27	fill	18
654	CdH	AE	N11	4	64	127	110.78	x	14

Appendix F

Table 1: Macrobotanical Samples Exported continued

Sample	Area	Sector	Unit	Level	North	East	Elevation	Context	Liters
655	CdH	AE	N11	3	90	70	110.92	relleno	15
656	CdH	AE	J15	2	x83	y70	50cm	x	15
657	CdH	AE	J13	7	x116	y165	1.98	x	15
658	CdH	AE	J11	3	x104	y32	111.66	relleno	16
659	CdH	AE	J11	7	x191	y134	110.78	piso	19
660	CdH	AE	N11	6	50	175	110.32	x	14
661	CdH	AE	J12	5	15	130	110.78	x	16
662	CdH	AE	J11	2	x100	y140	110.6	hallazgo 1-	16
663	CdH	AE	J11	8	x130	y80	110.79	x	20
664	CdH	AE	N11	5	70	110	110.49	relleno	16
665	CdH	AE	N10	3	x	x	x	x	16
666	CdH	AE	N10	1	x	x	x	x	14
667	CdH	AE	M11	4B					17
668	CdH	AE	M11	x	x20	y20	110.41	sobre piso	15
669	CdH	AE	L12	4	x	x	x	x	17
670	CdH	AE	M12	4	x	x	x	x	12
671	CdH	AE	M11	5A	x	x	x	x	14
672	CdH	AE	L13	3	x40	y70	1.33m	piedras cor	20
673	CdH	AE	M11	3A	x	x	x	x	19
674	CdH	AE	L11	4	x40	y70	1.33m	sector sur	16
675	CdH	AE	M11	4A	x	x	x	x	18
676	CdH	AE	M12	2	50	40	111.2	x	18
677	CdH	AE	N10	4	x	x	x	x	16
678	CdH	AE	O11	5-sur b	10	15W?	118.1	x	17
679	CdH	AE	M11	3B	x	x	x	x	20
680	CdH	AE	O11	3-nort	x	x	x	x	20
681	CdH	WF	07A	8	130	120w	118.3	fill above g	17
682	CdH	WF	09A	7	66 w of	54 sur (	118.53	relleno	19
683	CdH	WF	09B	13	x35	y115	5.99m	x	16
684	CdH	WF	9	2	40 w of	76 s de	120.17	relleno	16
685	CdH	WF	09B	8	x	x	x	x	19
686	CdH	WF	9	5A	47 w of	20 s de	119.3	relleno	20
687	CdH	WF	07A	Hallazgo 17- capas 1 y 2					6
688	CdH	WF	09A	6	13 w of	54 s de	119.13	relleno	20
689	CdH	WF	09B	Hallazg	26	89	119.39	wall fall	20
690	CdH	WF	09B	10	x	x	5.05	x	20
691	CdH	WF	09A	Hallazg	x23	y60	119.2	relleno	17
692	CdH	WF	9	4	x33	y30	120m	relleno	18

Appendix F

Table 1: Macrobotanical Samples Exported continued

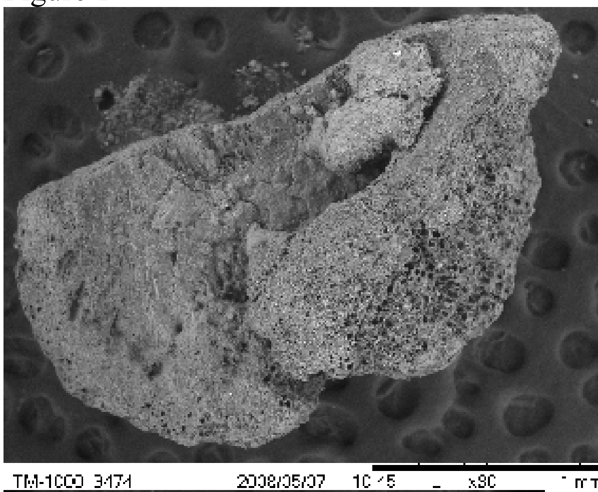
Sample	Area	Sector	Unit	Level	North	East	Elevation	Context	Liters
693	CdH	WF	09B	4	x20	40 s de n	119.27	relleno	15
694	CdH	WF	09B	9	x13	y10	3.12	x	18
695	CdH	RO	M10	3	x	40 s de n	x	piso	15
696	CdH	AS	1	8	x95	y70	103.42	x	15
697	CdH	WF	09B	6	x48	y34	118.79	unknown	16
698	CdH	AS	1	5	x1	y1.5	105.79	relleno	15
699	CdH	AS	1	4?	x2	y0.5	106.6	relleno	16
700	CdH	PM	50	5	50	130	2.18	cajon 1/2	19
701	CdH	PM	50	alineamie	70	30	210	mortero de muro	16
702	CdH	PM	50	relleno d	30	45	99.1	x	17
703	CdH	PM	50	x	x	x	110.85	x	20
704	CdH	AS	2	5	x1	y1	98.15	relleno	15
705	CdH	PM	50	4	130	50	1.87	cajon 1	18
706	CdH	PM	50	2	130	50	1.58	relleno	18
707	CdH	WF	7	x	x130	80 s de n	118.5	feature 5	4
708	CdH	WF	7	x	x70	y180s de	119.55	feature 7- floor bea	4
709	CdH	WQ	7-S4-U4	C11	x	x	x	x	7
710	CdH	WQ	C18	VHR?	x	x	x	x	6
711	CdH	WQ	C18	x	x	x	x	x	4
712	CdH	WQ	7-S4-U4	C12	VHR?	x	x	x	4
713	CdH	WQ	C17	x	x	x	x	x	5
714	CdH	WQ	7-S4-U4	C7	x	x	x	x	6
715	CdH	WQ	20	x	x	x	x	x	3
716	CdH	WF	7	x	x	x	117	hallazgo 13-sobre pl	7
717	CdH	AE	I11	7	x170	y170	178cm	hallazgo 2-entierro	7

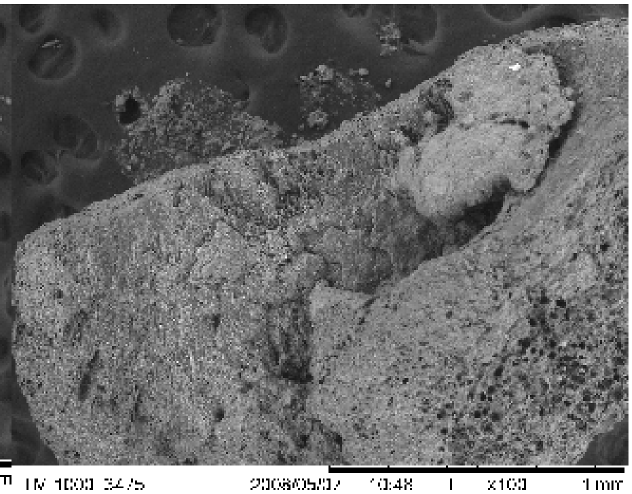
Appendix G
Sorting Sheet

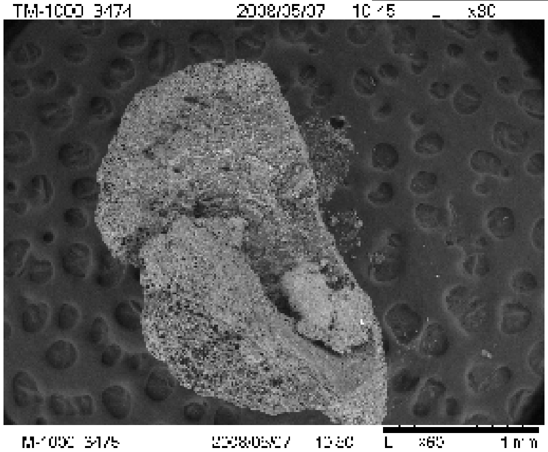
Chavin de Huantar	UNIT	SAMPLE	AREA		FLOT NUMBER	YEAR EXCAVATED	Condition
Cultural Context:	Code:		Description:				Quality
Spot checl Y/N			Fraction Type	Ligh Heav Screen	Bulk Scatter	Pick	Fragmentation
Items pulled		Entered into database					Firing Condition
	LITERS					SORTER NAME AND DATE	

	> 2 mm	Weight:		**> 1 mm**	Weight:		**>0.5mn**	Weight:		**<0.5 mm**	Weight:
	% sorted:	Seed blow		% sorted:	Seed blown		% sorted:	Seed blown		% sorted:	Seed b
MATERIAL	**WEIGHT**	**COUNT**	**% SORT**	**WEIGHT**	**COUNT**	**% SORTE**	**WEIGHT**	**COUNT**	**% SORT**	**WEIGHT**	**COUNT**
WOOD											
Lump											
Fabaceae											
Solanaceae											
Malvaceae											
Chenopodiaceae											
Poaceae											
Zea mays kernel											
Zea mays cupule											
Chenopodium quinoa											
unknown											
unidentifiable											
Poppy Seeds											
Dung											
BONES											
	Comments			Comments			Comments			Comments	
LF Location of Sample HF Location of sample											

Appendix H
Scanning Electron Microscope Images
Figure 1

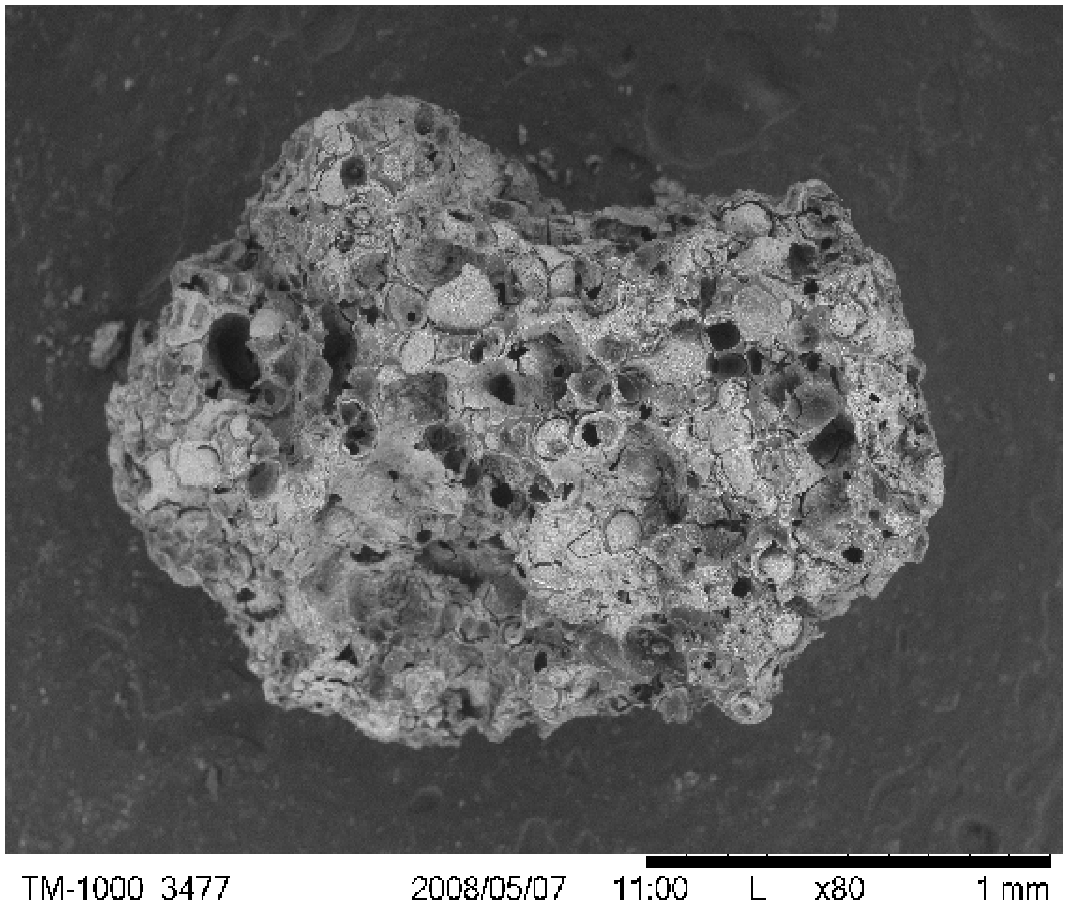






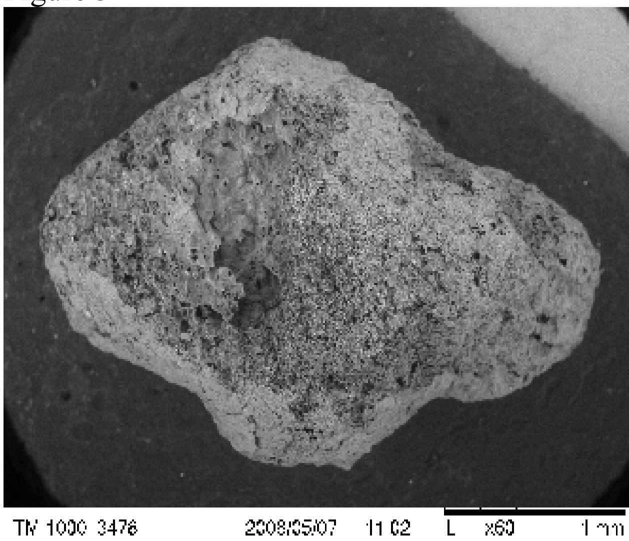
Three SEM images of Zea mays cupule from sample #590, CdH-LB-SM-G14 III, quad east.

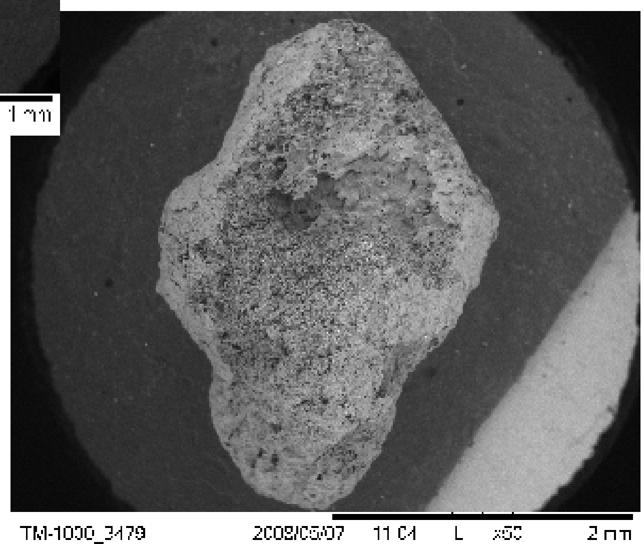
Appendix H
Scanning Electron Microscope Images
Figure 2



SEM Image of parenchyma from sample #619, CdH-LB-WF-7.

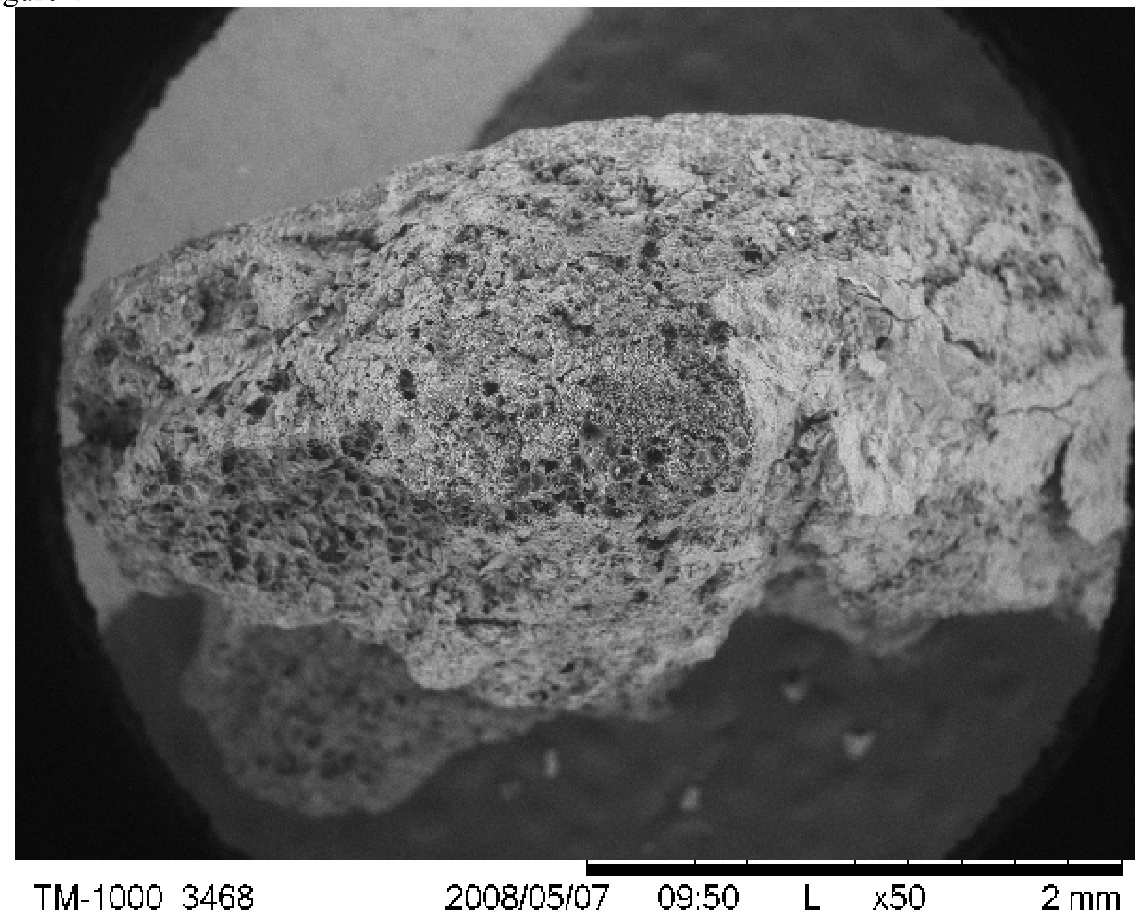
Appendix H
Scanning Electron Microscope Images
Figure 3





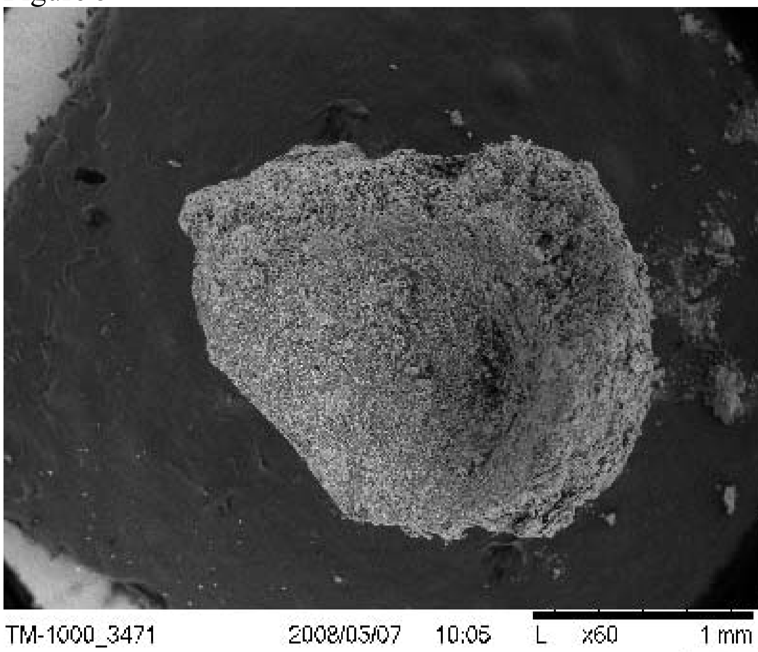
Two SEM images of Zea mays cupule from sample #619, CdH-LB-WF-7.

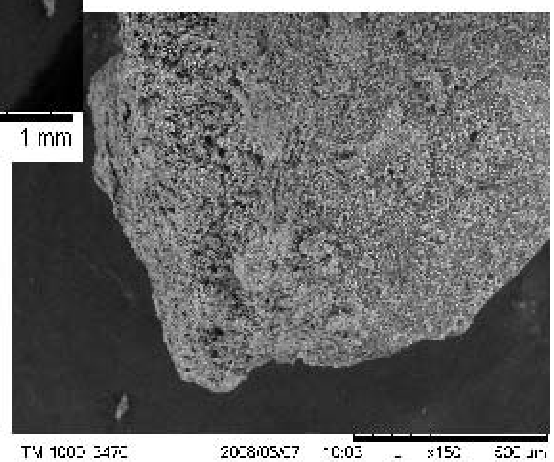
Appendix H
Scanning Electron Microscope Images
Figure 4



SEM Image of Cucurbitaceae, sample #711, CdH-LB-WQ-C18

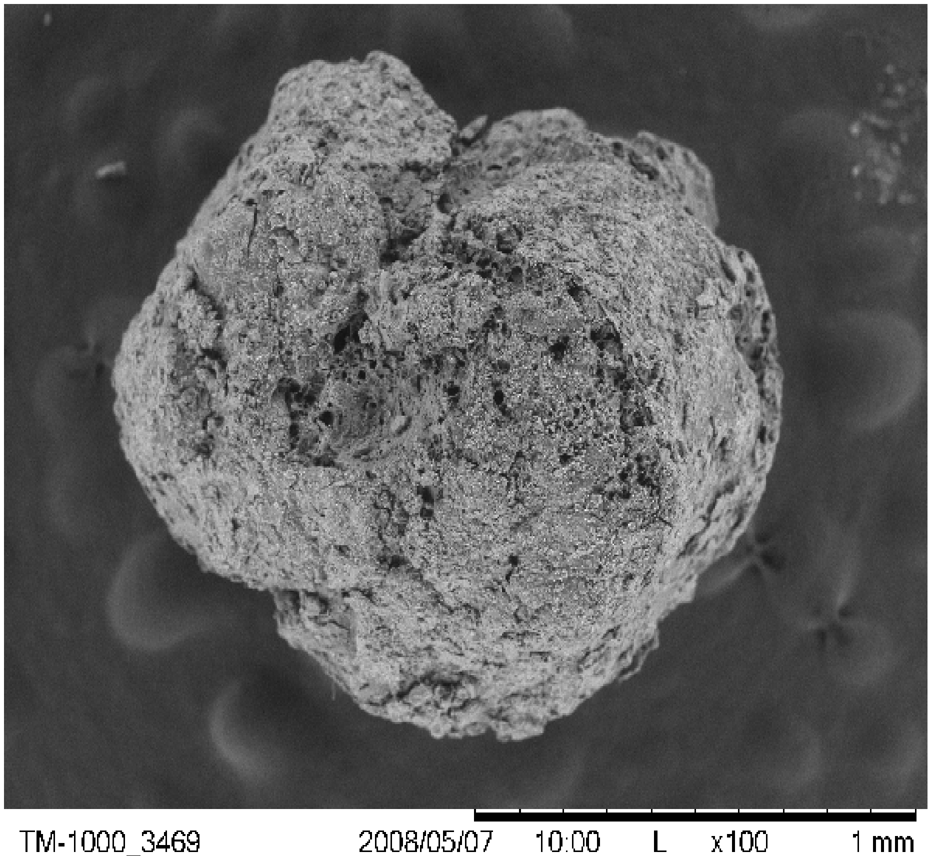
Appendix H
Scanning Electron Microscope Images
Figure 5





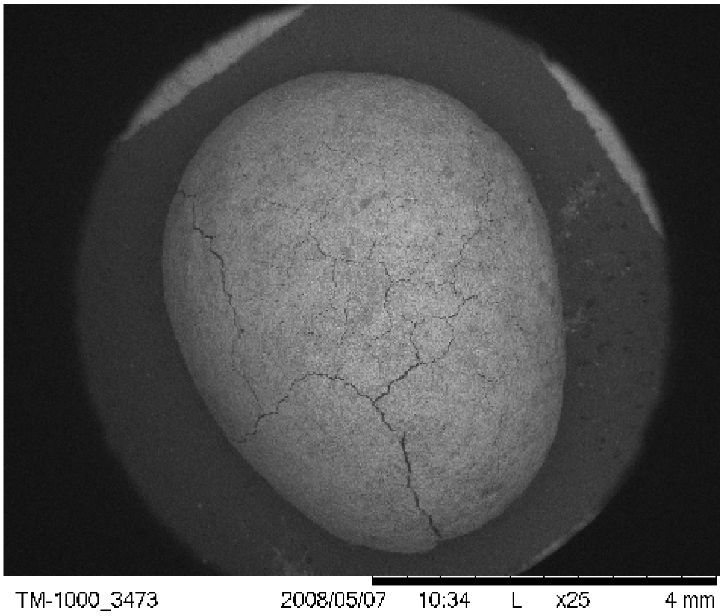
SEM images of *Zea mays* cupule, sample #711,
CdH-WQ-C18

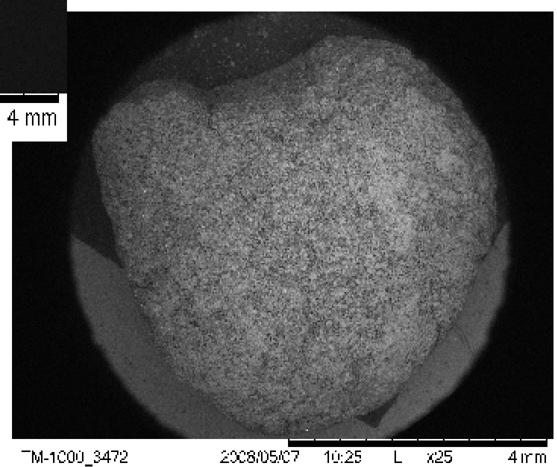
Appendix H
Scanning Electron Microscope Images
Figure 6



SEM Image of Chenopodium quinoa, sample #711, CdH-WQ-C18.

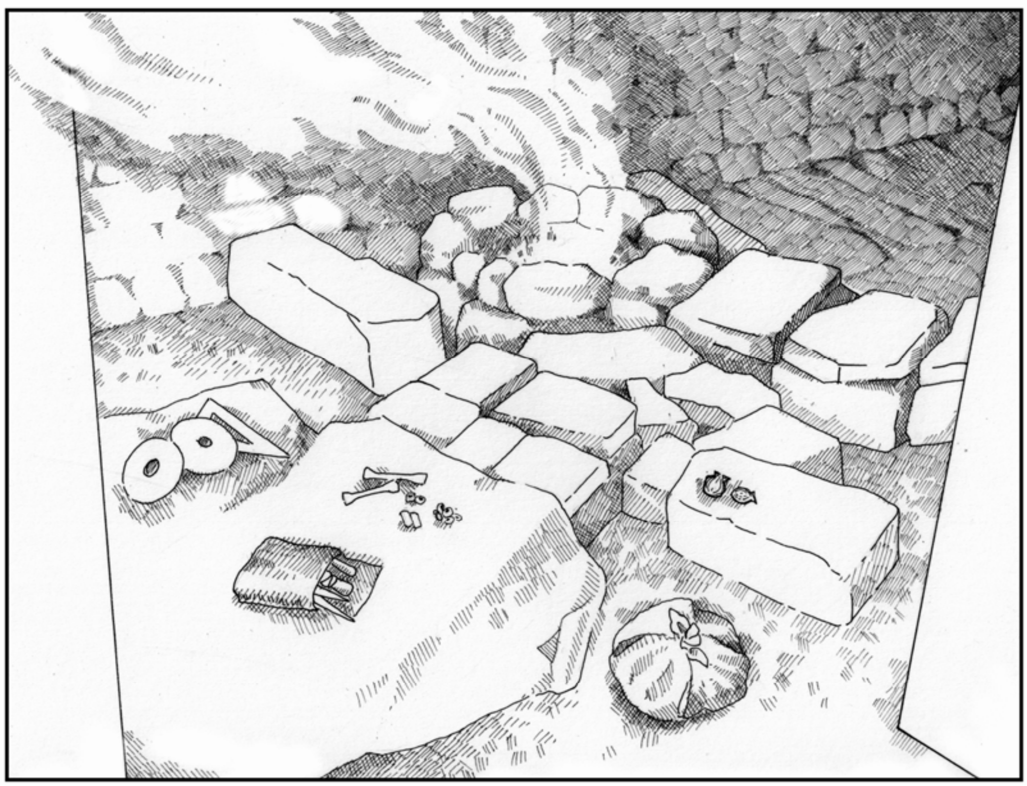
Appendix H
Scanning Electron Microscope Images
Figure 7





SEM images of Fabaceae, sample #711, CdH-WQ-C18.

Appendix I
Drawing of ASD 7 by Kathryn Killackey



Appendix J

Personal Communication from John Rick regarding lithics

As for the 7.6 broken biface, some clarifications. It was broken into 4 pieces (really into a minimum of 6) by 5 breaks. This piece is probably the most tecnically complex piece of fractured/polished stone toolmaking I have seen in the Andes, but it is not unique; I am fairly convinced that Tello (1960: 311) illustrates a fragment of a very similar piece; although artistic conventions are far from perfect (as are photos, of course). It is likely to be the highest form of the big biface tradition that exists in Chavin, albeit in great rarity (which is more than any other period -- I have only seen these in Chavin). They are big, elongate, very skillfully made, generally are stemmed, and the stem has prominent lateral denticulation, very distinctive. It is likely that this is the same form as one of the large spear tips shown on the cornice fragment we recovered.

The piece is likely of a white chert or uniform fine grain. The piece shows signs of having been brought to a preform condition by flaking, likely percussion flaking, although very little remains of that original flaked surface. The item was then extensively smoothed through laborious polishing, creating a most unusual smoothed final preform, which presumably had the nearly complete final shape -- highly symmetrical, and with a perfectly uniform, slightly thick, lenticular cross-section. The final apparent action was to recreate sharp lateral edges through fine, evenly-spaced, controlled flaking of only the immediate area of the edge -- the retouch does not extend across the biface's surfaces. It creates an edge identical to that I have observed on Danish neolithic daggers, and in fact does seem to replicate the general high tech process engaged in by the neolithic craftspeople. I have only observed this fractured-ground & polished-refractured technological sequence in the Scandinavian Neolithic and in pre- and early Dynastic Egypt, although it may occur more widely than I know. I have not observed it in other contexts in the New World. Given the technical demands, time investment, and production complexity of this type of technology, and the apparent high level of competence with which it was carried out, I suspect this was produced by a full-time lithic specialist, perhaps one gifted in this elaborate production. This flies in the face of the dearth of other examples; it remains puzzling how such a highly evolved technology could have existed without producing enough of a corpus of material that it would be more widely recognized. We have two apparent examples of this, and perhaps about 8 examples of an apparently flaked-only fine refined large biface form in the materials I have seen or seen illustrated in the Andes; all are Formative in age.

Your 7.7 piece is not familiar to me, although again it may be my memory failing. Stone-wise, it is vary visually confusing -- were it not for the apparent recently fractured notch (or could that be a lichen?), I would have almost guessed granite, but if it is uniform grey color internally, it would more likely be again some form of fine grain, fairly soft sedimentary rock -- limestone, siltstone, fine grain sandstone. It is not a likely form for granite. What I find most puzzling and perhaps edifying is the apparent perforation (?) that you refer to as a recession. If that is a bored or drilled hole through the material, and seems to be contemporary with the shaping of the piece as a whole, then I think you have a drain, somewhat similar to the drain pieces used in the Plaza Mayor and in the Circular Plaza; yes, it does have a troughing suggestive of the linear abrading features found on rock and artifacts, but the hole is really telling, and this could be a sharpening/shaping stone of very fine specification. But I think it as likely it was an elaborate drain stone used to allow water to drop into a canal below it; with the rather small orifice an effective filter to avoid blockage of the canal through introduction of large material. Just an idea. I have never heard of a shaped sharpening stone for the Formative, but you never know. Looks similar to (Tello 1960: Lamina XXI).

Appendix K: Macrobotanical Data

Wood count	Parenchyma	Fabaceae	Solanaceae	Poaceae	Zea mays kernel	Zea mays cupule	Chenopodium quinoa	unknown	unidentifiable	Malvaceae	Chenopodiaceae	Asteraceae	Cactaceae
12405	**88**	**41**	**2**	**15.00**	**17**	**48**	**246**	**24**	**87**	**0**	**0**	**0**	**10**
0													
84				2			6	1	3				
2849		1											
0													
88													
2491													
1417						1			6				
312					4	1	5	1	1				
114	4	1				1	2	4					
230	5						6		2				
215	4		1		4	3	2						
21	1												
379				1		9	1	4	2				
68	1		1	1			3		1				1
39						1	4						
242	9				1	2	7						
171							1	1					
0													
96	5			1		1	1	1	3				
207	8			1		1	14						2
112	5			1		3	7	1					
108	1	1				2	16						
661	5	1			1		5						
327	8	17				9	133		16				
143					3				1				
238	1	12		1	3	2	2	1	22				4
226	5			1		1	6	1	1				
871													
5													
7													
33									1				
0													
0													
75	21	2				2	3	2	2				
72	2					4	2	1					

Appendix K, page 2
Macrobotanical Data

Area	Sector	Wood count	Parenchyma	Fabaceae	Solanaceae	Poaceae	Zea mays kernel	Zea mays cupule	Chenopodium	unknown	unidentifiable	Malvaceae	Chenopodiaceae	Asteraceae
CdH	AE	8							1					
CdH	AE	72	1						2	1				
CdH	AE	87						1	1		6			
CdH	AE	22												
CdH	AE	36		1							1			
CdH	AE	0												
CdH	AE	7						1			2			
CdH	AE	12							1					
CdH	AE	17				1		1	7	1	6			
CdH	AE	5		5					1		3			
CdH	AE	83						1			2			
CdH	AE	44				5			6	2	5			
CdH	AE	0												
CdH	AE	63	1											
CdH	AE	0												
CdH	AE	20	1					1	1	1				
CdH	AE	0												
CdH	AE	2					1			1	1			
CdH	AE	7												
CdH	AE	0												
CdH	AE	19												
CdH	AE	0												
sum		12405	88	41	2	15	17	48	246	24	87	0		0

Appendix K, page 3
Macrobotanical Data

		Cactaceae	Portulacaceae	Brassicaceae	Lamiacaea	Cyperaceae	cf. Capsicum	sprouted maize	Verbena	stalk	Gallium	seedcase/nutshell	cf. Triticum
sum valu		**10**	**0**	**0**	**0**	**0**	**1**	**3**	**7**	**1**	**2**	**1**	**0**
CdH	AE												
CdH	AE												
CdH	AE												
CdH	AE												
CdH	AE												
CdH	AE												
CdH	AE												
CdH	AE												
CdH	AE						1						
CdH	AE												
CdH	AE												
CdH	AE												
CdH	AE							3	4	1			
CdH	AE	1											
CdH	AE												
CdH	AE												
CdH	AE												
CdH	AE												
CdH	AE												
CdH	AE	2											
CdH	AE												
CdH	AE										1		
CdH	AE								2			1	
CdH	AE					1							
CdH	AE												
CdH	AE	4											
CdH	AE												
CdH	AE												
CdH	AE												
CdH	AE												
CdH	AE												
CdH	AE												
CdH	AE												
CdH	AE												

Appendix K, page 4
Macrobotanical Data

		Cactaceae	Portulacaceae	Brassicaceae	Lamiacaea	Cyperaceae	cf. Capsicum	sprouted maize	Verbena	stalk	Gallium	seedcase/nutshell
sum values		**10**	**0**	**0**	**0**	**0**	**1**	**3**	**7**	**1**	**2**	**1**

1 1

1

1

1

10 0 0 0 0 1 3 7 1 2 1 0

Appendix K, page 5
Macrobotanical Data

Area	Sector	Wood count	Parenchyma	Fabaceae	Solanaceae	Poaceae	Zea mays kernel	Zea mays cupule	Chenopodium quinoa	unknown	unidentifiable	Malvaceae	Chenopodiaceae
CdH	AS	0											
CdH	AS	0											
CdH	AS	0											
CdH	AS	10	1	1		1					3		
sum		10	1	1	0	1	0	0	0	0	3	0	
CdH	PM	5											
CdH	PM	1											
CdH	PM	0											
CdH	PM	402	3					1			1		
CdH	PM	1									2		
CdH	PM	0	3	0	0	0	0	1	0	0	3	0	
sum values		409											
CdH	RO	x							4				
CdH	WQ	672		1							2		
CdH	WQ	0											
CdH	WQ	745	17	17		2		4	1	2		1	
CdH	WQ	25							1	1			
CdH	WQ	18									1		
CdH	WQ	14											
CdH	WQ	1											
sum values		1475	17	18	0	2	0	4	2	3	3	1	

Appendix K, page 6
Macrobotanical Data

Area	Sector	Asteraceae	Cactaceae	Portulacaceae	Brassicaceae	Lamiacaea	Cyperaceae	cf. Capsicum	sprouted maize	Verbena	stalk
CdH	AS										
CdH	AS										
CdH	AS										
CdH	AS										
sum		0	0	0	0	0	0	0	0	0	0
CdH	PM										
CdH	PM										
CdH	PM										
CdH	PM										
CdH	PM									2	
CdH	PM	0	0	0	0	0	0	0	0	2	0
sum values											
CdH	RO										
sum		0	0	0	0	0	0	0	0	0	0
CdH	WQ										
CdH	WQ										
CdH	WQ									3	
CdH	WQ										
CdH	WQ										
CdH	WQ										
CdH	WQ										
sum values		0	0	0	0	0	0	0	0	3	0
other											
other		1									

Appendix K, page 7
Macrobotanical Remains

Area	Sector	Gallium	seedcase/ nutshell	cf. Triticum	Amarant haceae	Passiflora	Mantagan aceae	cf. Cucurbita ceae
CdH	AS							
CdH	AS							
CdH	AS							
CdH	AS							
sum		0	0	0	0	0	0	0
CdH	PM							
CdH	PM							
CdH	PM							
CdH	PM							
CdH	PM							
CdH	PM	0	0	0	0	0	0	0
sum values								
CdH	RO							
sum		0	0	0	0	0	0	0
CdH	WQ							
CdH	WQ							
CdH	WQ						3	2
CdH	WQ							
CdH	WQ							
CdH	WQ							
CdH	WQ							
sum values		0	0	0	0	0	3	2
other								
other								

Appendix K, page 7
Macrobotanical Remains

Area	Sector	Wood count	Parenchyma	Fabaceae	Solanaceae	Poaceae	Zea mays kernel	Zea mays cupule	podium quino	unknown	unidentifiable	Malvaceae	Chenopodiaceae
CdH-L	SM	1											
CdH-L	SM	8				1				1			
CdH-L	SM	0											
CdH-L	SM	0											
CdH-L	SM	63							1			1	
CdH-L	SM	32											
CdH-L	SM	24	3										
CdH-L	SM	27	5						1	1			
CdH-L	SM	13	1										
CdH-L	SM	24		1									
CdH-L	SM	2									1		
CdH-L	SM	14											
CdH-L	SM	9				1							
CdH-L	SM	9											
CdH-L	SM	2											
CdH-L	SM	12				7							
CdH-L	SM	45											
CdH-L	SM	9				1							
CdH-L	SM	33				1					3		
CdH-L	SM	7											
CdH-L	SM	2											
CdH-L	SM	1											
CdH-L	SM	2											
CdH-L	SM	1											
CdH-L	SM	9											
CdH-L	SM	1											
CdH-L	SM	8											
CdH-L	SM	1											
CdH-L	SM	0								1			
CdH-L	SM	4											
CdH-L	SM	17											
CdH-L	SM	14											
CdH-L	SM	110							1				
CdH-L	SM	9				1							
CdH-L	SM	0				1							
CdH-L	SM	115											

Appendix K, page 8
Macrobotanical Remains

Area	Secto	Asteraceae	Cactaceae	Portulacaceae	Brassicaceae	Lamiacaea	Cyperaceae	cf. Capsicum	sprouted maize	Verbena	stalk	Gallium	seedcase/nutshell	cf. Triticum
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													
CdH-LB	SM													

Appendix K, page 8
Macrobotanical Remains

Area	Sector	Wood count	Parenchyma	Fabaceae	Solanaceae	Poaceae	Zea mays kernel	Zea mays cupule	podium quinoa	unknown	unidentifiable	Malvaceae	Chenopodiaceae
CdH-L	SM	247											
CdH-L	SM	12									1	1	
CdH-L	SM	0											
CdH-L	SM	89											
CdH-L	SM	1											
CdH-L	SM	4											
CdH-L	SM	5											
CdH-L	SM	18											
CdH-L	SM	0											
CdH-L	SM	8											
CdH-L	SM	3	1										
CdH-L	SM	0											
CdH-L	SM	0											
CdH-L	SM	11											
CdH-L	SM	8											
CdH-L	SM	1	1										
CdH-L	SM	0									1		
CdH-L	SM	3											
CdH-L	SM	4											
CdH-L	SM	3											
CdH-L	SM	0											
CdH-L	SM	0											
CdH-L	SM	7									1		
CdH-L	SM	0											
CdH-L	SM	0										1	
CdH-L	SM	0											
CdH-L	SM	1										1	
CdH-L	SM	0											
CdH-L	SM	8											
CdH-L	SM	0											
CdH-L	SM	0											
CdH-L	SM	12	1										
CdH-L	SM	0											
CdH-L	SM	0											
CdH-L	SM	105											

Appendix K, page 9
Macrobotanical Remains

Area	Sector	Asteraceae	Cactaceae	Portulacaceae	Brassicaceae	Lamiacaea	Cyperaceae	cf. Capsicum	sprouted maize	Verbena	stalk	Gallium	seedcase/nut shell	cf. Triticum
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													

Appendix K, page 10
Macrobotanical Remains

Area	Sector	Wood count	Parenchyma	Fabaceae	Solanaceae	Poaceae	Zea mays kernel	Zea mays cupule	Chenopodium	unknown	unidentifiable	Malvaceae	Chenopodiaceae
CdH-LE	SM	0											
CdH-LE	SM	12								1			
CdH-LE	SM	51								1			
CdH-LE	SM	8											
CdH-LE	SM	112											
CdH-LE	SM	2											
CdH-LE	SM	6											
CdH-LE	SM	56											
CdH-LE	SM	0											
CdH-LE	SM	34											
CdH-LE	SM	0											
CdH-LE	SM	8	1										
CdH-LE	SM	46											
CdH-LE	SM	0											
CdH-LE	SM	3				1							
CdH-LE	SM	2											
CdH-LE	SM	2											
CdH-LE	SM	2						1					
CdH-LE	SM	0											
CdH-LE	SM	22							1	1			
CdH-LE	SM	0											
CdH-LE	SM	10		1					1				
CdH-LE	SM	0											
CdH-LE	SM	6									2		
CdH-LE	SM	12	1										
CdH-LE	SM	15											
CdH-LE	SM	0											
CdH-LE	SM	68	1										
CdH-LE	SM	18	2										
CdH-LE	SM	0											
CdH-LE	SM	3											
CdH-LE	SM	0											
CdH-LE	SM	28											
CdH-LE	SM	0											
CdH-LE	SM	19	1										
		1723	18	2	0	14	0	1	5	6	9	4	

Appendix K, page 11, Macrobotanical Remains

Area	Sector	Asteraceae	Cactaceae	Portulacaceae	Brassicaceae	Lamiacaea	Cyperaceae	cf. Capsicum	sprouted maize	Verbena	stalk	Gallium	seedcase/nutshell	cf. Triticum
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM													
CdH-L	SM	1	1											
CdH-L	SM	1	1	0	0	0	0	0	0	0	0	0	0	0

Macrobotanical Remains

Area	Sector	Wood count	Parenchyma	Fabaceae	Solanaceae	Poaceae	Zea mays kernel	Zea mays cupule	Chenopodium quinoa	unknown	unidentifiable	Malvaceae	Chenopodiaceae
CdH	WF	0											
CdH	WF	4											
CdH	WF	0											
CdH	WF	112											
CdH	WF	0											
CdH	WF	0											
CdH	WF	6											
CdH	WF	31	1										
CdH	WF	0											
CdH	WF	119	1					1		1			
CdH	WF	0											
CdH	WF	17	1										
CdH	WF	9											
CdH	WF	0	1					1					
CdH	WF	0											
CdH	WF	0											
CdH	WF	23											
CdH	WF	0											
CdH	WF	11									1		
CdH	WF	31	1			3				2	1		
CdH	WF	3											
CdH	WF	21											
CdH	WF	12											
CdH	WF	0											
CdH	WF	79		1		2				1	2		
CdH	WF	2								2			
CdH	WF	1								2			
CdH	WF	0											
CdH	WF	38											
CdH	WF	2	1								1		
CdH	WF	4											
CdH	WF	0		1									
CdH	WF	0											
sum values		525	6	2	0	5	0	2	0	8	5	0	

Appendix K, page 13
Macrobotanical Remains

Area	Secto	Asteraceae	Cactaceae	Portulacaceae	Brassicaceae	Lamiaceae	Cyperaceae	cf. Capsicum	sprouted maize	Verbena	stalk	Gallium	seedcase/nutshell	cf. Triticum
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM			1										
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM							1						1
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM													
CdH-I	SM		1											
CdH-I	SM													
CdH-I	SM	0	1	1	0	0	0	1	0	0	0	0	0	1

Appendix L: Shell Remains, page 1

Area	Unit	Level	Quantity	Weight
CdH-LB-SM	G13	7	2	0.4
CdH-LB-SM	I15	5	x	2
CdH-LB-SM	H13	3	1	2.9
CdH-LB-SM	J15	4	2	47.5
CdH-LB-SM	G13	6	x	8.1
CdH-LB-SM	J13	5- piso	x	22.7
CdH-LB-SM	I15	5	x	4
CdH-LB-SM	H16	6	x	14.2
CdH-LB-SM	J13	3	2	12
CdH-LB-SM	H16	6	2	8.9
CdH-LB-SM	H13	4	13	2.3
CdH-LB-SM	H16	6	x	7.6
CdH-LB-SM	H16	6	x	12.4
CdH-LB-SM	G12	6	3	26.4
CdH-LB-SM	J16	4	2	0.7
CdH-LB-SM	G12	4	x	18.7
CdH-LB-SM	H16	6	1	64.1
CdH-LB-SM	H16	6	1	11.7
CdH-LB-SM	J16	8	2	1.1
CdH-LB-SM	G13	4	5	1.4
CdH-LB-SM	J14	6	1	1.1
CdH-LB-SM	L11/M11	6-Hallazgo	5	5.1
CdH-LB-SM	L15	5	12	4.2
CdH-LB-SM	K13	3	2	0.3
CdH-LB-SM	H12	7- cuad sw	x	0.7
CdH-LB-SM	J14	5	x	3.7
CdH-LB-SM	I13	3	x	3.6
CdH-LB-SM	H15	6	1	0.8
CdH-LB-SM	J16	7	10	19.9
CdH-LB-SM	H16	4	x	12.5
CdH-LB-SM	G12	3	1	3.6
CdH-LB-SM	J13	4	x	0.1
CdH-LB-SM	G12	4	2	0.3
CdH-LB-SM	G12	5	1	1.4
CdH-LB-SM	J13	6	x	2.4
CdH-LB-SM	H16	3	13	2
CdH-LB-SM	L14	3	1	4.4
CdH-LB-SM	H15	3	x	2.5
CdH-LB-SM	K14	2	3	1.5
CdH-LB-SM	G13	7- cuad se	7	5

Appendix L: Shell Remains, page 2

Area	Unit	Level	Quantity	Weight
CdH-LB-SM	H13	3b	6	2
CdH-LB-SM	G14	3- cuad oes	x	7
CdH-LB-SM	G14	4	x	3.4
CdH-LB-SM	I15	6	x	0.8
CdH-LB-SM	H15	5	4	1.2
CdH-LB-SM	L15	6	8	7.6
CdH-LB-SM	J14	4	x	2.9
CdH-LB-SM	J14	3	x	3.5
CdH-LB-SM	J16	6	x	1.2
CdH-LB-SM	J15	3	1	13.5
CdH-LB-SM	J12	5- cuad e	2	0.8
CdH-LB-SM	N13	4	4	1.5
CdH-LB-SM	L14	3	1	3.6
CdH-LB-SM	K13	3	1	0.6
CdH-LB-SM	H16	4	x	0.5
CdH-LB-SM	H16	4	1	0.3
CdH-LB-SM	G14	5	x	0.2
CdH-LB-SM	K14/K15	1- hall 1 ca	1	0.2
CdH-LB-SM	L15	3	x	30.5
CdH-LB-SM	J16	6	3	6.5
CdH-LB-SM	K15	3	1	0.9
CdH-LB-SM	K14	4	5	1.8
CdH-LB-SM	J12	6	1	3.2
CdH-LB-SM	K13	4	3	0.9
CdH-LB-SM	N13	3	1	1.4
CdH-LB-SM	H12	6	1	1.3
CdH-LB-SM	J12	4	x	3.5
CdH-LB-SM	K15	3	15	9.9
CdH-LB-SM	H12	3	x	1.2
CdH-LB-SM	K15	4	x	5.9
CdH-LB-SM	I15	7	x	25.8
CdH-LB-SM	G14	4- interficie	x	3
CdH-LB-SM	G14	2	2	6
CdH-LB-SM	H16	6	3	1.2
CdH-LB-SM	H16	6	x	2.4
CdH-LB-SM	L14	3	1	0.5
CdH-LB-SM	J15	8	1	0.1
CdH-LB-SM	J12	4b	2	1.8
CdH-LB-SM	H13	3c	x	4
CdH-LB-SM	I15	7	x	0.9
CdH-LB-SM	L15	4	15	5.5

Appendix M
Artifacts, page 1

Area	Unit	Level	Artifact #	Count	Weight (g)
Bone artifacts					
CdH-LB-SM	J12	3	2	1	56.5
CdH-LB-SM	G12	4	1	1	1.5
CdH-LB-SM	K13	2	x	2	10
CdH-LB-SM	K15	2	1	1	0.9
CdH-LB-SM	H12	3	3	1	2.2
CdH-LB-SM	J14	5	x	1	68.3
CdH-LB-SM	J12	8	1	1	1.6
CdH-LB-SM	K13	feature 1	x	4	122.2
CdH-LB-SM	I13?	2	1	1	32.2
CdH-LB-SM	L11/M11	5	hall 1	1	26
CdH-LB-SM	K15	3	4	1	3
CdH-LB-SM	J16	7	2	1	1,8
CdH-LB-SM	J16	7	1	1	0.4
CdH-LB-SM	K13	4	x	7	24.6
CdH-LB-SM	K15	4	1	1	4.6
CdH-LB-SM	K15	6	1	1	6.9
CdH-LB-SM	H12	6	1	1	2.1
CdH-LB-SM	H16	3	2	1	3.7
CdH-LB-SM	K13	3	1	1	1.1
CdH-LB-SM	N12	2	x	frag. Varios	6
CdH-LB-SM	M11	3	1	1	2.1
CdH-LB-SM	L11	3	x	6	0.4
CdH-LB-SM	J12	3	x	13	16.4
CdH-LB-SM	H12	3	4	1	1.4
CdH-LB-SM	J14	4	x	2	14.7
CdH-LB-SM	G14	5-relleno	x	1	0.6
CdH-LB-SM	J16	5	x	1	3.4
CdH-LB-SM	N13	5	x	1	0.4
CdH-LB-SM	K15	3	x	4	0.8
CdH-LB-SM	J15	4	x	1	33.8
CdH-LB-SM	K13	2- hall 1	hallazgo 1	16	84
CdH-LB-SM	H12	3	2	1	1.2
CdH-LB-SM	J12	3b- cuad e	x	1	0.1
CdH-LB-SM	K13	4	4	1	2

Appendix M
Artifacts, page 2

Area	Unit	Level	Artifact #	Count	Weight (g)
CdH-LB-SM	N13	4	x	1	1.6
CdH-LB-SM	K13	3	hallazgo 1	1	6.1
CdH-LB-SM	K13	3	8	1	0.6
CdH-LB-SM	L13	4	3	2	2.8
CdH-LB-SM	K14	3	6	1	0.6
CdH-LB-SM	K13	3	hall 1	5	116
CdH-LB-SM	K14	3	8	1	1.8
CdH-LB-SM	J13	4	1	4	2.6
CdH-LB-SM	J14	3	1	1	0.7
CdH-LB-SM	J14	4	x	12	12.1
CdH-LB-SM	J14	4	x	1	0.4
CdH-LB-SM	I15	7	x	1	1
CdH-LB-SM	K13	2	hall 1	1	52
CdH-LB-SM	I13	2	2	1	23.2
CdH-LB-SM	J11	3	1- litico?	1	0.7
CdH-LB-SM	H15?	3	x	1	3.5
CdH-LB-SM	J14	2	1	1	5.7
CdH-LB-SM	L13	3	3	1	4.4
CdH-LB-SM	J12	7	x	1	0.4
CdH-LB-SM	K13	4	2	1	54
CdH-LB-SM	K14	3	9	1	1.4
CdH-LB-SM	J15	3	x	5	3.9
CdH-LB-SM	J16	7	x	1	0.3
CdH-LB-SM	L15	3	3	1	0.5
CdH-LB-SM	N10	3	1	2	0.1
CdH-LB-SM	L15	5	1	1	4.7
CdH-LB-SM	J13	5	2	1- frag	56.9
CdH-LB-SM	G13	6	x	1- chaquira	0.2
CdH-LB-SM	L15	6	x	1	1.5
CdH-LB-SM	L15	6	x	1	1.3
CdH-LB-SM	J16	7	3	1	0.4
CdH-LB-SM	H16	6	x	1	0.9
CdH-LB-SM	N13	hall 2	x	1	1
CdH-LB-SM	I15	8	x	1	3.7
CdH-LB-SM	L14	3	x	1	1.1
CdH-LB-SM	G14	4	x	1	0.9
CdH-LB-SM	G14	4	x	1	0.6

Appendix M
Artifacts, page 3

Area	Unit	Level	Artifact #	Count	Weight (g)
CdH-LB-SM	H12	7	x	5	9.5
CdH-LB-SM	K15	4	2	1	3.2
CdH-LB-SM	J14	4	x	1	24.6
CdH-LB-SM	L14	3	x	1	5.9
CdH-LB-SM	I15	5	x	2	0.8
CdH-LB-SM	L15	3	x	9	33.2
CdH-LB-SM	H15	3	x	1	2.3
CdH-LB-SM	K15	2	3	1	10
CdH-LB-SM	J12	3b- cuad e	x	1	3.6
CdH-LB-SM	K15	3	5	2	2.2
CdH-LB-SM	H16	3	x	1	0
CdH-LB-SM	L14	3	2	1	2.2
CdH-LB-SM	J13	5	1	1	5.8
CdH-LB-SM	K13	3	feature 1	90	555
CdH-LB-SM	L15	6	x	1	28.6
CdH-LB-SM	N12	2	x	1	0.8
CdH-LB-SM	K13	2	x	1	10.9
CdH-LB-SM	L15	5	x	1	1.5
CdH-LB-SM	J15	3	x	5	1.7
CdH-LB-SM	L15	4	x1	1	2.8
CdH-LB-SM	J16	7	1	1	10.5
CdH-LB-SM	J14	3	2	1	0.7
CdH-LB-SM	I13	3	x	1	26.2
CdH-LB-SM	J15	4	x	6	20
CdH-LB-SM	K12	4	1	1	56
CdH-LB-SM	K12	4	x	2	10
CdH-LB-SM	J16	6	x	6	3.4
CdH-LB-SM	K14	4	feature 1	1	8
CdH-LB-SM	N13	3	x	1	12.1
CdH-LB-SM	J14	6	1	1	0.7
CdH-LB-SM	J16	4	4	1	0.7
CdH-LB-SM	N13	3	x	1	15
CdH-LB-SM	L13	4	1	1	16.8
Shell Artifacts					
CdH-LB-SM	J16	7	4	1	0.2
CdH-LB-SM	K13	2	x	1	3.5
CdH-LB-SM	H12	6	2	1	0.7

Appendix M
Artifacts, page 4

Area	Unit	Level	Artifact #	Count	Weight (g)
CdH-LB-SM	K15	3	3	1	1
CdH-LB-SM	K14	3	7	1	0.3
CdH-LB-SM	K13	3- hallazgo	1	1	40
Lithic Artifacts					
CdH-LB-SM	I15	6	x	1	370.3
CdH-LB-SM	L14	3	1	1	1.6
CdH-LB-SM	J13?	2	2	1	9.2
CdH-LB-SM	H12	3	1	1	64.2
CdH-LB-SM	I15	8	x	11	19.4
CdH-LB-SM	H16	4	3- concha	1	3.6

Appendix N: Faunal Analysis by Silvana Rosenfeld

The goals of the analysis were to understand the Chavinos foodway in this part of the site as well as to compare La Banda results with previous analyses conducted by Miller and Burger (1995) in other parts of Chavín de Huántar. In this sense, a camelid skeletal part analysis was necessary to evaluate body part selection and its relation to the "*ch'arki* effect" as argued by Miller and Burger (*op.cit*.).

The whole assemblage, stratigraphic levels 1 through 8, was analyzed in the laboratory. However, for the more detailed analysis levels 1 and 2 were not considered since it was argued later that these levels could contain mixed deposits. All deposits were screened during excavation, which helped to recover even small bone fragments. However, the very acidic soil may have destroyed the most fragile bones (such as those of fish).

The taxonomic and anatomical identification was mainly conducted using osteological atlases (Schmid 1972; Gilbert, Martin et al. 1981; Altamirano Enciso 1983; Pacheco T, Altamirano E et al. 1986; Gilbert 1990) and my own photo record of reference collections taken at the Berkeley Museum of Vertebrate Zoology.

Quantification measurements were used for the camelid remains. The MNE is the minimum number of skeletal part necessary to account for the specimens of each part (Lyman 1994:266). The MNE calculation included long bone shaft fragments (diaphyses). Many metapodial fragments were not identified to the metacarpal/metatarsal level; these were mainly distal fragments, diaphysis fragments and epiphyses. In this sense, it would be impossible to calculate MNE or other measurements for the metapodials. The solution was to assign half of the fused epiphyses to the metacarpals and the other half of the metatarsals. Part of the justification is that I see no reason why metacarpals would be treated different than metatarsals. This was the best way I found so not to have an underrepresentation of metacarpals and metatarsals. The minimum number of individuals (MNI) calculation took into account side and age.

The MAU (minimal animal units) is the MNE per skeletal part divided by the number of times that skeletal part occurs in a single skeleton. MAU values are then normed by dividing all values by the greatest observed MAU value in the assemblage and multiplying each resulting value by 100 (Binford 1981:50, Lyman 1994: 266, Lyman 2008:234). This measurement is useful to assess skeletal representation and evaluate human transport strategies.

In order to determine the camelid age profile, I followed both the bone fuse sequence (Wheeler 1999) and dentition eruption sequence (Wheeler 1982). I used the highest MNE for each age interval to avoid interdependence.

Spearman's rho coefficient was used to assess the correlation between the camelid skeletal element abundance (using % MAU) and the camelid structural bone density on one hand (VDsa, (Stahl 1999)), and camelid % MAU against the food utility index for llamas (FUI, (Mengoni Goñalons 1991)) on the other hand. These three measurements function mainly as rank- order values and so the Spearman correlation test is the correct test in this situation (Grayson 1984; Lyman 2008).

RESULTS

The whole faunal sample comprised 13,222 bone specimens out of which 3,136 were identified at the taxonomic and anatomic level. This number of identified specimens (NISP) represents 24% of the original sample. The bone fragmentation was high, a fact Miller and Burger (1995) also found in their sample. Miller and Burger's sample had 12,672 specimens and their NISP was 2,252, which represents an 18% identification rate (Miller and Burger 1995).

The vast majority of the identified bone remains is composed by indeterminate artiodactyls and camelids (Figure 1). Artiodactyla indeterminate (NISP 1552) includes those fragments difficult to assign to either the cervid family or the camelid family, specially given the small size (high fragmentation), mainly from the axial part of the animal (vertebrae, ribs). The determined artiodactyls are camelids (Lama spp, NISP 1444) and cervids (*Hipocamelus antisensis,* NISP 36). Rodents (Rodentia) include guinea pigs (*Cavia porcellus* NISP 3), viscacha (*Lagidium peruanum,* NISP 14) and a few small mice (NISP 7). Carnivore includes puma (*Felis onca*, NISP 1), dog or foxes (*Pseudalopex sp,* NISP 4), and skunk (*Conepatus* spp, NISP 1). Ave (NISP 44) includes mainly small and unidentified birds but also a few bones tentatively assigned to South American quail (Tinamidae). Very few fish vertebrae (NISP 14) were found and they most probably came from the nearby river.

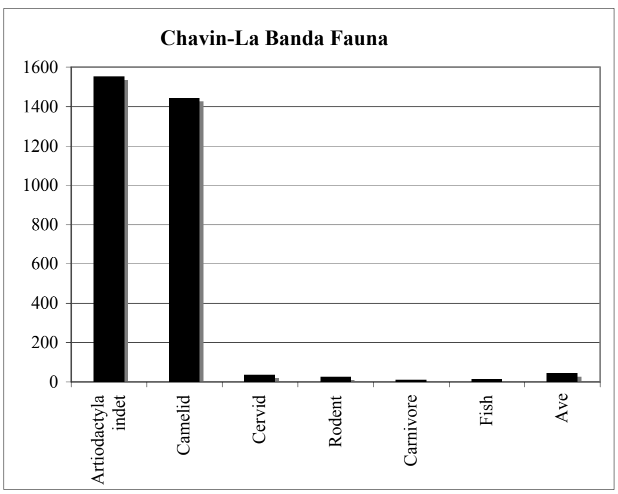


Figure 1. Taxonomic representation by number of identified specimens.

La Banda camelids

Calculations of MNE (Minimum number of elements), MNI (Minimum number of Individuals) and %MAU (Minimal Anatomic Units, standardized) are shown in Figures 2, 3, and 4.

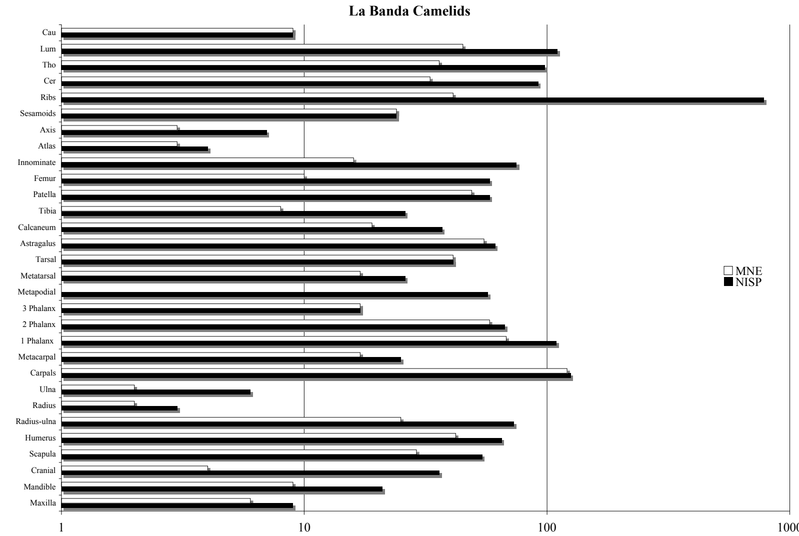


Figure 2. Camelid number of identified specimens and minimum number of elements (logarithmic scale)

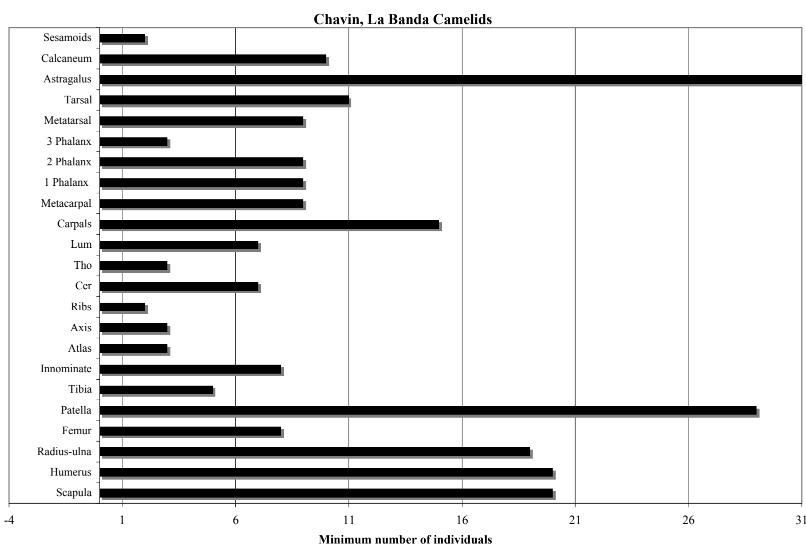


Figure 3. Camelid minimum number of individuals shown by skeletal element

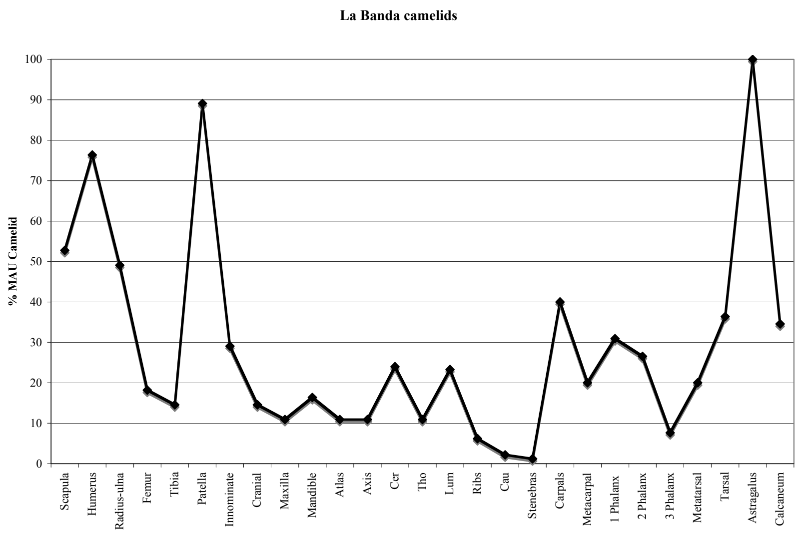


Figure 4: Camelid skeletal part representation (% MAU)

The minimum number of individuals by skeletal element is thirty-one and by astragalus (ankle bone) (Figure 3).

The age profile is based on the long-bone fusion sequence and it shows a dominance of adult elements indicating that most animals were killed around 3 years old of age. This is the age when camelids reach their meat potential and also when it is said their meat tastes the best (Bonavia 1996:497; Yacobaccio, Madero et al. 1998:95). It also makes sense that they kept part of the herd surviving the three years of age given that at that time it is when camelid burden training starts and also when they start shearing the animals kept for wool. The profile suggests a mixed strategy of exploiting both meat and wool and probably also keeping some animals for transport. It seems it'd be difficult to discern or to evaluate the relative importance of wool and transport. It is interesting that no elements in the 1-3 month category were recovered; this could be related to taphonomic issues given that the diagnostic bones for that age category are very fragile.

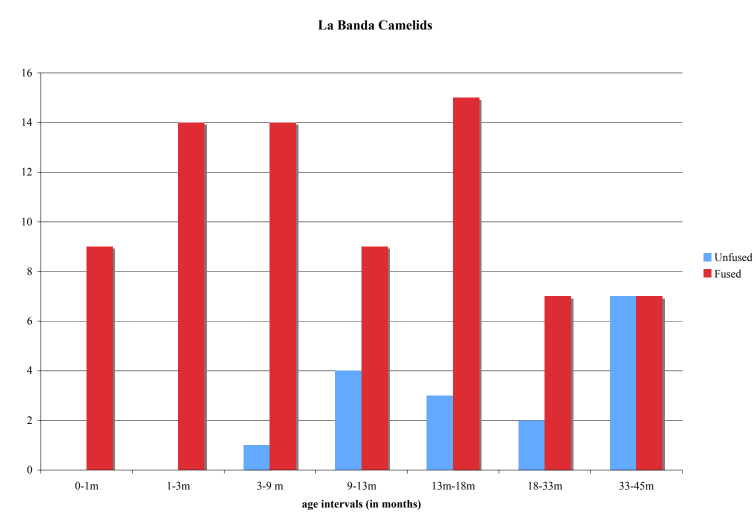


Figure 5: Camelid age profile showing age in months and the proportion of fused and unfused bones (in MNE, the highest per age interval).

The Spearman's rank correlation between mineral bone density (values taken from Stahl 1999) and the skeletal element representation standardized by one skeleton (% MAU) is r_s=-0.25, P=0.01. This is a negative weak correlation indicating that the bone density was a not a factor affecting the assemblage survivorship.

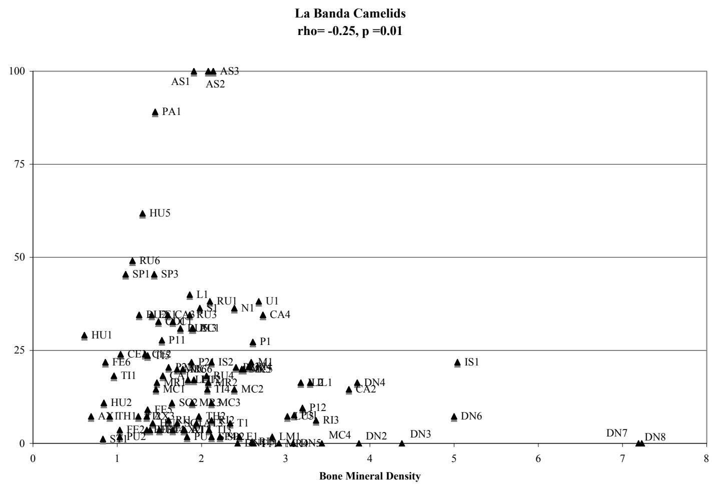


Figure 6: Scatterplot showing the correlation between bone mineral density scan sites and the skeletal element representation standardized by one skeleton (% MAU): r_s=-0.25, P=0.01. (scan site values taken from Stahl 1999)

There is no correlation (r_s=-0.28, P=0.25) between camelid % MAU and camelid food utility index (values taken from Mengoni 1999).

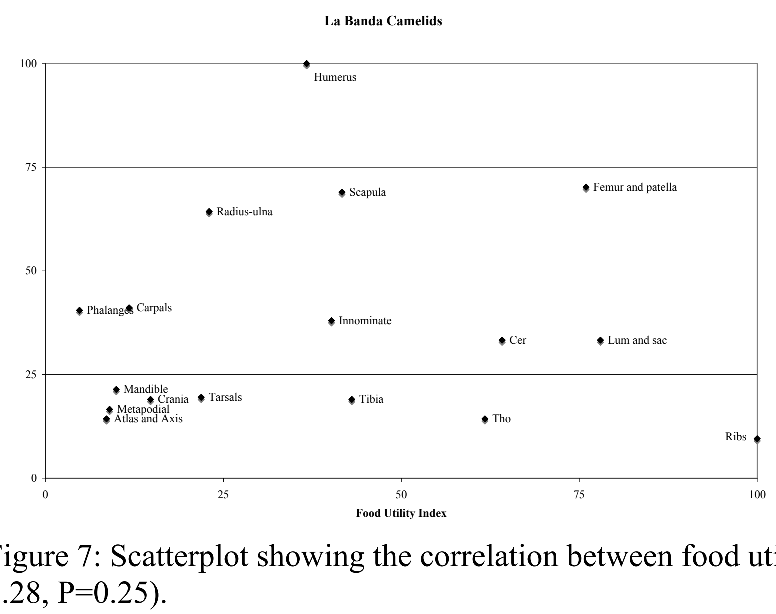


Figure 7: Scatterplot showing the correlation between food utility index and the %MAU (r_s= -0.28, P=0.25).

Table 1: FUI and %MAU be skeletal element

Skeletal element	FUI	% MAU
Crania	14.75	19
Mandible	9.95	21.4
Atlas and Axis	8.57	14.3
Cervical	64.15	33.3
Thoracic	61.75	14.3
Lumbar and sacrum	77.97	33.3
Innominate	40.18	38
Ribs	100	9.5
Scapula	41.66	69
Humerus	36.68	100
Radius-ulna	23	64.3
Carpals	11.76	41.1
Metapodial	9	16.6
Femur and patella	75.94	70.2
Tibia	43.04	19
Tarsals	21.88	19.5
Phalanges	4.78	40.5

The correlation between the bone frequency and the bone density values is negative and weak (see graph and rho value) suggesting that attritional factors did not heavily impacted on the La Banda bone assemblage. The high fragmentation of this bone assemblage in terms of NISP/NSP (as commented at the beginning), the presence of burn signs (add these freq in earlier section) and cut marks suggest the animal bones entered the assemblage as food residues.

Discussion

In their article on animal utilization at Chavin de Huantar, Miller and Burger (1995) present their zooarchaeological analysis of remains recovered during small-scale excavations in the seventies at different sectors outside the ceremonial area. The assemblage from the same chronological period (the so called Janabarriu phase) as the one study in this report was excavated from a unit in the modern town of Chavin de Huantar and two units excavated on the south west of the site (1995: Fig. 3). The Janabarriu NISP is 1,242 (Miller and Burger1995:Table 1). In terms of the ch'arki effect advocated by Miller and Burger (1995), for the same time period their skeletal element profile shows high survival rates for leg bones and relatively poorer representation of skull and foot elements (1995:441). This pattern is interpreted as evidence of llama ch'arki received from the Puna where the ch'arki was prepared and the cranial and podial elements remained.

The La Banda data analysis suggests that all skeleton elements are sufficiently enough represented to imply that whole animals were transported to the site. Nonetheless, the front upper limbs (scapula, humerus, and radius-ulna) are better represented than the rear upper limbs (femur and tibia, but the patella is well represented) and the lower extremities (metacarpal, metatarsal, phalanges, carpals and tarsals) see Figure 4. The lower extremities are probably less represented due to the problem with the metapodial fragments explained above. Also, the fact that astragali and calcanei (both ankle bones) are so well represented (100 % and 35 %, respectively) indicates that most probably the camelid lower extremities did arrive to the site. Additionally, and not less important, metacarpal and metatarsals were fragmented to make beads. In fact, over one hundred beads made on metapodial diaphyses were recovered in the site. I think these three reasons explain both the underrepresentation of lower extremities in the faunal assemblage and the probability that complete camelid skeletons were brought to the site.

There are three indicators that suggest this is a domestic assemblage:
High fragmentation: NSP (total number of recovered specimens)13,222/ NISP (number of identified specimens) 3,136 (this is 24% identified from the total bone sample indicating a high level of fragmentation), which is similar to Miller and Burger who had a 18 % identification rate (NSP 12,672 NISP 2,256) which was also interpreted as high fragmentation. There was high fragmentation to obtain marrow as well as partition bones to make them fit in the ceramic pots for cooking.
Cut Marks: There are twenty-three fragments that show intense evidence of cut marks and butchering activity (cut marks on places suggesting defleshing and dismembering of the carcasses)
Burn evidence: there are forty-two bone fragments with evidence of having been burnt.