A POLITICAL ECOLOGY OF THE HACIENDA SYSTEM: ENVIRONMENTAL TRANSFORMATION AND EVERYDAY LIVES AT GUACHALÁ, ECUADOR

BY

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DISSERTATION

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ABSTRACT

This dissertation is an archaeological political ecology of the hacienda system centered on a major textile workshop (obraje) and agropastoral estate called Hacienda Guachalá, in the northern Ecuadorian highland parish of Cangahua, canton of Cayambe. Scholars have long studied the hacienda land tenure system to understand its constitutive role in the political economy of Latin American societies. This dissertation contributes to that literature by bringing into focus the important links between environmental change, shifting ecological relations between human and non-human communities, and the everyday lives, practices and economies of hacienda laborer families. To do so, this research integrates archaeological, archival, and ethnographic methods that situate contemporary agrarian struggles in deeper currents of change since the sixteenth century CE.

The dramatic growth of the hacienda and plantation systems was a defining signature of colonial expansion in the Americas. The process transformed physical landscapes and social and labor systems to such a degree that these dynamics characterize a new global epoch, the Anthropocene, which is dominated by those ongoing legacies. The Cayambe region is an informative case for investigation for several reasons. First, the region and its population was dominated by the hacienda system to a greater degree than most of the Andes with almost 80% of its residents ensnared by debt labor by around 1700. Introductions of sheep, cattle, barley and wheat transformed local ecologies and environmental conditions and fundamentally changed life in the area. In the late nineteenth century, eucalyptus trees transformed the region once again, followed by the export flower industry since the 1980s. For roughly five centuries, residents have navigated these ecological changes and socio-historical forces.
The interdisciplinary approach of this dissertation seeks to understand how people carry forward these histories in their aspirations for the future. Conducted with the Proyecto Arqueológico Pambamarca, the archaeology of laborer households and work areas from Hacienda Guachalá and archival analyses of documents from the estate provide direct evidence of historical transformations and the everyday lives of residents, especially from contexts dating to the late nineteenth century. Oral history narratives from descendants and ethnographic studies of the surrounding communities connect these histories to the ongoing tensions in agrarian life today. Ultimately, this study highlights enduring forms of displacement and precarity along with compelling stories of resilience that help to understand struggles for environmental justice and sustainable futures at a global scale.
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CHAPTER 1: INTRODUCTION

The dramatic growth of the hacienda and plantation systems was a defining signature of colonial expansion in the Americas. Indeed, the effects of this process transformed physical landscapes and social and labor systems to such a degree that these dynamics characterize a new global epoch, the Anthropocene, which is dominated by those ongoing legacies (Moore 2016; Tsing et al. 2021). The concept of a “plantationocene” emphasizes this historical transformation in land tenure as a constitutive moment in the making of human and environmental history (Carney 2020; Haraway 2015; Moore 2016; Mitman 2019; Li 2018; Sapp Moore et al. 2019). The concept suggests that plantation-style agriculture fueled the displacements of people, plants and other animals that wrought ecological transformation together with capitalist and imperialist expansion.

Against this backdrop of emerging critical approaches to the plantationocene, this dissertation contributes new perspectives through an archaeological political ecology of the hacienda system in a region of the northern highlands of Ecuador called Cayambe. An analysis of Cayambe, and a major textile and agro-pastoral estate there called Hacienda Guachalá, is informative for several reasons. First, the residents of Cayambe were subjected to successive waves of imperial expansion just decades apart as Inca forces incorporated the region just before the arrival of Spaniards in 1532. This created major demographic changes within just one or two generations in ways that must have re-shaped the conditions under which European colonization advanced (Connell et al. 2019; Ramón 1987). Second, by around 1700 CE the region was dominated by the hacienda system to a much higher degree than most areas of the Spanish empire in the Andes. By around that year, historical data shows that nearly 80% of the local
population was ensnared in labor attachments to hacienda estates (Ramón 1987). Third, as the hacienda system expanded there, new plant and animal domesticates increasingly transformed the ecological conditions of the fertile valleys and multiple ecological zones to supply a growing textile and agro-pastoral sector. These changes were as much biological as they were social and political. Finally, this case is so important because in light of the preceding historical processes, the region has been a major source of collective political mobilization for Indigenous social movements (Becker 1999, 2004, 2008). Indigenous women of families attached to the haciendas for generations have been major organizing forces in those efforts. Today, the Cayambe region is the site of renewed land dispossession by the export flower industry, which has generated new social, economic, and environmental challenges to an area long subjected to eerily familiar circumstances. Understanding the historical circumstances and the lives of those who were involved in the day-to-day making of those histories can provide important insights to better grapple with key global challenges today. Such challenges include the ongoing socio-ecological effects of colonial land tenure systems and the push for sustainable agrarian practices rooted in ancestral rural knowledge.

Taking Cayambe as an informative case, this dissertation asks how ecological transformations impacted the everyday lives, economies, and social practices of residents who navigated those circumstances. How did the introduction of new species like sheep, cattle, barley and wheat to the Ecuadorian highlands affect everyday social, economic and ecological relations of Indigenous residents? How did ecological transformation and new labor systems create growing forms of resource precarity for local families? Despite the challenges and constraints of these new infrastructures of precarity, how did local families shape emerging forms of life in a changing agrarian landscape? What were the social mechanisms by which
families adapted to changing compressive forces over time? And, finally, do those dynamics shape life in the region today as local collectivities work to negotiate the advance of neoliberal forms of export flower agriculture on local terms?

This dissertation applies an archaeological political ecology framework to assess these questions through the study of lifeways at Hacienda Guachalá, in the northern Ecuadorian highland parish of Cangahua, canton of Cayambe. My research examines the historical parallels described above by deploying archaeological analyses of various nineteenth century laborer domestic spaces from Guachalá in addition to archival, oral historical and ethnographic evidence. Together, these lines of evidence illuminate the ways in which “community,” as I conceptualize it in this study, provides adaptive salience and vital sources of social and political energy through which local families mediate predatory forces on their own terms and in unpredictable ways.

Situated in the work of anthropologists who have analyzed the “frictions” of global capital around the world (e.g., Bear et al. 2019; Moore 2015; Murray Li 2014; Tsing 2005, 2015), this project demonstrates the importance of considering agrarian ecologies impacted by global capital. The analysis considers the ways in which human lives are textured through relations with physical environments and material objects that foreground the ceaseless production of community. Recognizing these socio-material relations as political reanimates our understandings of agrarian lifeways both today and in the past.

1.1 Guachalá and Shifting Agrarian Worlds

The Cayambe region has long been the setting for succeeding waves of imperial expansion and local resistance efforts, a process which still colors local identity and a strong Indigenous movement today despite the dominance of the hacienda system. Over more than five centuries, those events shifted complex local ecologies and social relations, the combination of
which I refer to as agrarian worlds. I use this term, following Galvin (2018: 234) to refer to complex assemblages of social relations comprised of human and non-human materialities and their intersections with capital, politics, finance, religion, infrastructure, and multi-dimensional social identities. All of these are key elements of the constellations of rural capitalism in the region. Tracing the articulations between all of these elements also requires attention to the historical forces that shade their meaning and context.

Roughly an hour drive northeast of Quito, the canton of Cayambe lies at the center of the world straddling the Equatorial line (Figure 1.1). Prior to Inca northern expansion in the late fifteenth century the area was inhabited by the “Pais Caranqui” population, a loosely-defined reference to what were likely several semi-autonomous polities, including the Kayambis, connected by a shared ethnic identity and ritual practices (Bray 2008, 2015). In a period of hilltop fortification and battles, these local groups were able to fend off the expanding Inca forces from the area for nearly two decades until around 1505 when Inca forces began to assert control of the new territories as they had throughout their rapidly expanding empire. They moved colonists known as mitimaes into the Cayambe region in a demographic shift that Segundo Moreno refers to as an early example of mestizaje in Ecuador (Moreno Yánez 2008:38). This means that by the time the Spanish made their own incursion into the northern highlands of Ecuador in 1534, the residents of Cayambe were already navigating morphing grids of imperial power and a changing social geography.
Figure 1.1 Overview Map of study area. (Map created by author with ESRI map layers.)
Just decades removed from resistance efforts against the Inca forces, Sebastián de Benalcázar led a new wave of Spanish forces northward toward Cayambe in 1534. As was common throughout newly possessed lands of the Spanish empire, the Crown quickly began distributing grants of indigenous labor and tribute known as *encomiendas* to elite Spaniards. The system was designed to create profit for Spaniards and Catholic religious instruction and conversion. Perhaps its most enduring effect was the foundation that it created for systems of land tenure and labor relations that formed the basis of the hacienda system by the seventeenth century. While the relative power of haciendas varied across different parts of the Andes, it was particularly powerful in what is today Ecuador, where nearly half of the registered Indigenous population was attached to these large estates by the end of the colonial period in the 1820s (Larson 2004). The hacienda thus became the dominant locus of social organization and political economy throughout the colonial and post-colonial periods (Jacobsen 1993; Klein 1993; Larson 2004; Lyons 2006; Powers 1995).

Hierarchies within hacienda estates manifested largely along ethnic lines into a system of elite white owners, mestizos with various administrative roles, and indigenous workers. The administrator, more so than the owner, managed the affairs of the estate along with administrators and scribes (*escribientes*) who kept financial accounts and mayordomos who acted as overseers of daily tasks (Lyons 2006:76–80; O’Connor 2007:156–159; Thurner 1993). The dominant labor relation in the region was a form of debt servitude known in Ecuador as *concertaje* (later called *huasipungaje*), wherein Indigenous peoples (the *conciertos* or *huasipungueros*) were coerced to work on the haciendas in exchange for a miniscule salary and small plot of loaned land (*huasipungo*) on which to grow subsistence crops (Becker and Tuttillo 2009; Guerrero 1991; Ramón 1987). The huasipungo system became the dominant mode of land
and labor organization throughout the Ecuadorian highlands and was the subject of a foundational Ecuadorian novel by realist author Jorge Icaza in 1938 by the title of *Huasipungo*.

Haciendas and the modes of rural life forged in the system of huasipungaje therefore were contested spheres of state by proxy in rural areas. Landholders sought to disarticulate collective forms of identity through the institution of the hacienda, attempting to reshape social relations through the disciplining of labor. And for a period of time, scholars have tended to perpetuate the idea that community dissolution was largely successful. A prevailing narrative asserted that structural forces had effectively dissolved those social mechanisms from hacienda laborers (Cotler 1970; Favre 1976). In early iterations of the historiography of the hacienda in the Andes, scholars tended to abstract the hacienda as an economic institution whose boundedness cut off mostly Indigenous laborers from broader society into an “artificial universe” (Favre 1976: 130). This view was summed up in the concept of the “triangle without a base” in which the social organization of the hacienda was strictly a vertical hierarchy tying the landlord to peasants, with no significant attention to horizontal linkages between laborers themselves (Lyons 2006; Thurner 1993: 43–44). It is precisely these horizontal linkages that I assess archaeologically in the specific case of Hacienda Guachalá.

Originally an encomienda, Guachalá became a private hacienda in 1647. By that time, records already show legal agreements between Indigenous communities and Spaniards purchasing rights to graze sheep on community lands (Bonifáz Andrade 1995; Ramón 1987). The presence of sheep in the area only became increasingly significant as the hacienda grew during the seventeenth and eighteenth centuries, at its height covering a majority of the roughly 1,000 km² of the parish of Cangahua (Becker and Tutillo 2009: 171–172). As elsewhere in the region, the hacienda was always an important producer of sheep wool, much of which was used
to produce textiles for export regionally throughout the Andes. The hacienda officially became a licensed obraje in 1700 and it continued to produce textiles until the middle of the twentieth century (Becker and Tutillo 2009; Bonifáz Andrade 1995). The obraje was a textile production facility that became renowned for its abuses committed against Indigenous laborers as they produced the sheep wool and cloth to supply mining centers across the Andes (Corr 2018; Cushner 1982; Ortiz de la Tabla 1977; Jacobsen 1993; Phelan 1967; Tyrer 1976). Conditions were so oppressive, and obras so numerous in Quito during the early colonial period that John Leddy Phelan has referred to Quito as the “sweatshop of South America” (Phelan 1967). At Guachalá, the obraje was the central productive engine of the estate after 1700 and continued, at varying productive levels, well into the 1940s. The hacienda also cultivated agricultural products such as barley, wheat, maize, potatoes, and beans, and produced goods such as cheese and milk, all of which are still important local products today.

The importance of Hacienda Guachalá in the transformation of the social and physical landscape of the region cannot be overstated. The introduction of flocks of sheep and herds of cattle, in addition to European cereal grains, had a dramatic influence on the soil and multiple ecological zones encompassed by the estate. It is imperative to grasp the impacts on local families as well as how they have navigated those ecological transformations to forge “new arrangements of culture and power” in these frictions of capital (Tsing 2005: 5). After all, in one of the regions most dominated by the hacienda system, local forms of organization have created some of the strongest Indigenous social and political organizing in the Andes since the 1930s (Becker 1999). How have local communities, often led by Indigenous women huasipungueros, navigated the transformations of the social and physical landscapes and what does this say about the ways that capitalist projects are enacted on the ground, both historically and today?
1.2 A Political Ecology of Agrarian Worlds under the Hacienda System

This dissertation employs a modified framework of political ecology that focuses on the materiality of these agrarian worlds, connecting broad ecological change to everyday lives. The huasipungo debt-peonage system has been a formative institution in Cayambe to this day. Referring both to a labor institution of debt servitude as well as the physical huasipungo house lot, huasipungaje was the primary interface through which residents lived their daily lives, connected with others, and navigated the opportunities and constraints of the hacienda.

Over the course of my research since 2014, accounts from elder descendants described the huasipungo as a constitutive part of their own identity as Indígenas or campesinos. What became clear from their accounts is that the huasipungo was not just a house, it was a whole assemblage of animals (chickens, guinea pigs, cattle), subsistence crops, and huts centered around the tulpa (hearth) around which families built their daily lives and formed extended social networks and collective identities. As Rudi Colloredo-Mansfeld (1999) has demonstrated in contemporary Otavalo, just north of Cayambe, “humble” material goods – what I consider here a material heritage of huasipungo life – are constitutive elements in the formation of everyday life and collective identities. Introducing the term yanga cosas to refer to these everyday objects, he writes that “they are used in daily routines, not only for practical tasks, but also to foreground collective obligations and identities” (Colloredo-Mansfeld 1999: 114).

The insights provided by Colloredo-Mansfeld in the 1990s foreshadowed, to some degree, important emerging approaches to materiality and social life that highlight the “forms of attachment between humans and things” (Jones and Boivin 2010: 345). As “mediators of relations” everyday objects or yanga cosas are part of the dense network of social ties and practices through which collective forms of social life – communities – are generated and
reproduced. Communities are always fluctuating social forms or, as Andrew Orta (2013:112-113) aptly argues, they are “forged.” As his metaphor of the hammer hitting hot metal conveys, “forging creates strength and resiliency as local compressive forces reshape the grains of the metal” (Orta 2013:112). The idea is not to claim community as a resistant form of the premodern past, but rather to point out that people have articulated forms of communal expressions in novel ways according to the circumstances in which they find themselves (Colloredo-Mansfeld 2009).

I follow this approach to community as a conceptual framework in this dissertation as a more salient local frame of social analysis to explore how rural capitalism was enacted in Cangahua since the nineteenth century. I am inspired in this move by recent works that have asserted that capitalism itself is not merely an economic system nor a social system; but rather a way of organizing worlds and the relations that constitute them. Capitalism is a way of organizing the multitude of relations between humans and non-human nature. Jason Moore (2015) refers to capitalism as a “mosaic of relations.” He suggests that “the imperative is to grasp the inner connections that conduct flows of power, capital, and energy through the grid of capital accumulation – and in so doing, to shed new light on the limits of that very grid” (Moore 2015: 7).

The concept of community I employ in this dissertation builds on a long tradition of scholarship of these social collectivities in anthropology, archaeology and related fields. I seek to understand the dynamics by which individuals and families forge social ties in diverse ways that often generate political strength (particularly useful reviews are found in Hull and Douglas 2018; MacSweeney 2011; Yaeger and Canuto 2000). As suggested in Colloredo-Mansfeld’s (2009) analysis of Indigenous social movements in northern Ecuador and encapsulated in his title, “Fighting Like a Community,” it is often the case that communities are forged through deep
differences, tensions, and struggles. This conception is quite different from the romanticized idea of communities as homogenous collectives that act as counterbalances to outside forces like capitalism. Rather, I discuss community as a frame of social action that is forged in various contexts and often re-made through novel reformulations across changing social, political, ecological and economic circumstances. The analysis in this dissertation suggests that this process of forging community can be seen through the honoring of ritual obligations and kinship, through networks of economic or market ties (that are simultaneously social and political), and in shared daily practices. Through archival, archaeological and ethnographic evidence presented in the following chapters, these dynamics are identified to understand the ways by which people navigate complex circumstances like the changing ecologies of empire, colonialism, statecraft and economic systems.

Because political ecology is so effective in identifying and tracing relations and disrupting totalizing conceptions of systems like capitalism, it provides a useful framework in this study to focus on the mosaic of relations that was forged through the materiality of huasipungo life. The material remains of exploited populations are often disproportionately less visible in the archaeological record as compared to elite groups with more formal architecture and material legacies. Fortunately, in the course of conducting this research, at least three different domestic contexts were identified in the area of Guachalá belonging to Indigenous households in various relations to the hacienda. These material assemblages provide unique insights into the webs of relations that they continued to spin as they spun wool and wove textiles for regional markets. These webs of relations are the focus of this dissertation, and they expose new tales of the development of agrarian capitalism in post-colonial Ecuador and new
connections for understanding the ongoing consequences of those histories for descendants today in Cayambe and across the globe.

1.3 Research Questions

This study presents and interprets the results of archaeological, archival, ethnographic and oral historical information assembled through a multi-year research project begun in 2014 under the auspices of the Proyecto Arqueológico Pambamarca (PAP). These multiple lines of evidence enable a long-term perspective that also connects ecological transformation and everyday lives. As a result, this research asks the following primary research questions:

1. How do local communities navigate the ecological changes and exploitative effects of large land tenure systems?

2. In what ways are households, like those of the huasipungo system, impacted by ecological change in their everyday lives, economies, and social practices? How did this manifest as a result of the introduction of new species like sheep, cattle, barley and wheat to the Ecuadorian highlands?

3. How did ecological transformation and new labor systems force growing forms of resource precarity and food insecurity for local families? And despite the challenges and constraints of these new infrastructures of precarity, how did local families shape emerging forms of life in a changing agrarian landscape?

4. How do the forces of history echo across contemporary manifestations of the hacienda system in the context of the neoliberal export flower industry across the former lands of Hacienda Guachalá?

These broad research questions are addressed over the following seven chapters. Following this introduction, Chapter 2 lays out in greater detail the theoretical framework of this dissertation and situates this work within the broader field of studies devoted to the Andean hacienda. Specifically, I develop an approach with the analytical tools of political ecology to study the ways in which the everyday materiality of households mediates particular social
relations and collective identities. This chapter details my approach to understanding community as messy, heterogeneous forms, through which collectivities adapt, negotiate, create, and fight amidst the changing ecologies of capitalist projects.

Chapter 3 describes the methodology that was implemented to address the research questions. This includes a discussion of archaeological survey and excavations as well as the artifact analyses. For this project, the most significant artifact categories included ceramics, faunal remains, and lithic objects. A significant effort was also made to connect these archaeological remains to archival evidence and participant ethnography as part of the methodology.

Chapter 4 focuses on the five centuries of transformation affecting the social landscape of Cayambe and specifically on the estate history of Guachalá and the surrounding Cangahua landscape since the nineteenth century. Account books and labor contracts provide valuable perspectives on the ways in which the estate attempted to reorganize and eliminate collective forms of identity, primarily through labor disciplining and the separation of nuclear households in the huasipungo system. These documents also highlight changing ecological and labor relationships. Administrators diligently recorded the available resources of plants and animals necessary for estate production. They also detailed the goods loaned to laborers as the latter found themselves steeped in increasing dependencies and debt to the hacienda. Additionally, estate inventories evidence the performance of social identity on the part of the hacienda landholders through their ownership of elite consumer goods and the material organization of the estate.

Chapters 5 and 6 shift to the archaeological investigations. Chapter 5 describes in technical detail the excavations conducted for this project. This includes excavations at the casa
A de obraje of Guachalá and a domestic space on a hill to the east of the mill complex of Guachalá called Molino Loma. A third context was excavated inside a house structure at the nearby community of Santa Marianita de Pingulmí, which was described as an independent community to which huasipungueros would sometimes escape the debt servitude at Guachalá (Pérez Garcés 2007). This third location thus served as an informative comparative context. Chapter 6 follows these descriptions of excavations with in-depth discussions of the artifact assemblages and their implications for understanding the agrarian life in Cangahua over the nineteenth and early twentieth centuries.

In Chapter 7, I draw out the primary conclusions of the artifact data and archival evidence. Weaving these two sources of data together provides important new insights on the agrarian lives of local residents and highlights how these help to address the research questions that drove this dissertation. The artifact data is also contextualized within the evidence from comparative sites excavated by archaeologists in the Andes and elsewhere in Latin America. As archaeological research of sites dating to colonial and post-colonial periods of Latin America expands, we can more fully integrate the insights of local sites to the broader story of plantationocene dynamics across the Americas.

I conclude this study in Chapter 8 by drawing a connective link to the extraordinary stories and actions of the descendant communities and local residents today who continue to struggle amidst renewed land dispossession ushered in with neoliberal reforms of the late 1970s and the export, cut-flower industry. In the face of steepening inequalities and unsustainable land use practices, those communities have forged futures of increased hope and resilience, carrying forward local histories of life in the orbit of Guachalá in their decisions today. While opinions vary across communities, the parallels between histories of the nineteenth and early twentieth
centuries and contemporary life today are informative anthropologically for the study of social life amidst exploitative land tenure systems, as well as for the lessons to be learned in creating more sustainable agrarian practices across the globe.
CHAPTER 2: POLITICAL ECOLOGY OF THE HACIENDA SYSTEM

Spanish colonization of the Americas rapidly transformed the social and physical landscapes of the hemisphere. In the Andes, scholars have exposed the political and economic structures that the new hacienda land tenure system created. But the inauguration of these new forms of land tenure went hand-in-hand with the massive transformations of plant and animal ecologies, new labor forms, and changing social, racial and gender formations. These changes were interrelated and inseparable as the new “biopolitical assemblages” of Spanish Empire (Corcoran-Tadd and Pezzarossi 2018). These changing forms of life can be obscured when land dispossession is framed solely as an economic system or as class-based antagonisms. Rural residents navigated the cultural and ecological displacements of the hacienda system in their everyday material lives.

This chapter suggests that a political ecology of the hacienda system can provide a framework through which to understand environmental and ecological change simultaneously with the everyday lives, economies, and social practices of the people who navigate those changes. This dissertation asks how the introduction of new species like sheep, cattle, barley and wheat to the Ecuadorian highlands affected everyday social, economic and ecological relations of Indigenous residents? How did ecological transformation and new labor systems force growing forms of resource precarity and food insecurity for local families? And despite the challenges and constraints of these new infrastructures of precarity, how did local families shape emerging forms of life in a changing agrarian landscape?

Historical archaeology is positioned to offer unique perspectives on these issues by attending simultaneously to both ecological transformation and the everyday material lives of Indigenous families in that process (Hauser and Wallman 2021). As a result, the political ecology
framework developed in this dissertation includes a uniquely archaeological lens on everyday materiality and community dynamics to center the experiences of families navigating truly epochal changes. After reviewing the historiographic literature on the Andean hacienda to situate the present contribution, the remainder of this chapter outlines the political ecology framework employed in this dissertation and the various theoretical impulses that inform it.

2.1 Situating the Andean Hacienda

Scholars of Latin America have long debated the region’s relationship to the world economy across centuries of changing political contexts. The hacienda system has often been at the center of such discussions because of the major role it played in land distribution, the exploitation of Indigenous and African-descended peoples, labor organization, production, social and religious transformations, and the ongoing consequences of the hacienda for social organization today. The relationship of environmental displacement to these political and economic dynamics has largely not been considered.

Early studies of the hacienda generally focused on the institutional structures of the land tenure systems to situate them within Spanish colonialism. In fact, two early examples by Lockhart (1969) and Wolf and Mintz (1957) laid important foundations for this type of study by examining the relationships between institutions like the encomienda and hacienda in the case of the former, and haciendas and plantations by the latter authors. Lockhart suggested that one ultimate goal of this type of research was to discern an “institutional history of the Spanish American great estate” (Lockhart 1969: 416). In some ways, the result was similar to the work of Wolf and Mintz (1957) who were part of a broader trend of anthropologists attempting to neatly sort rural Latin America into a series of ideal types whose institutions could thus more easily be compared across space and time. Nicholas Cushner was an important contributor to this literature, particularly in examining the development of what he referred to as “incipient agrarian
capitalism” and the Jesuit enterprises of farms, ranches and textile mills (obrajes) in the Quito region (Cushner 1982). Typologies of property forms, labor systems, markets and technology lend themselves more easily to that comparative exercise, but they also tend to omit the very lives and human agencies of the populations who dealt with those institutions.

Later works built on this historiographic foundation by shifting toward more explicit analyses of the relations between hacendado and various classes of laborers on the haciendas, and the position of the estates within broader colonial or national society. In this vein, an early approach to the Andean hacienda was encapsulated in the concept of the “triangle without a base,” primarily during the 1970s. The concept implied that the social organization of the hacienda was strictly a vertical hierarchy tying the landlord to peasants, with no significant attention to horizontal linkages between laborers themselves (Thurner 1993: 43-44). The model was applied both to the historical study of Andean haciendas as well as the post-agrarian reform estates studied by sociologists and anthropologists. Henri Favre, for instance, noted the maintenance of traditional culture only on haciendas in the Huancavelica region of Peru. He explained it as a strategy of landowners to “maintain peasant labor in an artificial universe” and allow the landlords to be the intermediary between laborer and the nation (Favre 1976: 130). For Favre, haciendas were units of agricultural production organized by feudal or semi-feudal relations of production. Hacienda peons were caught in a system of total domination, guarded from the outside world, and bereft of historical agency.

Julio Cotler implied similar interpretations from his data collected from five haciendas and two indigenous communities in the Cuzco area of Peru (Cotler 1970). He surveyed informants on social indicators such as whether they were Spanish speakers, listened to the radio, traveled to the capital, and their visions of the future. He found that in comparison to community
peasants, hacienda peasants were significantly more isolated and disproportionately more likely to agree that their subordinate position was a natural fact (Cotler 1970: 553-555). This same approach is what led scholars of the Cornell-Vicos project to believe that they could use the “isolated” Hacienda Vicos as a laboratory test for development and modernization strategies. In the nineteenth century, similar understandings of the hacienda also led Andean liberals to criticize the conservative landlords as responsible for the “backwardness” of the highlands and the supposed inability of hacienda peasants to become productive citizens of the new nations. While these studies were intended to highlight the rampant inequality of hacienda estates, they also mischaracterized social and political life on haciendas in the Andes.

During the 1980s, Andeanists began to challenge such understandings of hacienda organization and the strict model of the “triangle without a base.” One major impetus for new approaches was the emerging literature of peasant studies, which systematically dismantled the view of peasants as a-political (Stern 1987; more broadly Scott 1976). Steve Stern provided perhaps the most vehement challenge to the field in pleading for a rethinking of agrarian politics to understand “the role of peasants as continuous initiators in political relations among themselves and with nonpeasants” (Stern 1987: 8-9). Rather than simply viewing landed estates as the parochial “little worlds” where peasants competed for the patronage of the landlord, Stern urged practitioners to investigate “the manifold ways whereby peasants have continuously engaged their political worlds” (Stern 1987: 9). This critique spawned a rich tradition of scholarship attending to the importance of Indigenous peasant political involvements over time. Such work involved peasant appropriation of the colonial administrative system prior to the insurrections of the 1780s (Serulnikov 2003; Thomson 2002) and peasant-state relations after
independence and the intensification of liberalism (Guerrero 1997; Langer 1989, 2004; Mallon 1995; Mendez 2005; Prieto 2004; Thurner 1997).

Stern’s challenge also prompted a major re-thinking of approaches to understand constellations of social connection within and across the Andean hacienda. Herbert Klein’s (1993) study of the haciendas and ayllus of La Paz, Bolivia, pushed toward understanding interrelations between laborers of the haciendas and surrounding communities and also differentiated types of labor relationships of hacienda laborers during the eighteenth and nineteenth centuries. He showed that estates used both resident and hired seasonal laborers, sometimes even from neighboring haciendas. He offered important data by which to challenge the view of rural highland areas and haciendas as dated, feudal worlds by showing that both landlords and Indigenous residents appeared privy to market changes and opportunities. They exercised agency in responding to economic market conditions. Klein’s analysis gives a much more diversified image of the hacienda as a socio-cultural unit, which was not strictly bounded and homogeneous. Rather, the laborers themselves were often differentiated, they sometimes had occasion to travel to market or to other haciendas, and estate laborers often maintained relationships with networks of free communities.

In the Peruvian altiplano, Nils Jacobsen (1993) found similar dynamics in a study of communities and haciendas over the course of broader structural economic changes and cycles of wool export. His study combined both political economy and cultural approaches to understand the incomplete or disjointed transition to capitalism of the Azángaro region, despite the major growth of the export wool economy to supply Britain’s textile industry. With empirical rigor, he linked haciendas to broader socio-economic changes, including the expansion of estates in the second half of the nineteenth and early twentieth centuries, and processes by which landowners
and peasants forced, enticed, or resisted various labor relationships. Rather than a pervading transition to wage labor, we see ongoing rural struggles as giving shape to altiplano reality. While on some haciendas, laborers came and went relatively quickly, *colono* (labor tenant) families on other estates stayed over generations and these uneven struggles created a stalemate in the transition of the rural altiplano (1993: 289-293). Jacobsen thus highlights the variation in social and economic mechanisms of labor and the relations between haciendas, indigenous communities, and broader global market forces.

Until this point, the Andean hacienda was mostly assessed in terms of the longstanding debates about the institution as a feudal relic or a capitalist enterprise. Arguments hinged on detailed analyses of markets, labor relations and degrees of capitalist transition through a political economic lens. In Ecuador, scholars like Andrés Guerrero (1978), for example, plotted out different paths from a supposed “pre-capitalist mother hacienda” toward either a “Junker road” to wage labor and capitalist relations or a “peasant road” that led to the dissolution of the hacienda and the formation of cooperatives or small-farming by the late twentieth century. Studies like those of contingent altiplano livestock markets explored by Jacobsen (1993) above were cautionary warnings to question simpler “transitions” of the hacienda system, however.

But by the 1990s scholars began to explore a new dimension of life across the hacienda system, highlighting more explicitly the cultural dimensions of authority and social organization, particularly through ritual practices. In his study of two highland Ecuadorian haciendas of Chimborazo, Mark Thurner (1993), also following Andrés Guerrero (1991), examines how peasant households in external communities created ties with hacienda peasants by means of kin-based social relations. Relations between hacienda-bound families and external communities created a web of reciprocal relations, granting access to needed resources as well as enabling a
sphere through which families sustained ritual practice. Thurner describes the festivities of carnival to demonstrate the extent of these social webs. Resident hacienda laborers as well as laborers from external communities gifted various products like eggs, guinea pigs, or chickens to the hacendado who reciprocated with chicha, liquor, foods and music. This enacted a sort of pact that secured the exchanges and rights to resources like pasture, fuel, and water from hacienda territory.

Both Thurner and Guerrero describe the political theatrics of these rituals and emphasize the ways in which they temporarily level the social distance between landlord and laborer, a momentary symbolic inversion of the social order. These patron-client relationships became encoded in ritual cycles. Thus, while paternalism was a key organizing principle of hacienda social relations, it is also important to note how haciendas and their residents became parts of broader social networks and, as Galo Ramón (1987) argued in Cayambe Ecuador, the hacienda could become a space in which webs of social ties were “re-constituted.”

These cultural dimensions of life in relation to hacienda estates have important ramifications in pushing beyond the class-based studies of prior scholarship. This is particularly important in the Cayambe area of Ecuador where the legacies of the hacienda system have manifested with broad connections to “multiple modes of rural consciousness” (Becker 2004). Marc Becker’s study of protest in the Cayambe region of Ecuador in the 1930s is a complex interpretation of the relationships of haciendas to the formalization of political parties and reform. In 1930, workers from Hacienda Pesillo in Cayambe (just north of Hacienda Guachalá), who had formed a union known as El Inca, presented a list of demands that were typical of an urban proletariat. They addressed working conditions, indebtedness, and salaries among other issues. These laborers were mostly huasipungueros who, according to Becker, were developing
“multiple modes of rural consciousness” that cross-cut ethnic and class identities. In fact, hacienda workers collaborated heavily in the formation of the first peasant unions and political parties like the Confederation of Ecuadorian Workers (CTE) and the Ecuadorian Federation of Indians (FEI) in partnership with urban leftists. The vision of political federations like the FEI went beyond economic or class-based concerns to include the dimension of Indigenous ethnic identities. Led by Indigenous huasipunguero women like Dolores Cacuango, whose families had worked the haciendas for centuries, the FEI’s founding principles included not just the economic liberation of Indigenous peoples but solidarity with all American Indians and the affirmation of Indigenous identities and customs (Becker 2004). Becker thus recognizes the gendered and ethnic aspects of rural protest and labor.

This dissertation seeks to build on this vast tradition of scholarship on the Andean hacienda in several respects. Haciendas like Guachalá transformed local landscapes through the introduction of new biological species that, in turn, generated significant changes in the lives of local residents. But previous approaches have not connected the broad ecological transformations to the daily lived realities of residents navigating those changes. In essence, prior approaches have either considered the political economy of the hacienda, or the ritual life of hacienda residents. But analyses have not integrated an understanding of the connections between ecological transformation and the displacements that it causes to labor systems, cultural practices, and the everyday lives of those enduring on the estate. A modified framework of political ecology offers a way forward by combining the concerns of political and economic relations with a deep appreciation for the ways that local ecologies are intertwined. A focus on the materiality of everyday life and foodways at the household level contributes important material insights.
2.2 Political Ecology of the Hacienda System

The transformative role of predatory land tenure systems since the sixteenth century is a key force in what many have termed the “anthropocene,” or what some have alternatively labelled the “capitalocene” or “plantationocene.” The alternative phrasing is meant to convey that these systems have systematically displaced both people and entire ecologies (Haraway 2015; Moore 2015; Sapp Moore et al 2019; Tsing 2015; Tsing et al. 2021). Use of this term is also intended to highlight that land tenure models like that of the plantation and hacienda are intimately connected to histories of colonialism, capitalism, racism, and the ways that these transformed land, labor, bodies, local ecologies, and cultural identities. These re-organizations occur through gendered and racialized processes. An important contribution of this work is the push to understand capitalism itself not as a totality but rather in the ways that it is generated out of tentative and diverse social formations, including non-human ecologies.

Political ecologists have accomplished some of this work by honing analyses on human-environmental interactions across the world. Such studies provide an informative starting point for this dissertation project, which focuses on enduring patterns of land dispossession in the Andes. The framework of political ecology itself has a complex genealogy and remarkably diverse applications. It is precisely this flexibility that I pursue in this dissertation, borrowing its strengths to direct my examination of the ways that ecological change coincides with everyday social lives.

Anthropologist Eric Wolf was an important early influence on the field of political ecology, using that specific phrase to refer to the study of how power mediates relations between humans and environments (Wolf 1972). His contribution was to inject historical breadth and political economy into the study of cultural ecology. In doing so, political ecology attempted to address the deficiencies in the frameworks of both political economy and cultural ecology as
separate domains. This was summed up in Blaikie and Brookfield’s classic study of land
degradation where they employed political ecology as an approach that “combined the concerns
of ecology and a broadly defined political economy” (Blaikie and Brookfield 1987: 17). At the
time, political economy was strongly influenced by the lens of “dependency theory” and “World
Systems” approaches (Gunder Frank 1966; Wallerstein 1974). Those latter frameworks provided
strong threads of analysis in Latin American scholarship that sought to understand the global
political influences structuring the inequality that afflicted much of the region since colonizaton.

Many of these early political ecologists were particularly interested in studies of labor in
rural contexts as a nexus by which to understand the relationship of nature and society, a key
focus for political ecology. Michael Watts (1983), for example, recognized that in colonial
Nigeria capitalism altered peasant communities’ ability to subsist in familiar ways. Instead of
ensuring subsistence through mechanisms of a “moral economy,” market penetration and
commodity production had made peasants vulnerable to both market crises and climate
variations. His assertion meant that famine was not merely a naturally induced condition, but
inextricably produced in social and political ways. Similarly, Blaikie and Brookfield interjected
that land degradation through processes like soil erosion could not simply be explained with
reference to the natural properties of the soil, but rather by relating this process to the socio-
political relations altering labor, land-use practices, and an entire “regional political ecology”
(Blaikie and Brookfield 1987: 17).

A broadened application of ecological thinking led Leslie Anderson to formulate what he
termed a “peasant political ecology” based on his work with rural communities in Costa Rica and
Nicaragua (Anderson 1994). He notes that his interlocutors “saw themselves, each other, their
communities, their surrounding natural world, and their wider society as part of an interacting,
interdependent whole” (Anderson 1994: 6). Anderson’s work was important insofar as it broadened the potential implications of the term “ecological,” to stress the centrality of relations and interdependence that were at once social, political, and “natural.” His was an attempt to bridge the two competing paradigms of rural political action, best represented by Samuel Popkin’s (1979) rational actor paradigm and James Scott’s (1976) moral economy approach. Instead of understanding rural political action in terms of either individually motivated gain or collective action seeking to preserve community traditions, Anderson proposed a middle ground based on the interrelations between individuals, communities, and the state. These early works were important threads in an approach that articulated ecological relations with the effects of capital in rural agrarian worlds – contexts similar in many ways to the highland region of Cayambe addressed in this dissertation.

There is no necessary link between the approach of political ecology and the study of capitalist formations. And yet, there is a convergence between these fields of thought that has proved fruitful in considering the context of this dissertation. The convergence in these fields, I believe, hinges on the shift to relational thinking across the social and natural sciences. Relational thinking has shifted the analysis of capitalist formations in ways that make it particularly compatible with ecological frameworks. The term “ecology” here signals an approach that means at least two important things. First, that broad systems like capitalism are not singular, coherent entities but rather an ecology itself comprised of shifting relations (Moore 2015). Second, that those relations articulate between humans, but also between humans and local ecologies (Besky and Blanchette 2019; Li 2014; Tsing 2015; Tsing et al. 2021). These socio-ecological articulations are fundamental to the ways that capitalism reproduces itself across time and across the world.
By the 1990s, ideas emerging out of political ecology were increasingly used more explicitly in studies of capitalism across the globe. There was debate as to how to conceptualize the relative power and definition of capitalism and its influence. At a basic level of critique, it was important to emphasize the power and devastating effects of capitalism as a “juggernaut that transformed everything in its path” (Biersack 2006: 15). On the other hand, many found it equally as important to recognize that there were often conflicting “articulations of a capitalist system with persisting non-capitalist forms of production” (Watts 1983: 182). In the eyes of scholars partial to these latter conclusions, it was imperative to understand these local-global articulations and the novel forms of economic activity and social relations that resulted.

Approaches to capitalism across the disciplines by the turn of the century thus largely advocated the idea that, despite its destructive capacity, capitalism was not an omnipotent totality. Stuart Hall suggested that in the process of assuming a hegemonic position globally, capitalism has had to “incorporate and partly reflect the differences it was trying to overcome” (Hall 1997: 32). This thread certainly runs through the work of later analyses of global capitalist connections. For example, Anna Tsing (2005) proposed the metaphor of “friction” to highlight the deeply heterogeneous actors that interact in places like Indonesian rainforests when capitalist projects take root and local peoples navigate those changing conditions. It is in those frictions that novel forms of life and economic activity, indeed “new arrangements of culture and power,” emerge (Tsing 2005: 5).

Conversations emerging around the concepts of “capitalocene” and “plantationocene” are building on this work by recognizing the fact that capitalism is itself a mosaic of relations that transforms and is transformed by local ecologies. Jason Moore has made important contributions to this literature in arguing that capitalism is a way of organizing relations between humans and
the rest of nature (Moore 2015). Moore argues against what he calls “the Anthropocene’s love affair with the Two Century Model of modernity,” wherein scholars pin the origins of contemporary socio-ecological crises on the last two centuries of industrial capitalism and fossil fuels (Moore 2015: 94-95). Instead, he locates the origins in “the remarkable remaking of land and labor beginning in the long sixteenth-century, ca. 1450-1640” (Moore 2015: 94-96). He refers to this as the beginning of the “capitalist world-ecology” where an epochal shift was inaugurated in humanity’s relation to the rest of nature. These arguments inform the present study in placing the burden of analysis squarely on the socio-material relations at the heart of how capitalism, in the form of rural land tenure, transforms and is itself transformed.¹

Other scholars, including Laura Bear, Karen Ho, Anna Tsing and Sylvia Yanagisako have laid out explicit frameworks through which to critically analyze the relationality of capitalism as ecology (Bear et al. 2015). In their “Feminist Manifesto for the Study of Capitalism” they lay out several key points that also inform this dissertation. First, they advocate the study of the generativity of capitalism. This is to say that they are explicitly concerned with the “means and mechanisms” by which social power and inequality are generated, historically through gender-based exclusion. Second, they shift away from approaches to capitalism that

¹The literature on the plantationocene as I apply it in this dissertation largely does not engage specifically with the issue of differences in the systems of “hacienda” and “plantation.” As mentioned earlier in this chapter, this distinction has been an important part of scholarship on rural political economy, particularly in Latin America and the Caribbean as a result of Wolf and Mintz’s contribution (1957). Despite the lengthy and informative scholarship that attends to the differences in these “types,” I apply the term plantationocene here broadly to include many of the socio-ecological consequences that were common to the hacienda and plantation systems. Some of the key differences of these two types generally refers to greater capital accumulation, access to broader markets, and more efficient land use on the part of plantations. While there are certainly differences in each enterprise, I find that the key consequences of plantation-style agriculture summed up in the concept of the plantationocene similarly hold for the hacienda system writ large. While broad application of the term can have the effect of obscuring key differences in land tenure systems, I believe that my application of this literature as a conceptual framework to interpret the specific historical details of Guachalá described in later chapters will prove informative rather than obfuscating. Both haciendas and plantations contributed to the development of a capitalist “world-ecology” and its contemporary socio-ecological crises.
view it first as an “economic logic” and a bounded economic domain. Instead, they understand capitalism as “formed through the relational performance of productive powers that exceed formal economic models, practices, boundaries, and market devices. Instead of taking capitalism as a priori, as an already determining structure, logic and trajectory, we ask how its social relations are generated out of divergent life projects” (Bear et al. 2015). This approach is based on feminist critiques, across disciplines, that challenged the separation of market versus non-market relations that had often translated to over-emphasis on the actions of men in public contexts versus the actions of women solely in household labor and relations (For application in archaeological contexts see Dunaway 2008; Fennell 2017: 108-111; Voss 2008a, 2008b).

While many studies of land dispossession and capitalism have focused either on the economic structures wrought by global capital or the oppositional politics of communities against such systems, this emerging scholarship is charting an alternative path forward. By asserting that it is a fallacy to believe that a pre-made and bounded “economy” or “economic logic” can exist, attention instead turns to how capitalism is a way of organizing relations; relations between humans and the rest of nature, enabled by specific systems of inequalities and oppressions. Capitalism is at once a series of intercultural entanglements as well as shifting relations between humans and local ecologies. Importantly, this sort of analysis relies on attention to the “key sites of its production” and the “connected practices” that constitute the relations at the heart of the force of capitalism (Orta 2013). This is as true of the study of contemporary iterations as it is of past manifestations.

My development of an archaeological political ecology in this dissertation provides a way to investigate the historical process through which ecological transformation and coercive labor systems impacted the everyday lives of hacienda residents. The transformation of the Cayambe
landscape since colonization also transformed society, introduced crippling economic precarity, and forced hacienda residents to re-shape life with new sorts of ecological attachments, resources, and lifeways. Because material relations and practices are so central to these shifting processes, archaeological research is uniquely positioned to address these questions with historical breadth and material specificity.

One of the most important domains in which archaeology can contribute to the goals of political ecology is through historical analyses of households and their relation to ecological shifts. Ever since Wolf’s early studies in political ecology of Swiss alpine communities, the household was a key dimension of interaction (Wolf 1972). The household is particularly important here because the way that capitalism developed, as a world-ecology, was to displace existing social relations, with a primary locus being the household and family. In part, this was, and is, accomplished through ecological change because these force alterations to everyday lifeways. In the present case, the introduction of massive flocks of livestock and new cereal grains transformed the physical landscape, and also generated cascading consequences for families forced into new infrastructures of resource precarity. The way that households mediated those changes can be assessed archaeologically.

2.3 Ecologies of Precarity, Community, and Everyday Lifeways

Among the more evocative recent examinations of the effects of capitalist ecological transformation is Anna Tsing’s tracing of the Matsutake mushroom (Tsing 2015). At the center of her analysis is the idea that when ecologies are disturbed, new ecologies can flourish. Matsutake mushrooms and other fungi forge underground networks and emerge in unexpected places among the capitalist devastation of material landscapes. For human lives caught up in those transformations the question, of course, is how the social, political, and economic forces constrain or shape the new ecologies that can flourish and who benefits or suffers. Under the
hacienda system in Cayambe after colonization, new plant and animal species flourished, but the labor system created steep infrastructures of economic precarity at the heart of the huasipungo debt-labor system. Precarity, according to Tsing (2015), describes a condition of vulnerability to others. She further observes that “unpredictable encounters transform us; we are not in control, even of ourselves. Unable to rely on a stable structure of community, we are thrown into shifting assemblages, which remakes us as well as our others…Thinking through precarity changes social analysis” (Tsing 2015: 20, emphases mine).

The social analysis that I outline here requires both identifying the process whereby economic precarity was instituted in the first place through the hacienda system, but also considering the social relations through which precarity was challenged by hacienda residents. Tsing notes that in conditions of precarity, changing with the circumstances is a matter of survival. But survival is not just the fight to save oneself at the expense of others. Rather, surviving precarity may be through the generation of “livable collaborations” (Tsing 2015: 28). In using this phrase she turns to the literature of ecology to reconceptualize the concept of “community” as an “assemblage” of relations. I suggest in this dissertation that a renewed focus on the concept of community as a generative social force can help to understand the ways in which rural hacienda-bound families navigated the economic precarity of the hacienda system.

Thinking about the everyday practices of hacienda life as a social process of “community” is important in several respects and requires some contextualization. In the long tradition of the study of Andean haciendas much of the early historiographic literature created a bifurcation whereby only the lives of Indigenous peoples living outside of hacienda control were referred to as communities. In contrast, those living in relations of labor and debt to the hacienda generally became glossed as the victims of the transition to capitalism, a-political, and cut off
from the world outside. Quite simply, in this version there were haciendas and there were communities, a separation that caused a deep misunderstanding of the lives of those attached to the large estates.

Colonial authorities, and later, state and local officials attempted to cultivate new subjects through the locus of community and household precisely because they were key interfaces for the social mechanisms that give energy and productive political power to particular collectivities. As a point of clarification, in Cangahua and across Ecuador, communities, or comunas, are also legal entities with administrative structures. In fact, Marc Becker (1999) has argued that the State implemented the 1937 Ley de Comunas specifically to manipulate local affairs. Those efforts were resisted by indigenous activists in the Cangahua region where very few comunas were legally formed in the aftermath of the 1937 law. With this in mind, it is also useful to think through community as a conceptual frame so as to interrogate the dynamics of social collectivities. Communities, whether legal entities, cooperative organizations, informal support groups, or other forms of association, are key social configurations capable of deep social impact.

The idea of community as a unit of study in anthropology, and especially in the Andes, has rightly suffered a bruising period of critique, however. In the Andes, community ethnographies famously came under attack for “missing the revolution,” romanticizing Indigenous communities as continuities of the pre-Columbian past while ignoring the serious political events of the day (Ferreira and Isbell 2016; Starn 1991). And yet, the concept of community, and community ethnographies, stubbornly remains and has even come back with renewed rigor. I suspect that the reason for this is, ironically, a logical outcome of the prior academic polemic of the 1990s. That is, while some critiqued community ethnographies as
engaging in romanticization in the sense of Said’s *orientalism* (1979) and ignoring politics, recent studies have also begun to re-center a concept of community precisely as a salient frame of political action or social force (Colloredo-Mansfeld 2009; Orta 2013). Others, like Marisol de la Cadena (2010; 2015) have made space for understanding an alternative politics of community, an Indigenous “cosmopolitics,” in the Andes based on distinct ontological relations to the earth (“earth beings”) with dire consequences for ongoing economies of mining and extraction.

Classic ethnographic studies like Catherine Allen’s (1988) work in Sonqo, Peru, first challenged the notion that community was a bounded entity or a quality that a group possesses. Instead, Allen observed that reciprocity acts as a primary mechanism of social compulsion, calling it the “pump” at the heart of Andean life. Allen articulates the ayllu (always imperfectly glossed as an Andean form of community) as a dense network of social ties and a set of practices through which it is reproduced (see also Abercrombie 1998: 21 on the impact of embodied “social memory” on social formations). In this sense, communities are always fluctuating social forms or, as Andrew Orta (2013:112-113) aptly argues, they are “forged.” His point is key here as his metaphor of the hammer hitting the hot metal implies that “forging creates strength and resiliency as local compressive forces reshape the grains of the metal” (Orta 2013:112). The idea is not to claim community as a resistant form of the premodern past, but rather to point out that people have articulated forms of communal expressions in novel ways according to the circumstances in which they find themselves (Colloredo-Mansfeld 2009). In some regards, the metaphor used by Orta to describe resiliency under compressive forces refers to the same social process described by Tsing as modes of survival in conditions of precarity.

As first discussed in Chapter 1, the concept of community as I develop it in this dissertation, refers to community as an organizing principle by which individuals and families
forge social ties in diverse ways that often generate political strength. As suggested in Rudi Colloredo-Mansfeld’s (2009) analysis of Indigenous social movements in northern Ecuador and encapsulated in his title, “Fighting Like a Community,” it is often the case that communities are forged through deep differences, tensions, and struggles. This conception is quite different from the romanticized idea of communities as homogenous collectives that act as counterbalances to outside forces like capitalism. This was a view popularized by Wolf’s (1957) notion of the “closed corporate community” to reference community as an insular defense mechanism against external change. Rather, I discuss community in this dissertation as a frame of social action that is forged in various contexts and often re-made through novel reformulations across changing social, political, ecological and economic circumstances. Community formations can also be seen in an assortment of social collectivities like trade associations, collective rights groups, religious confraternities, advocacy groups, and others. The analysis in this dissertation suggests that this process of forging community can be seen through the honoring of ritual obligations and kinship, through networks of economic or market ties (that are simultaneously social and political), and in shared daily practices.

It is important to note that the social processes that forge community are also inextricably material processes. It is no coincidence that scholars like Tsing (2015: 22-23) reconceptualize community as “assemblage” at the same time that archaeologists were employing the same term (Fowler 2010, 2013; Harris 2014; Pauketat 2013). Thinking through community as assemblage fits a political ecology analysis because it understands community as a social formation of relations in which material objects, plants, and animals are intimately intertwined with human practices (Morehart et al. 2018; Richard 2019).
In archaeology, community was long understood as a nucleus of co-residence or a building block of society. Canuto and Yaeger (2000: 5) brought attention to the issue by pushing for practice-oriented approaches meant to focus archaeological analysis on social interactions and the sense of identity that was produced in those interactions. Pauketat (2008: 249) went a step further in claiming that communities may be understood as a quality of places, experiences, practices, and even human bodies, thus asserting that things and places were important components in the emergence of communities. Speaking to a more active and relational conceptualization of community, he suggests that community is as community does (Pauketat 2008: 240). Most recently, Oliver Harris (2014) has discussed communities as “assemblages” to expand the breadth of phenomena that we consider as constitutive elements in the making of such collectivities. Following Latour (1993, 2005) and a host of others, he suggests that agency emerges from the relations between humans and nonhumans and that by accepting objects as mediators of relations, we understand them as part of the community (Harris 2014:88).

What these approaches suggest is that a critical take on community requires attention to the everyday materiality that constitutes such social forms. I agree with Overholtzer and Robin (2015: 6) that bodily engagement with daily material practices forms a crucial site for the constitution of people, identities, and societies (see also Olsen 2010: 37–38; Webmoor and Witmore 2008). In fact, cultural anthropologist Rudi Colloredo-Mansfeld anticipated this material turn in his studies of household life in Otavalo, Ecuador during the 1990s. Following descriptions from his Otavalan informants in the highlands just north of Cayambe, Colloredo-Mansfeld (1999:114) found that a category of “humble things” or “yanga cosas” in mixed Spanish and Kichwa, shaped life in important ways. He notes that such objects are used “in daily routines, not only for practical tasks, but also to foreground collective obligations and identities”
(Colloredo-Mansfeld 1999: 114). He found that individuals within and across households, bound by various real and fictive kin ties, reconstituted those webs of social relations through labor obligations and reciprocal exchanges. Central to these processes were mundane meals and beverages like chicha that gather people together. The preparation and sharing of these foods was an essential part of mobilizing household-level labor (Mayer 2002) as well as sustaining social ties.

In his work south of Cayambe in Chimborazo province, anthropologist Barry Lyons examined similar processes through complex social relations between hacienda laborer descendant families. These horizontal ties (the “base of the triangle”) during the 1990s included strong expressions of moral attitudes enacted through the mechanisms of reciprocity and exchange (see also Winchell 2016). He found that descendants of hacienda laborer families often exchanged labor such as the care of personal livestock or assistance in the harvest of subsistence plots. He observed that these are forms of reciprocity that sustained a sense of ongoing mutual obligation and relationships. Rachel Corr has argued similar points in her analyses of life at another colonial obraje in highland Ecuador called San Ildefonso (Corr 2016). In the context of the hacienda system, these social ties would have been essential strategies to cooperate on household labors to avoid the need to request products from the hacienda and the debt that it would have incurred.

What these studies demonstrate is the social power of sustaining and honoring a wide network of mutual obligations and social ties. My own ethnographic work with communities of descendants of the huaquipunguers of Guachalá in Cangahua supports a similar interpretation where networks of mutual support help to combat the negative social and environmental effects of cut-flower plantations (Cossin 2019). The “yanga cosas” so important to everyday life and to
mediating those social connections, including agricultural tools, ceramic jars, grinding stones, and native plants, are also major actors in the annual harvest festivals of San Pedro where communities proudly brandish them in parade-like processions. In short, Colloredo-Mansfeld’s insights offer a novel approach to interpret material culture of life under the hacienda system; not as reflections of ethnic identity but as part of the active and dynamic process of community production and social life.

Historical archaeologists have long been attuned to the importance of these types of material goods in the everyday lives of households. In particular, archaeologists have showed how local social networks and circuits of material exchange often confound the large-scale plans of officials, in part through material choices and practices (Fennell 2017; Hauser and Wallman 2021). These are efforts to identify how communities of enslaved, coerced, or marginalized peoples shape, and are shaped by, broader transformations (Fennell 2017; Leone and Knauf 2015; Leone and Potter 1999; Richard 2019). Such studies have only recently been conducted in Latin America (Pezzarossi 2015; Sweitz 2012; Terese Newman 2014) and the Andes (Balanzategui 2017; Corcoran-Tadd 2017; Hu 2016; Smit 2018; Stahl et al. 2020; Weaver 2015, 2021; Weaver et al. 2019), but provide important comparative insights and are explored in depth in Chapter Five. The integration of ethnographic and archaeological perspectives in this dissertation provides a useful interpretive framework for considering the active role of “yanga cosas” in the lives of Guachala’s resident population.

2.4 Archaeology and Political Ecology in the Orbit of Guachalá

Early anthropologists previously captured in rich detail the various entanglements between human and non-human animal and plant species (Evans-Pritchard 1940; Harris 1966; Rappaport 1967; Steward 1955). Cultural ecologists famously recognized the important links
between human societies and pigs, cattle, and other local ecologies. Recent studies, however, like those described in this chapter remind us of the importance of accounting for those relations even (and perhaps, especially) in contexts where colonization and capitalism have been driving forces that displace existing ecologies. It is possible to account for historical and political forces while still recognizing the essential ways in which human lives are intimately bound with other species (Besky and Blanchette 2019). This is the work of the archaeological political ecology that I employ in this dissertation.

Archaeologists have only recently engaged explicitly with the framework of political ecology in contexts of plantation studies and colonial and post-colonial contexts (Corcoran-Tadd and Pezzarossi 2018; Dawdy 2016; Hauser and Wallman 2021; Richard 2019; Stahl et al. 2020). These studies have shown how archaeological methods are uniquely positioned to speak to the concerns of political ecology and to the interrelated conditions of human economic precarity and inequality as well as ecological degradation. Additionally, archaeologists have only recently recognized how this evidence contributes to our knowledge of the creation specifically of “infrastructures of food insecurity” as an aspect of the broader economic precarity that characterizes much of the world’s population over the last 500 years (Goldstein 2019; Logan 2020). What these archaeologists argue is that the goal of an archaeology of precarity is not simply to identify it in the material record, but rather to understand the surrounding forces and conditions that enable precarity over time and the ways that communities overcome it. These are the goals of the following analysis of lives around Hacienda Guachalá.

The following chapter will outline the research methodology used to answer the research questions posed in this dissertation and how the methods are informed by the conceptual approach of an archaeological political ecology. The approach involved archaeological, archival,
and ethnographic sources. Historical records from Guachalá revealed important information regarding the growth of livestock and new cereal grains, and later eucalyptus forests, that transformed the landscape and the rhythms of daily agrarian life. Such archival evidence shows how these new plant and animal species became incorporated into local foodways and medicinal practices, and how the huasipungo labor system attempted to dislodge social relations through labor and create infrastructures of dependence and precarity of hacienda laborers on the estate. On the other hand, historical records also present evidence of the enduring importance of kin obligations, marriage and ritual practices and how the new food items (like beef) were appropriated to honor those traditions in forging community relations. Archaeological excavations reveal further evidence of the everyday economies. Those investigations identify objects that families were able to acquire through local exchange networks and the changes in diet and adaptation of new food sources to foodways practices.

Such past social strategies are ongoing today as ecological transformation and land dispossession continue with the growth of the cut-flower industry. Flowers mediate local labor practices and economies, just as the flocks of sheep, cattle, barley, and wheat did centuries ago. The experimental introduction of eucalyptus forests into Ecuador and around Guachalá in the late nineteenth century forced further adaptations to new ecological flourishings that have changed highland and coastal life ever since. And local communities have incorporated these resources in diverse and unpredictable ways. What is clear is that today, as throughout the past, large structural realignments are negotiated in the daily lives and material practices of those most affected. Used critically, archaeological evidence and narratives can help to understand the ways in which community can be a salient frame for political power and social gain under changing circumstances.
 CHAPTER 3: METHODOLOGICAL APPROACHES FOR THE STUDY OF GUACHALÁ AND PINGULMÍ

Drawing on analytical frames informed by political ecology as I employ it in this dissertation, this chapter outlines the methodologies used to collect appropriate archaeological, archival and oral historical evidence related to the social lives of nineteenth and twentieth century rural families in the parish of Cangahua, Ecuador. Employing a political ecological approach required methods that could identify social activity across the broad landscape of Cangahua, from the Hacienda core to the valleys beyond and their relationship to the surrounding environment. Combined with domestic assemblages of huasipungo house lots, the data could yield information related to potential material differences across households, identify potential networks of rural mobility, and contrast material practices between huasipunguero families and those of the independent community of Pingulmí. The political ecological approach also required a long-term perspective that could tie together archival documentation of the long history of Hacienda Guachalá, archaeological evidence of the lives of nineteenth century Indigenous families, and the memories and lived experiences of their descendants today. Specific archaeological methods often varied by context depending on the particular environmental circumstances, land use or state of preservation in particular areas, in addition to the objectives at each site.

Archival documentary sources were key to the methodology of this project in at least three important ways. First, documentary sources provided specific information relating to changes in the constructions of Hacienda Guachalá, which aided in the formulation of survey and excavation plans to target archaeological work in spaces of most interest to the research questions. Estate inventories consistently provided room by room descriptions of the property,
beginning with the earliest inventories, to my knowledge, from the 1750s. These documents helped to determine the spatial organization of the estate, domestic and labor spaces, constructions materials used, and new facilities added over time, such as latrines in the mid-late nineteenth century. These inventories also listed the home furnishings of the estate in great detail, which was used to understand the potential market networks of the landowners as well as the materiality of social life as it was performed through the use of everyday objects like tablewares and other furnishings.

Second, records revealed increases of sheep, cattle, barley, wheat, and eucalyptus as the primary ecological actors responsible for transforming the local landscape. Records included tallies of the numbers of sheep and cattle at various points in the history of the estate. Similarly, they quantified the agricultural sectors and fields seeded with each crop and the areas devoted to the pasture of different animals. Entries in some inventories of the gardens planted at the estate house, as well as other facilities like the cheese workshop at San José showed the rich biodiversity of the gardens and offered a comparative view of the edible options available to the landowners in contrast to the agricultural fields themselves and the chacras (domestic plots) of the huasipungueros.

Third, the documents provided a lens into some of the more intimate aspects of the lives of the laborer families. These included accounting books of laborer workdays (libro de rayas), records of worker debt and items given to or requested by huasipungueros as advances (libro de socorros and suplidos). These records were rich in detail, showing the goods that were available from the hacienda and, by extension, those that had to be acquired through alternative markets such as ceramic cooking and serving wares. Other records offered a glimpse of the health of the estate’s cattle population and the ways in which that meat (downed meat) was distributed to the
worker population when it succumbed to malnutrition or sickness. This became a frequent occurrence, including at the end of the nineteenth century.

Official estate documents were located in the Archivo Nacional del Ecuador (ANE) and the Archivo Histórico del Ministerio de Cultura y Patrimonio del Ecuador (AHE). The estate’s collection of documents was transferred to these repositories where they continue to be maintained. Documents were photographed at the archives and subsequently analyzed. Some were transcribed by the author and others were transcribed by project collaborator and Ecuadorian historian Enma Chilig.

Informed by the historical information relating to Hacienda Guachalá, I developed an archaeological approach that could provide appropriate data by which to assess the main research questions of this project. Broadly, this included pedestrian survey of multiple ecological zones of what would have comprised Hacienda Guachalá in addition to the main hacienda core in order to identify networks of rural mobility evidenced by historical material registers such as glazed ceramics. Material registers are specific artifact types that indicate particular human activities and, potentially, the time period of those activities. At the hacienda core itself, I tested the property with Ground Penetrating Radar (led by Sam Connell) and Auger Test Pits before conducting more intensive excavation units in spaces of interest. Survey and excavation of domestic terraces at Santa Marianita de Pingulmí provided key comparative data by which to assess the material registers recovered from Guachalá.

In these efforts, I joined the Pambamarca Archaeology Project (PAP), which had already accumulated significant collections based on field research in the area since around 2002. While the research aims of PAP were primarily focused on investigating the period of Indigenous resistance to Inca expansion in and around the high elevation fortress sites during the late
fifteenth and early sixteenth centuries around Cangahua, the material assemblages from those excavations included artifacts post-dating that period. Reviewing PAP field records and artifact assemblages was therefore an important first step.

I adopted the system of excavation used by PAP for completion of fieldwork in this project. The investigation of individual site areas are referred to as “operations” (OP) and this is the broadest denomination of the provenience string. At Hacienda Guachalá, for example, there are multiple operations based on the historical uses of different areas and the purposes of the investigations. Within each operation may be multiple “built divisions” (BD), which refer to discrete structures or groupings of structures. “Built spaces” (BS) are individual spaces within those built divisions. Individual units of excavation are referred to as “units” and excavations are generally carried out following natural stratigraphy with the “level” and “feature” (or locus) system of recording. The provenience strings for individual artifacts or contexts thus reflect this hierarchy of provenience recording.

The following outlines the specific approach taken in this dissertation. Chapters 5, 6 and 7 will elaborate on specific results of the archaeological fieldwork.

3.1 Establishing Material Signatures: Previous Collections

To situate the hacienda in the changing ecologies of the Cayambe landscape required an approach that worked at multiple scales to examine its sphere of influence and association far beyond the architectural core. As no systematic historical archaeology has been conducted in the region, many of the basic material registers that tie particular artifacts to specific historical periods were unknown at the start. It was not known if there were useful indicators of domestic sites (huasipungos) on the surface, for example. What sorts of material, ceramic or otherwise, might indicate the presence of laborer house sites? Because the physical homes would have been
made entirely of ephemeral natural building materials like *cangahua* (local mud brick), a surface indicator like a class of ceramics would help to identify potential sites in survey. The first step in these investigations was thus to analyze ceramics that had already been collected by PAP in survey and excavations across the entire area of the Pambamarca Fortress Complex and compare them to the few other historic collections available across Ecuador (Balanzátegui 2012, 2017; Chancay 2004; Jamieson 2000; Jamieson and Hancock 2004; Jamieson et al. 2013).

I began by searching artifact databases for historic material from all previous Operations, both excavations and surveys. The clearest indication of post-Columbian activity was the presence of glazed ceramics and each operation with glazed ceramics was noted and further investigated through its paper records. Field paperwork offered first-hand observations from the excavators or field technicians themselves from previous years, their initial impressions of the materials and their contexts, and specific provenience information by which to understand what sort of historic activity or occupation might have been identified. This could have ranged from dense concentrations of historic material to light surface scatters typical of temporary encampments. Once these contexts were identified, I corroborated the records with the artifacts themselves.

This process identified two main ceramic indicators of laborer occupation or activity (Figure 3.1). The first is a green or yellow lead-glazed coarse earthenware that is found throughout the area in varying densities. These have been identified in regions to the south like Riobamba and Cuenca as well as to the north, associated with a hacienda in La Concepción, Chota-Mira Valley (Balanzátegui 2017, 2018; Jamieson 2000). In the area of Guachalá, I associate these wares with the nineteenth and early twentieth centuries based on preliminary stratigraphic associations, though their production certainly spans broader periods, including their use even today.
The second class of ceramic indicators is a polychrome glazed ware that has also been recovered across the Ecuadorian highlands (Jamieson et al. 2013). The most common in this study area is a decorative palette of brown and green on a pink or buff background with a fine grained yellowish red (5YR 5/6, 5/8) paste, and a thin glaze with likely low tin content. Based on Neutron Activation Analyses of ceramics from his excavations in the Cuenca and Riobamba areas, Jamieson has suggested that this brown and green decorative palette belongs to a definable chemical group indicating that they were produced in Quito (Jamieson and Hancock 2004; Jamieson et al. 2013:207-208). While similar analyses will need to be undertaken to make

Figure 3.1 Typical ceramics of the study region, likely dating to the eighteenth-twentieth centuries. At top left, yellow lead-glazed, hand painted bowl (27C05.27.1). At top right, brown on buff, unidentified form (21C17.687.22). At bottom, green lead-glazed fragments, unidentified form (27C05.19.1).
definitive statements on the source and composition of the sherds found around Guachalá, it seems likely based on decorative similarities that these were produced in Quito, indicating some level of market access with this more distant urban center on the part of indigenous huasipungueros.

Based on a comprehensive review of PAP research records and artifact collections, a total of seven “Operations” outside of the hacienda core provided substantial evidence of some sort of significant historic occupation, including parts of the landscape from just outside the current property limits of Guachalá to the high elevation community of Chumillos (Table 3.1). Some, like OP2, were expected because this was the site of Hacienda La Compañía, which was another smaller Jesuit estate southwest of the town of Cangahua, between Guachalá and the high elevation pasture sites and annexed haciendas like Pambamarca and Quinchucajas. Others, like OP27, were more surprising since this was a small pre-Columbian fortified site or tambo waystation associated with the large fortress complex of Quitoloma (Figure 3.2). While analysis of this material is explained in more detail in Chapter 6, the material identified during this process helped at a very general level to understand the types of ceramics that would characterize the historic landscape of Cangahua. The ceramic assemblage was also similar across all of these Operations, including green and yellow glazed as well as brown and green on buff polychrome coarse earthenwares.

Evidence from historic estate documents and oral history interviews supported this broad network of activity across the three ecological zones of the Cangahua landscape that this initial material analysis indicated. The operations of an obraje, cheese production, and agricultural production required resources across the low, intermediate and high páramo zones. Hacienda Guachalá is located in the low altitude zone at around 2860 meters where dairy and cheese
production was, and continues to be, a major industry. The huasipungueros would primarily have lived in this lower zone where more numerous labor tasks were located as well as the intermediate zone between 3200-3500 meters in the area appropriate for potato, barley, beans, and some sheep pasture. Above 3500 meters, in the high páramo zone, there would have been primarily pasture grounds for sheep and cattle, which ultimately provided wool as a resource for textile production at the obraje and milk for cheese production. Account documents from the nineteenth century detail some of the exchange relations between Hacienda Guachalá and partners in these different ecological zones in providing the necessary resources. The recovery of historic material across the landscape in previous years of PAP research is therefore fully consistent with the broad constellation of socio-economic relations across the Cangahua landscape.

<table>
<thead>
<tr>
<th>Op Number</th>
<th>Name</th>
<th>Ecological Zone</th>
<th>Type of OP</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>Hacienda La Compañía</td>
<td>3200-3500 Intermediate</td>
<td>Excavation</td>
</tr>
<tr>
<td>27</td>
<td>Sombrero Tambo site</td>
<td>3500+ Páramo</td>
<td>Excavation</td>
</tr>
<tr>
<td>41, 44</td>
<td>Loma Catequilla Surface</td>
<td>2800-3200 Low</td>
<td>Survey/Excavation</td>
</tr>
<tr>
<td>51</td>
<td>Loma Sandoval Tola Site</td>
<td>2800-3200 Low</td>
<td>Survey/Excavation</td>
</tr>
<tr>
<td>52</td>
<td>Cangahua Salvage Excavations</td>
<td>3200 Intermediate</td>
<td>Excavation</td>
</tr>
<tr>
<td>53</td>
<td>(Comuna San Pedro)</td>
<td>2800-3200 Low</td>
<td>Survey</td>
</tr>
</tbody>
</table>

Table 3.1 Previous Operations conducted by PAP, indicating their respective ecological zones and the type of archaeological work carried out at each.
According to survey and excavation records, field notes, and consultations with project directors, the historic artifacts from these previous Operations were not in association with architecture or other indicators of historic domestic lots, except for OP2 (Hacienda la Compañía). They appeared to be part of activity areas that were more transitory rather than the remains of huasipungo house lots. In order to identify possible residence areas for more intensive excavation, additional pedestrian surveys were conducted across areas of Cangahua parish, particularly encompassing the area between Cangahua town and Hacienda Guachalá. These are described in the following section.

Figure 3.2 Map of study area with previous Operations conducted by PAP and other sites identified.
3.2 Landscape Survey

In conducting additional landscape survey or re-surveying areas, I attempted to accomplish several primary research goals: 1) locate dense artifact scatters in relation to surface architecture remains that would indicate huasipungo house lots; 2) identify the presence of historic glazed coarse earthenwares across the surrounding landscape; 3) determine potential re-use of pre-Hispanic sites during the colonial and Republican periods. In some cases, I surveyed areas that were part of previous PAP operations as the specific goals of this project were likely to highlight distinct features in the landscape that may not have been identified earlier.

The survey area was designed to include the areas between the center of the town of Cangahua and Hacienda Guachalá, a distance of approximately 4.5 kilometers. Survey of the valley of Santa Marianita de Pingulmí was essential to this project because local lore and oral historical accounts that I collected all indicated that the valley was inhabited by an independent Indigenous community with the fame of resisting Spanish colonization and Hacienda control (Pérez Garcés 2007). Several informants also noted that some huasipunguero laborers decided to flee the egregious labor arrangements with the Hacienda to settle in the valley of Pingulmí. Locating house lots there would provide key comparative information by which to assess differences in several social indicators between independent families and those that continued to work for the Hacienda.

Archaeologists understand that significant human activity often occurs “off site,” sometimes with little material residue (Dunnell and Dancey 1983; Ebert 1992; Wilkinson 1989). Recording artifact scatters across a survey area can help to elucidate some of the interconnections between people and places in the past. Much of this land is now inhabited by descendants of the huasipunguero families who managed to take control of the lands after
agrarian reform of the 1960s or by flower plantations. As a result, I adapted survey methods to a relatively densely occupied territory and to specific landscapes, often alternating between systematic transect walking and road or path observation. Key surface evidence identified included glazed surface ceramics like those recovered by PAP previously and described above, as well as evidence of prior habitation sites, which could include cangahua walls of varying states of preservation and distinct cuts into the surrounding bedrock into which homes would often have been built. Any remains of surface architecture of this sort were recorded with handheld GPS and photos, and artifact scatters generally including any concentration of 5 or more artifacts per meter were similarly recorded.

*Cangahua – Pitaná Bajo – La Estación*

This pedestrian survey comprised a route of 4.86 km between the main administrative center of Cangahua and the entrance to the community of Pitaná Bajo, as well as an additional 4.3 kilometers from there to the area known as “la estación.” The area included Operations conducted by PAP previously, such as OPs 41, 44, 51, 52, and 53 (Table 3.1). This area was significant because it encompasses the area between Hacienda Guachalá and the administrative center of Cangahua, as well as the descendant communities whose lands were gained in the agrarian reforms. Early twentieth century maps and oral history interviews indicated that many huasipunguero families would have resided in that area.

The survey team consisted of eight members, including myself, other archaeologists and student archaeologists. As throughout the region, this area is heavily occupied by small flower plantations, family farms, and cooperative farms in Pitaná Bajo. As a result, this survey was not conducted with the use of transects, but rather following a path adjacent to the main road to the north from Cangahua Center to Pitaná Bajo and then west toward “la estación.” The team and I
noted any potential terrace walls or surface architecture that could have pre-dated roughly 1950, though any characterization of temporal periods in the cangahua block-based architecture is inexact in the area. We recorded the GPS coordinates of any terrace walls, surface architecture or artifact scatters but did not collect any material.

*Santa Marianita de Pingulmí*

Oral history narratives had identified the valley of Santa Marianita de Pingulmí as an area with a distinct history relative to the area described above (Pérez Garcés 2007). Specifically, local stories asserted that this community had long been known for its fierce independence from both Spanish Colonial and later Republican period hacienda hegemony. The valley is located on the slopes below the large fortress site of Pingulmí, itself a powerful testament to the centuries long resistance struggles even before the arrival of the Spanish.

Aerial imagery suggested the possible presence of domestic terraces below the fortress site. In order to investigate the terraces and their possible association with either the fortress or the historic period settlement of the valley, we conducted a pedestrian survey through the valley, guided by several community members. The survey began to the northwest where the entrance to the community begins from the Panamerican highway and continued toward the southeast following both sides of the valley. As with the previous landscape survey, any surface architecture, artifact scatters or other features like agricultural land-use evidence were recorded with GPS units and photos. A more intensive surface collection was conducted later in conjunction with excavations once sites of interest were identified by this survey. The results of the surface collection and excavations are described in more detail in Chapters 5 and 6.
Pedestrian survey behind the Hacienda core on the current property of Hacienda Guachalá known as Molino Loma was essential for characterizing the use of space at the estate and defining contexts for excavation. This survey was conducted using full coverage with 1 meter transects across the area. It is an enclosed space as property of the current hacienda and surrounded by flower plantations. The process was intended to define concentrations of both artifacts and potential architecture. Surface artifacts were again observed and described in the field but not collected except for areas associated with OP19, which was intensively excavated. Surface architecture like terrace walls and small structures were recorded with handheld GPS units and, where appropriate, mapped with to-scale drawings.

**3.3 Geophysical Survey at Hacienda Guachalá**

Because Hacienda Guachalá has been a functioning estate continuously since its founding, surface evidence is often not a reliable indicator of past activity. Nevertheless, test excavations completed by PAP previously have shown that subsurface features like stone and cangahua walls are intact and can provide helpful evidence of activity areas and secure archaeological contexts. Since estate inventories describe the use of cangahua blocks and stone as the primary building materials since at least the eighteenth century, their presence is easily distinguished in density from the soil matrix around such features making ground penetrating radar a useful tool in their identification.

To date, geophysical prospection has been little used in highland Ecuadorian archaeology, mostly due to a lack of available equipment and specialists in the area. Recent research, however, at the archaeological sites of Cochasquí and Zuleta has employed intensive
geophysical methods since 2016 with a high degree of success in identifying subsurface features at tola (mound) sites (David Brown, personal communication, April 2018). Additionally, previous tests by Mary Sullivan and Larry Conyers with PAP demonstrated that, while not perfect, GPR could indeed provide solid evidence of subsurface cultural features in the project area at Hacienda Guachalá and the surrounding area (Sullivan 2007).

Led by Samuel Connell, and with the information provided by geophysical experts Larry Conyers and Mary Sullivan in previous years of PAP, we conducted a ground penetrating radar survey at the Hacienda core in 2016 using a GSSI GPR SIR-3000 system with a 400 MHz antenna. Informed by interpretations of archival estate inventories of the nineteenth century, we surveyed two sectors of the obraje area to determine prior sequences of built space, which could have included house wall foundations, workspaces, and latrines. Through testing, we determined that 1 nanosecond was roughly equal to a depth of 2 centimeters in the scans. This would indicate an anomaly in the GPR scans at 20ns, for example, to correlate with a feature depth of 40 cm below surface.

We carried out a Ground Penetrating Radar Survey in an area of the Hacienda that, according to historic documents, was a domestic and workspace of some of the obraje workers during the Republican Period (nineteenth century). It is referred to in estate inventories as the “Casa de Obraje.” Through the use of GPR and test units, it was proposed to locate evidence of architecture and concentrations of artifacts that reflect this type of domestic activity, including possible middens (trash deposits), latrines constructed in the nineteenth century, and possible living quarter foundations made of cangahua or stone.
In Built Division 2, Built Space 1 (BD2, BS1), in the area that corresponds to the casa de obraje in historical documents, we placed a grid measuring 25 meters (N-S) by 4 meters (E-W), to be surveyed with GPR at 0.5 meter intervals (Figure 3.3). The GPR detected a major anomaly between meters 16-21 (to the South) and this was assumed to be a wall or floor of stone or cangahua. Later excavations here confirmed this identification.

A second set of GPR scans was placed on the easternmost section of the northern area of the obraje (BD1, BS1), which was, at the time, being utilized for maize cultivation. Only two scan sections could be completed here as a result of its current use. We scanned two 0.5 meter transects at a length of 13 meters north-south along the easternmost wall of the sector. This location was the primary target to locate possible latrines due to their descriptions in the 1892

**Figure 3.3** GPR scans conducted at the obraje of Hacienda Guachalá. Each scan shows 2 meters width of space at five different depths below the surface (shown as different nanoseconds). GPR processing courtesy Sam Connell.
estate inventory. The scans detected an anomaly between meters 7-9 right against the eastern wall and the shape of this anomaly suggested the possibility that it could represent a latrine. These findings informed the excavations conducted here to ground-truth the GPR images, described in Chapter 5.

3.4 Auger Test Pits

In order to sample of a much broader area of the hacienda core I integrated a component of auger test pits, using a 20cm diameter, cylinder hand auger. This procedure had several objectives:

1. Sample a broader area of the hacienda than would be possible with either shovel test pits or small test units.
2. Attempt to locate evidence of the latrines and other possible middens.
3. Sample the stratigraphy across the hacienda site.
4. Sample material densities and perhaps distinguish activity spaces by comparing artifacts across the hacienda area.

The ATPS were completed in the areas of three OPS: 21, 66, 70 (Figure 3.4). ATPs in OP66 were located just north of the section of the plaza in which the administrators would have had their living quarters. Seven of the nine pits could not be dug to bedrock as they hit obstructions. Two were excavated to 110-120 cm. ATPs in OP70 were conducted just south of what would have been the *hacendado* residence. While this part of the hacienda was reconstructed within the last few decades, it was hoped that the stratigraphy behind it remained undisturbed. Unfortunately, the ATPs revealed that the area all along the structure had been dug up to place piping for the hotel.
ATPs in OP21 sought to test the upper terraces above (east of) the obraje. These consistently hit either brick around 60 cm, major root disturbance, or reached to about 110cm at what may have been bedrock. A line on the upper-most terrace had very shallow ending depths of 22cm max, which makes sense as the highest point of the slope. While these ATPs did not reveal contexts to investigate with horizontal excavations, they did identify disturbed areas to avoid. As a strategy, these ATPs were only minimally successful. They did enable sampling of a broader area and additional stratigraphic information but did not locate evidence of latrines or middens.

Figure 3.4 Overview and details of auger test pit locations at Hacienda Guachalá. (Map created by author.)
3.5 Excavations at Hacienda Guachalá and Santa Marianita de Pingulmí

The excavation strategy for this project was based on preliminary survey work, historical documentation and oral history as described above. Excavations were planned so as to acquire the material data necessary to address the primary research questions. This required the investigation of contexts not just at the productive and domestic nuclei of the hacienda, but also huasipungo house plots away from the core and comparative contexts of Indigenous households in the independent community of Santa Marianita de Pingulmí. Just as contemporary landscape use posed challenges for survey strategy, excavations had to be completed in targeted areas free of disturbance.

As a result, excavations were concentrated in three primary areas (Figure 3.5). First, 13 units of varying sizes were excavated in the Casa de Obraje to expose living surfaces of this mixed domestic and workspace at the center of hacienda life. This was referred to in project nomenclature as Operation 21. Second, 11 units of varying sizes were excavated on a hill, known as Molino Loma, behind the mill complex of the hacienda where a potential huasipungo house lot or general laborer domestic context was identified. This was referred to as Operation 19. Finally, three excavation units of 1m x 1m, in addition to systematic surface collections were completed at a house lot along domestic terraces in the Pingulmí valley. This is referred to as Operation 78.
Excavations followed the use of unit, level, feature and locus method of recording and followed natural stratigraphy in all cases. Units were generally oriented to surface architecture or subsurface anomalies rather than strictly to cardinal directions. Unit numbers were also designated in the order that each was initiated, per operation number. Where soil softness permitted, units were excavated by trowel, hand picks and brush, though the presence of hard-packed cangahua soil often required the use of larger picks. All excavated soil was screened with quarter-inch screens and soil samples were taken (unsieved) from features and soil loci that could benefit from further botanical analyses, such as hearth features and soil associated with stone

**Figure 3.5** View looking south with the three main excavations operations (OPs) compared in this dissertation. (Map created by author with Google Earth aerial imagery.)
floors of living surfaces. Botanical analyses have not been completed in time to include in this dissertation project but will provide important additional information regarding local vegetation and plant use. Each level and feature was recorded with its own recording form, which included opening and closing elevations from local datum points, soil texture and Munsell color based on 2009 edition (2013 printing) of the Munsell Soil Color Book. Start and closing of levels and features were also photographed and drawn and profiles of at least two sides of each unit of excavation were drawn upon completion of each unit.

3.6 Artifact Collection and Analysis

Artifacts recovered in the process of excavation were separated by material in the field per level or feature. These categories of artifacts included ceramics, bone, metal, glass, lithics, shell, and special finds. Once a particular level was closed in the field, the artifacts were washed and dried in the lab. Artifacts were sorted and all relevant attributes were recorded in a database specifically designed in Microsoft Access for this project.

Ceramic analysis followed established techniques for the field generally (Rice 1987; Shepard 1956) as well as sources specifically concerned with Spanish colonial (Deagan 1987) and historic collections in Ecuador specifically (Balanzátegui 2017). Lab analysis recorded vessel class, paste type, paste color, size of temper inclusions, thickness, interior and exterior surface finish or treatments, decorative techniques and motifs and presence of hearth blackening. Diagnostic rims were also assessed for the percentage of vessel, vessel diameter, rim morphology, and those presenting at least 5% completeness were also drawn as rim profiles (see Appendix B). These attributes were chosen for analysis to address the main research questions of the project related to how everyday objects act as a medium of social activity and social ties. A
minimum number of vessels (MNV) analysis was conducted to provide more informative data regarding the use of ceramics in each context (Voss and Allen 2010).

Lithic and faunal analyses were conducted by specialist collaborators in Quito. Eric Dyrdahl and Isaac Falcón (2020) carried out the lithic analysis at PUCE while Ibis Mery (2020) conducted the faunal analysis. While lithic analyses are largely absent from historical archaeological contexts, particularly in Ecuador where this work is still relatively rare, these materials are an important component of the archaeological assemblages. Lithic artifacts from this project show their continued use in historic periods. In fact, some lithic objects are still the preferred options today for tasks like grinding grains and other food preparation processes. In conducting the lithic analysis, Dyrdahl and Falcón utilized a classification system that assesses artifact function based on both morphology and use-wear analysis. This system only establishes artifact function when use-wear patterns can be analyzed in detail, rather than assuming function based solely on morphology (Dyrdahl 2017). This process yields a comprehensive understanding of how lithic raw material was reduced and utilized in its respective contexts.

Regarding the lithic materials analyzed in this project, the raw materials included obsidian, andesite, basalt, slate, and limestone. In total, these raw materials were utilized as chipped stone artifacts like flakes and blades, as well as groundstone tools such as manos and morteros. Round objects without clear evidence of use were classified as “cantos rodados.” After each artifact was classified, they were size graded using a laminated sheet of circles with varying diameters. Circles of the following sizes were utilized: 1.0 cm, 1.5 cm, 2 cm, 2.5 cm, 3 cm, 3.5 cm, 4 cm, 4.5 cm, 5 cm, 5.5 cm, 6 cm, and 7 cm. Any that did not fit within those measurements were measured with a caliper. The ultimate goal of the lithic analysis was to assess the process by which lithic tools were produced and utilized in these historic contexts. The system of
analysis used here by Dyrdahl and Falcón provided important data toward those ends and is described in more detail in Chapter 6.

The faunal analysis was conducted with the specific goals of yielding information related to foodways and to situate the various roles of animals in hacienda life. The analysis was centered in anatomical and taxonomic identification of specimens using a comparative osteological collection from the Salango-Manabí Community library. Other osteological guides served as references (See Mery 2020).

The identifications of faunal specimens were quantified for total number of remains, number of individual specimens (NISP), and minimum number of individuals (MNI). The analysis conducted by Mery recorded natural and cultural alterations to the remains incurred in the processing of the animal or as natural processes during or after the animal’s life. These included cut marks, thermal alterations (indicating manner of food preparation or other uses), and natural, non-anthropogenic effects. Faunal specimens were also examined to determine the age at death of the animal, which can often help to determine particular uses of domesticated animals, particularly animals like cattle and sheep that are common in the assemblage. Additionally, determining proportions of the anatomical parts of animals aided in analyses of foodways and potential economics of access to and use of certain cuts of meat. The results of the faunal analysis are discussed in detail in Chapters 6 and 7.
CHAPTER 4: HACIENDA GUACHALÁ – TRANSFORMATIONS OF A SOCIO-ECOLOGICAL LANDSCAPE

The hacienda/plantation complex ushered in massive socio-ecological transformations across the Americas. Along with other early extractive industries like mining, this new land tenure system fundamentally transformed the political ecology of the hemisphere. This involved new economic logics of extraction and accumulation for global trade, new racialized and coercive labor systems and socio-political hierarchies, and rapid alterations to the flora and fauna that constituted local landscapes and social ecologies. The significance of these changes in creating the conditions for economic, racial, environmental, and social inequities across the hemisphere today is conveyed in academic literature through the growing usage of the term “plantationocene” as an alternative to Anthropocene (Haraway 2015; Moore 2015; Sapp Moore et al 2019; Tsing 2015; Tsing et al. 2021). The region of Cayambe, and Hacienda Guachalá specifically, is an important case study for understanding how these processes manifested locally, how Indigenous communities navigated these transformations, and how these dynamics created the infrastructures for contemporary struggles today.

This chapter examines historical research and primary estate documents from Hacienda Guachalá to trace this history as understood through the documentary record. It begins with the geographic context of Cayambe, followed by a description of a long history of social and political contestation in the region even prior to European arrival. The analysis highlights several important socio-ecological transformations in the Cayambe region that speak directly to the research questions of this dissertation:
1) First, the historical record speaks to a demographic upheaval ushered in with Inca expansion during the early 1500s, which influenced the course that early Spanish colonization took just three decades later.

2) Second, during the early colonial period from about 1532 to around 1680, the Spanish inaugurated new forms of land tenure and labor relations along with the introduction of new plants and animals that would remake the Cayambe landscape and transform local ecologies. The hacienda system in Cayambe intensified toward the end of this period, between about 1650-1680, and laid the foundations for a third period of transformation.

3) With the dominance of the hacienda and its system of coerced “concierto” labor, the northern highlands of Ecuador become an important center for the hacienda-obraje complex after around 1680. This agro-pastoral production further intensified the changes to local ecologies, particularly through the massive growth of grazing sheep populations and intensified production of barley and wheat in addition to native crops.

4) The introduction of eucalyptus forests to the region at the end of the nineteenth century marks a fourth important ecological transformation and was intended as a corrective to the ecological degradation and erosion wrought as a result of previous land use patterns.

5) Finally, the growth of cattle and dairy production during the early twentieth century, and the rapid turn to export monoculture of cut-flowers after agrarian reforms beginning in the 1980s, mark important continuations of these ecological transformations and their enduring consequences today.
Hacienda Guachalá was a major driver of the above historical transformations that affected the entire Cayambe region. This chapter therefore turns specifically to the property’s history to examine the relationship between ecological change and the everyday lives of the hacendados and varied classes of laborer residents of Guachalá as known through the archival record. Physical inventories and other documents from the hacienda over three centuries help to develop a tangible picture of how the property itself was organized, the everyday materiality of hacendado (landowner) life at the estate, how it altered all three ecological zones that it occupied, the accounting of huasipungo labor, and evidence for the relationships of dependency and food insecurity that still plague the region today.

4.1 Cayambe: A Contested Landscape

The canton of Cayambe covers an area of roughly 1,350 square kilometers crossing the equatorial line (Figure 4.1). It lies in the shadows of the imposing volcano Cayambe from which the canton takes its name. In fact, the highest point on the entire equatorial line is on this volcano at an altitude of 4,690 meters above sea level. The canton is comprised of diverse ecological zones, however, from 2,400 meters above sea level to 5,790 meters at the peak of Mount Cayambe (Becker and Tutillo 2009: 12). These differences in altitude and climatic niches have long permitted the production of diverse products. The warmer subtropical climates of the lower valleys provide conditions necessary to produce fruits, sugar cane and coffee. Above 2,500 meters altitude dairy products and export flowers dominate the Cayambe economy and landscape while the rich volcanic soils of slightly higher elevations bear the crucial harvests of maize, potatoes, barley, wheat, beans, onions, and other tubers and cereals. Finally, in the highest zones known as the páramo, dispersed communities withstand the high winds and cold nightly temperatures to take advantage of tundra-like pasture lands (Knapp 1991) (Figure 4.2).
Figure 4.1 Overview Map of study area with labels of cities mentioned in this chapter in upper right map frame. (Map created by author with ESRI map layers.)
Figure 4.2 Two photos of the middle and upper ecological zones of the Cangahua region, Cayambe. Top photo is taken from the high-altitude Quitoloma archaeological site toward the Chumillos Central community showing the upper reaches of the middle zone and distinct páramo grazing line where agricultural production ends. Bottom photo taken from the community of Paccha, also showing active farmlands of the middle altitude zone (Quinoa in the foreground) and the high páramo zone in the background. (Photos by the author.)
For millennia, residents have adapted to these diverse ecological zones through adaptive socio-political configurations. Prior to Inca northern expansion in the late fifteenth century the area was inhabited by the Caranqui-Cayambe population or the *Pais Caranqui*, a loosely-defined reference to what were likely several semi-autonomous polities connected by a shared ethnic identity (Bray 2008, 2015). Bray suggests that these semi-autonomous groups, including the Caranqui, Otavalo, Cayambe and Cochasqui, likely existed as part of a heterarchical political organization, “with power being exercised along different dimensions and areas of overlapping authority” (Bray 2008: 529). Ethnohistoric and archaeological evidence suggests that these groups may have shared some sense of cultural identity based on common artistic traditions, levels of technological expertise, a common lingua franca, and monumental earthworks mounds (Athens 1992; Bray 1991, 2008, 2015; Cieza [1553] 1962: 137; Plaza 1976).

Large earthen mounds known in the area as *tolas* are distributed across the extent of Caranqui influence. The tolas present either a hemispherical or quadrilateral shape. The smaller hemispherical mounds can range between 3-6m in diameter and 1-2m in height while larger examples measure over 30m in diameter and 5m in height (Bray 2008: 531-532). The smaller tolas are typically sites of funerary rites while the larger hemispherical mounds are thought to have been locations of chiefly houses but also may have associated burials. Construction of the hemispherical mounds appears to have been a social practice established by at least 700CE, while the truncated pyramidal mounds were a later development marking the beginning of the Late Period (1250-1525 CE) (Bray 2008: 531-532). These larger pyramidal mounds, sometimes with ramps, could measure up to 90m in length and over 10m in height. While still relatively under-researched, archaeological evidence generally suggests that these were settings for social and ceremonial activities often involving feasting (Athens 1992; Bray 1991, 2015; Salomon
Larger mound sites likely served as occasional ritual focal points for populations dispersed across the landscape in smaller hamlets rather than in nucleated settlements (Bray 2008: 531; Salomon 1986).

But these communities, or *llactas*, must have been connected through other social mechanisms besides ritual occasions. Frank Salomon (1986: 45) uses the word *llacta* (or *llajta*) to refer to the Quichua-origin concept of “a group of persons sharing hereditary rights over certain factors of production (particular lands, the labor of certain people, and specific tools and infrastructures), and recognizing as a political authority a privileged member of their own number.” These individual *caciques* were leaders of the scattered villages and played a central role in activating networks of social and economic relations, including the exchange of sumptuary goods from more distant locales. Salomon (1986, 1987) has also described extensive evidence for a class of specialized long-distance traders known as *mindalaes*. Sponsored by individual caciques, they likely served to weave together a diverse ecological and cultural landscape by enacting the exchange of prestige goods across ecological zones.

The socio-political ties and mechanisms that bound otherwise geographically dispersed populations in the Caranqui-Cayambe region set the stage for a relatively prolonged and fierce faceoff with the late Inca imperial push into their lands. In the Cayambe area, at least 18 *pucaras*, or hilltop forts/installations, form what is known as the Pambamarca Fortress Complex. These high elevation sites form a sort of battle perimeter, with a line of sites that indicates prolonged struggle and heavy resistance against the Inca push northward into Caranqui-Cayambe territory (Anderson 2014; Connell et al. 2019; Plaza 1977). Most sites contain a series of ringed, concentric walls and baffled entrances characteristic of military activity. Some also contain ceremonial platforms and structures, which complicate simple military interpretations (Anderson 1986).
Ongoing research has revealed architectural and ceramic-based evidence suggesting that some sites were constructed and utilized by local groups, others perhaps by Inca forces, and many likely changed hands during and after conflict (Connell et al. 2019).

As nearly two decades of conflict came to an end by around 1505, Inca forces began to assert control of the new territories as they had throughout their rapidly expanding empire. They moved colonists known as *mitimaes* into the Cayambe region in a demographic shift that Segundo Moreno refers to as an early example of *mestizaje* in Ecuador (Moreno 2008). Historian Galo Ramón provides further detail from early administrative records and ethnohistoric documents that reveal a population decline in the Cayambe region as a result of the prolonged wars against the Inca. In addition to the thousands of Kayambi soldiers killed in battle, chronicler Espinoza Soriano reported that 1,000 Kayambi domestic units were sent away to Ayacucho, Peru to work the coca fields (Ramón 1987: 99-100). Additionally, early accounts narrate the escape of an unknown number of Kayambi families to more isolated sites like Oyacachi, and yet others were enrolled in the Inca imperial army and sent to distant outposts (Ramón 1987: 100). It is unknown how many additional foreign mitimaes were then brought to Cayambe by the Incas to replace the declining population numbers. Nevertheless, it is clear that by the time the Spanish made their own incursion into the northern highlands of Ecuador in 1534, the people of the Cayambe region were already navigating changing configurations of ethnic and political power.

4.2 Early Colonial Period Transformations of Land, Labor, and Ecologies (1532 - ca. 1680)

Just decades removed from resistance efforts against the Inca forces, Sebastián de Benalcázar led a new wave of Spanish forces northward toward Cayambe in 1534. As was common throughout newly possessed lands of the Spanish empire, the Crown quickly dispatched administrators and religious officials to record demographic numbers and accounts of natural
resources to be appropriated for the new colonial economic market. The Spanish began to take physical control of the territory through the system of encomienda, which was designed to distribute grants of Indigenous labor (and land) to powerful Spanish men. It is not entirely clear how they decided to divide the region, whether it followed the existing socio-political units that resulted from Inca re-organization or perhaps strategically to distribute lands encompassing multiple ecological production zones. Regardless, Pedro Martín became the first encomendero of Cayambe in 1535, followed by his son Alonso Martín de Quesada in 1548 (Ramón 1987: 92). By this time, new flora and fauna were already unleashing significant transformations on local socio-ecological relations that would re-shape life in Cayambe.

Within a single generation, many residents of the Cayambe region experienced major changes as a result of consecutive Inca and Spanish colonization. By the middle of the sixteenth century, these rapid changes left the people of Cayambe fighting to navigate significant transformations in socio-political organization and local ecologies long relied upon for subsistence and livelihoods. European plant and animal domesticates began to re-make the local landscape and shift configurations of power. These new socio-ecological relations formed the substrate for agrarian life in the region for centuries to come.

After the major demographic decline and ethnic re-constitution leading up to and including Spanish arrival in Cayambe, between 1589 and 1645 there was a slow rebound in population growth in Cayambe (Ramón 1987: 104-105). At the same time, colonial market forces subjected local economies and cultural practices to new restrictions and reformulations. As the Spanish took over land from across the various production zones, local ethnic economies were left to adapt their forms of production and adjust to fulfill their tributary roles to the new Spanish encomenderos and hacendados.
During the first several decades after Spanish arrival, tribute payments by Indigenous residents to their respective encomendero or to the Spanish Crown generally included products like gold, cotton textiles, maize, potatoes, beans, hot pepper, coca leaves, salt, and both native animal species like deer, rabbit and birds, as well as introduced varieties like pork, cattle, chicken and hens (Ramón 1987: 123-125). During this early period, it appears that much of this tribute production was conducted according to already existing socio-economic systems. Indigenous caciques maintained their influence by coordinating the production of local products like cotton and the hunting of native animals. They oversaw the transportation of these products to market, their concession as tribute payment, or further manufacturing of raw materials. Over time in Cayambe and across the highlands, the products given as tribute increasingly reflected European influence, including the transition from cotton to sheep wool textiles, and growing markets for imported grains like wheat and barley during the early 1600s.

An important reason for the transition away from the encomienda system in favor of the hacienda complex was the Spanish desire to integrate Indigenous production more fully to the colonial market system. Rather than allowing the continued economic and political influence of local caciques to regulate the production and distribution of goods, the hacienda system would cut off those sources of social and political power on the part of local caciques (Assadourian 1982; Ramón 1987:131). Thus, by the early 1600s a shift to the use of European sheep and newly formed obrajes, or textile workshops, set in motion major social, political and ecological changes. The use of wool rather than cotton benefitted rising hacendados who owned these herds and also profited the various religious, Crown, or private owners of the obrajes. This trend effectively used the instruments of colonial market economics and foreign domesticates to limit the power of local social groups.
The consolidation of lands into hacienda estates that encompassed multiple ecological zones thus intensified over the course of the seventeenth century in Cayambe. To accommodate the growth of the hacienda system and efficient production, Spanish officials encouraged the production of agricultural grains, cattle, sheep, cheese workshops, and obrajes within one single estate. Avoiding the need for longer distance transportation over difficult terrain, this model promoted the occupation of multiple zones from valley floor to high páramos, and the massive growth of cattle and flocks of sheep that transformed physical landscapes, cultural foodways practices, and subsistence. This was particularly true of the development of hacienda-obrajes, which could simultaneously produce the raw wool and finished textiles, as well as the subsistence goods necessary to feed the growing labor force of indebted Indigenous servitude.

The development of hacienda-obrajes in the northern Highlands, beginning more intensively during the period around 1650-1680, propelled major transformations in labor organization and environmental conditions that continue to shape life in places like Cayambe today. The transition from the encomienda to the system of hacienda was a major impetus to these changes, particularly in the organization of labor. Galo Ramón (1987) has shown that in Cayambe during the first few decades of the seventeenth century, local caciques and ayllus (community formations) still maintained some negotiating power and ethnic-based economies to comply with tribute requirements. In 1647, for example, the 7 caciques representing over 80 Indigenous residents from 13 ayllus renewed an agreement with the landowner of Guachalá, Francisco Villacís, to graze his sheep on their own communal land. In return for doing so, they received 100 pesos per year and the organic benefits of the manure on higher altitude fields that they were now cultivating (Ramón 1987: 172). This type of agreement had been ongoing for decades, maintaining the organizational political power of local leaders.
But by around 1650, with the consolidation of haciendas, the balance of power between hacendados and local residents began to shift. Instead of negotiating with caciques, hacendados increasingly dealt with families or small familiar groups directly. The hacendados increasingly re-utilized an old labor institution known as gañanía, in which they gave a usufruct plot of land on the hacienda in which to pasture the hacendado’s sheep and grow their own subsistence crops around a home. Thus, as hacendados usurped more land for their own diversifying production across ecological zones, the families located on those same lands were able to stay in those ancestral lands but at the expense of being indebted to the hacendado who maintained legal ownership of the territory (Oberem 1981: 301; Ramón 1987: 176-177).

It was common for the Spanish to appropriate existing institutional labor forms throughout Latin America. Use of the rotating system of forced labor called the mita, which was first introduced as an imperial strategy by the Inca, provided the labor regime that propelled the massive mining operations across the Andes (Corcoran-Tadd and Pezzarossi 2018; Jacobsen 1993; Powers 1995; Smit 2018). This strategy was also utilized to create labor reserves for the obraje textile sector across Quito and the Ecuadorian highlands, and southern Peru. The system of gañanía is a similar example of tapping into a labor relationship that likely was somewhat unique or local to the cacicazgos of the Cayambe region.

While this system seems to be the precursor of the concertaje (later called huasipungo) system that institutionalized abusive and coercive labor relationships based in debt, the ability to remain on one’s ancestral land may have been a key ingredient to forging ties of community strength. Faced with the decision of mita (rotative labor on different haciendas) or remaining on an estate located in their ancestral lands, it appears most were able to, and chose the latter. Of 325 individuals attached by labor obligations to Hacienda Guachalá in 1685, 277 of them were
from the ayllu Guachalá (Ramón 1987: 222). This pattern in the region suggests that in this process of hacienda labor re-organization to the system of concertaje, Indigenous families also seem to have negotiated their ongoing residence in lands familiar to them with the advantage of maintaining community ties and social networks.

4.3 The Rise of the Obraje in the Northern Highlands (ca. 1680 – ca. 1820)

The first major period of transformation in Cayambe during the early colonial period between about 1532 and 1680 involved the introduction of new forms of land tenure, new plant and animal species, and forms of labor that accompanied the major growth of the hacienda system. Those developments created the foundations for a second major period of socio-ecological transformation and intensification in the region as hacendados amassed large tracts of land and a labor force capable of driving the massive growth of hacienda-obrajes in Cayambe and the northern Highlands. In Cayambe, colonial visita (census) documents show that by the year 1685, 78% of the Indigenous population was ensnared in these relationships with haciendas (conciertos) while 20% were recorded as “free,” and less than 1% were recorded as members of religious confraternities or as serving local caciques (Ramón 1987: 177). This massive shift to the power of haciendas in Cayambe, and Ecuador generally, contrasts with other areas of the Andes where Indigenous communities maintained relatively more power alongside haciendas (Larson 2004). These newly subjected families were largely responsible for the shepherding of growing herds of sheep whose wool was transported to the south for textile production during the seventeenth century in places like Quito and Latacunga. This was part of a broader transformation of local ecological relations that enabled the further development of the region as a textile center.
The explosive growth in the numbers of sheep and cattle as well as changing patterns in the cultivation of grains like barley quickly positioned Cayambe as a major supplier of these goods for Quito markets. Galo Ramón has estimated that by the end of the seventeenth century roughly 100,000 sheep were consuming the grasses across the Cayambe landscape. In 1652, the hacienda of Pambamarca, a higher altitude estate that would later become part of Hacienda Guachalá, had 6,149 sheep. In addition to wool production, between 1640 and the first few years of the eighteenth century, Cayambe increasingly raised the cattle that fed rising demand for beef in Quito. Based on his analyses of the Actas de Cabildo records from those years, Ramón has shown that eight of the twelve biggest cattle producers raised livestock on properties in Cayambe (Ramón 1987: 190-192) (Figure 4.3).

In addition to livestock, hacendados also re-oriented agricultural production to supply major products for the Quito market. The four major products included the two native crops of potatoes and maize and the two introduced cereals of barley and wheat. Barley was a particularly important addition to the local agricultural repertoire because it had several major advantages. First, it could be grown both in the lower valleys and at higher altitudes in the páramo. It required comparatively much less fertilizer for successful growth and therefore less labor and resource input. Once cultivated, barley was easily transported and conserved and was used for both human consumption and the fattening of livestock (Ramón 1987: 195). Barley is among the most adaptable of food crops and, along with wheat, had important impacts on Andean agriculture since the earliest years of European colonization. The fact of this trend is supported by evidence from archaeological contexts in places like the colonial city of Riobamba in the southern highlands of Ecuador prior to 1797 (Jamieson and Sayre 2010). Chroniclers like Cieza de Leon and Garcilaso de la Vega described the use of both crops and their utility for providing
European-style breads and nutrient-rich porridges for early colonizers across the Andes (Jamieson and Sayre 2010: 215). The use of European animals like sheep to fertilize Eurasian crops that were adaptable to multiple ecological zones contributed to the long-term success of these crops and their ongoing, though complicated, use today in the Cayambe region is described further in Chapter 8.

Two major changes in Cayambe by the turn of the eighteenth century had thus primed the region to become a hacienda-obraje center of the Andes. First, Spanish officials and landowners had succeeded in tying nearly 80% of the Indigenous population to the area’s haciendas in emerging forms of debt. This had the effect of ensuring a large labor force as well as diminishing the political and economic power of Indigenous leaders. Second, the introduction of cattle, sheep, barley and wheat rapidly degraded and eroded the valleys and grasslands and initiated more intensive agriculture in increasingly high-altitude zones that were previously uncultivated.

Figure 4.3 Photo of cattle in a corral at nearby Hacienda La Merced, ca. 1930. AHE, 84.F0031.12.
By the end of seventeenth century, the lower valleys were dominated by corn, wheat, and cattle. In the higher páramos, sheep, cattle, tubers (like potatoes), and barley pervaded the landscape.

These century-long changes in labor organization and ecological transformation created the infrastructure by which the hacienda and the textile sector dominated life in the region, beginning with the shift of obraje production from Quito. The same “ecological revolution” that transformed Cayambe had been in place in Quito and the central highlands since the earliest Spanish settlement (Phelan 1967: 67). The Spanish quickly introduced the same wool-producing Merino sheep into the fertile mountain valleys around Quito. This, along with plentiful Indigenous labor, created the conditions for what John Leddy Phelan referred to as the “sweatshop of America” (Phelan 1967: 66-67). Lacking the rich mineral resources of other areas of the empire, Quito developed as a major producer of the European-style textiles that could supply those mining centers, while enriching the earliest encomenderos of Quito. Phelan’s research showed that by 1585, only around 30 years after Spanish arrival, there were 150,000 head of sheep in the valley of Quito, and around 600,000 sheep in the more southerly valleys of Latacunga and Riobamba.

Obrajes in the Audiencia of Quito shipped the textiles across the Viceroyalty of Peru to clothe Spanish colonists through the increasingly abusive labor management of the Indigenous residents. Obrajes were subject to constant political bickering and uneven regulation, leading to both “legal” and “illegal” or unlicensed obrajes. As such, the labor was supplied either as rotating laborers (mitayos) by Indigenous caciques or as coerced laborers drawn into debt.

2 In A Plague of Sheep, Elinor Melville (1997) discussed similar phenomena in the Valley of Mezquital, Mexico, where Old World grazing animals like sheep transformed New World ecosystems. Melville describes the multi-faceted process whereby European conquest was as much biological and ecological as it was political as sheep helped lay the foundations for colonial rule in the decades after 1530.
peonage. The abuses of these workers were so horrid that the Spanish Crown and its administrators had to establish several codes of regulation to protect Indigenous workers, without much success (Andrien 1995; Corr 2018; Cushner 1982; Ortiz de la Tabla 1977; Phelan 1967; Tyrer 1976). A decree from the Crown in 1680, for example, demanded that all unlicensed obrajes be demolished, no new ones founded without Crown approval, and instituted a ban on child labor (under 17) and imprisonment for debt in obrajes (Nicholas Cushner 1982: 90-91; Phelan 1967: 77). Nevertheless, decrees were suspended, the abuses continued, and the Indigenous labor in obrajes of various sizes and forms across Quito and the Central highlands clothed the population of the Viceroyalty of Peru.

In contrast to the major textile production sector of Quito, the northern highlands only had two large obrajes at the end of the 1600s, those of Otavalo and Peguche (Ramón 1987: 183). The large landowners in Cayambe at that time largely shipped the wool, agricultural goods, and meats to Quito, even though many also had small obrajes in Quito that they provisioned from their operations in Cayambe. But with the consolidation of Indigenous labor in the area that had finally been wrested away from the control of Indigenous economies, it soon made more sense for these landowners to install obrajes at the centers of their Cayambe haciendas where the raw material was already being produced.

The installation of an obraje at Hacienda Guachalá in 1700 is a major example. After consolidating properties in the area of his estate at Guachalá, including the pasture-rich páramo of Hacienda Pambamarca, Antonio de Ormaza formally requested and purchased a license for an obraje at Guachalá in 1700 (AHE, SG0002.10, 1646-1723; Ramón 1987: 186). Despite already owning two obrajes outside of Quito, Ormaza consolidated the operations on a single, vertically organized estate that was quickly becoming the size of an entire parish. In addition to Guachalá,
new obrajes were founded around the same time at Yaruquí, Cotacachi, La Laguna, Cangahua and Cayambe (Ramón 1987: 186). With the absence of any major precious metals and mines in the region, cheap labor was devoted to the production of textiles and the agricultural and livestock products necessary for its functioning.

As a result, it appears that Indigenous individuals and families also began to migrate to Cayambe from highland areas in the north and south. Census records from 1720 reveal that nearly 50% of the population in Cayambe was comprised of individuals (2,292 people) of outside origin (forasteros), coming from Pasto, Ibarra and points north or from Latacunga, Riobamba, and areas of the southern highlands (Powers 1995: 76-76; Ramón 1987: 222-223). At Hacienda Guachalá, specifically, 20% (n= 82) of the Indigenous work force was comprised of individuals from Latacunga (n=66), Riobamba (n=2), or other unknown areas (“vagabundos,” n=14) in 1720. Because almost 90% of these outsiders in Cayambe were listed as conciertos, or attached to hacienda estates, it is possible that the hacendados (both private and religious Orders) intentionally drew experienced obraje workers from declining workshops in the south to labor in the growing obraje sector of Cayambe (Ramón 1987: 108-110). Many hacendados could simply close their operations in the south and bring experienced laborers with them to new operations in Cayambe.

The introduction of individuals of outsider status likely presented challenges to their ability to integrate into existing social networks. This is a classic problem in the development of capitalist formations across time, as markets force the uprooting and migration of peoples away from their home communities. Documentary evidence based on the tracing of family names over generations suggests that over time they were able to forge important new ties with local
residents. In some respects, Indigenous families may have begun to re-create pre-colonial political hierarchies within the hacienda space.

In tracing the frequency of last names in Cangahua (by number of domestic units) over the course of this major population shift through census records from 1685, 1720, and 1804, two points become clear (Ramón 1987: 227-229). First, the most powerful familial groups in 1685 continued to be powerful in 1804 (Farnango, Ulcuango, Imbaquingo, Lalchimbaquin). The position of mayoral (usually Indigenous labor supervisors) on the haciendas may have become essentially the equivalent of an ayllu leader. In 1685, the Hacienda Pambamarca had two mayorales, one whose ayllu of origin was the most common on the estate (Quinchoango) while the second mayoral came from the second most common ayllu represented there (Cayambes) (Ramón 1987: 226). Second, the diverse kin groups, or family names, that existed in 1720 as a result of migration from the south rapidly incorporated into webs of kin in Cangahua. The number of family names shrunk from 105 in 1720 to just 89 in 1804, three generations later.

Together, these data suggest that Indigenous families rapidly adapted to the configurations of power in these hacienda spaces by reconstituting kin networks. These kin networks may even have been forging a hierarchy of Indigenous power based on ayllu origin within the space of the hacienda. It appears that after the hacienda system cut off the political power of Indigenous groups, a new organizational apparatus emerged in the haciendas based in last names and ayllu origin. These became, in the words of Ramón (1987:224), the “new cells of the base of resistance, true rhizomes of small familial systems united by symbolic and blood kin ties, that rearticulate communitarian institutions to adapt them to the new organizational system” of the hacienda.
A giant among these new hacienda-obrajes in the Cayambe area was Hacienda Guachalá. This estate provides an important study in the ways in which these transformations took place and how Indigenous families navigated these circumstances. The documentary records of Guachalá provide primary evidence in the following analysis, contextualizing the archaeological analyses that follow.

4.4 Spinning New Threads of Power: Situating Hacienda Guachalá

The development of Hacienda Guachalá during the colonial period was a key force in the broader history of the Cayambe region and an illustrative example of the transformative force of the hacienda-obraje system. The land that ultimately became Hacienda Guachalá began as grants of over 1,000 hectares in size around 1580 to individual officials (Bonifaz Andrade 1995; Ramón 1987: 237). By then the area was a dynamic cultural landscape as a result of the rapid succession of imperial advances by the Inca and Spanish forces. Based on ethnohistoric sources, the residents of the area were referred to as the mitmas of Guachalá, first settled there by the Incas. Rather than entire domestic units, these mitmas were likely male soldiers who remained there after periods of conflict ended. Based on the mixture of local (Farinango, Imbaquingo) and foreign (Quispe, Guaman) last names in early colonial census records, Caillavet (1985: 408) suggests that there was likely a rapid absorption of these mitma migrants into local social groups.

Sometime after 1580 a Spaniard, Alonso de Carvajal, purchased the land at Guachalá and by his death in 1645, he was in possession of 214 caballerizas (around 2,350 hectares\(^3\)) of land (Bonifaz Andrade 1995: 11-12). His grandson, Francisco de Villacís, inherited this property and in 1647 he paid to legalize the titles to the land and its boundaries, listed as the “estancia” of

\(^3\) One hectare = about 2.47 acres.
Guachalá. Flocks of sheep were grazing the land around Guachalá, as these early landowners had made agreements with local ayllus to use their land for grazing. Additionally, by 1652 the neighboring high-altitude Hacienda Pambamarca already listed 6,149 sheep in its possession (Ramón 1987: 184). The property continued to be passed down through inheritance and grew in size and influence through 1697 when Antonio de Ormaza Ponce de Leon purchased Pambamarca, uniting the properties (Bonifaz Andrade 1995: 14; Bonifaz 1970: 338).

This major growth of the estate, by then listed as “Hacienda” Guachalá, coincided with the period of obraje growth in the northern highlands around Cayambe. Antonio de Ormaza officially requested and successfully purchased title for an obraje at Guachalá in 1700, part of the shift in production from places like Latacunga in the south to new obras like Guachalá (AHE, SG0002.10, 1646-1723; Bonifaz 1970: 338-339). During this period of obraje development, major physical changes were likely undertaken at the estate to provide for the resource and equipment requirements of the textile mill.

Today, the standing architecture of Hacienda Guachalá preserves much of the original organization of the estate’s facilities, though centuries of physical changes make it difficult to determine the precise location of specific spaces recorded in historic inventories. These inventories, along with interviews and archaeological excavations reveal changes in building materials and physical facilities over time. These diverse lines of evidence also illuminate a lively space of work and economic production, domestic and social space, and religious and ritual life.
As visualized in Figure 4.4, visitors to the estate entered, until recently, through the main entrance on the northern part of the property. Today, the only entrance is from the main road on the western side. There are several corrals mentioned in inventories by the main entrance, specifically for separating livestock. The open space by this entrance was also previously used for the bull fights that animated the annual San Pedro fiestas that have since moved away from Guachalá to the main plaza of Cangahua since the 1950s and agrarian reforms.

4 The descriptions in the following sections of this chapter are based on readings of estate inventories from 1763, 1819, 1868, and 1892 (AHE SG.0002.11, 1752-1773; AHE SG.0002.13, Libro IV, 1819-1823; AHE SG.0002.14, Libro V,1824-1868; AHE SG.0002.15, Libro VI, 1879-1893).
Figure 4.4 Diagram of standing architecture at Hacienda Guachalá today. Letters indicate features of the property as determined from inventories since the eighteenth century, upon which significant changes have been made to the constructions. a: Original main entrance to the property opened into an open plaza area. b: On the eastern side, this was flanked by the constructions of the obraje. The obraje extended east where there was a mixture of indoor and outdoor facilities and patios. c: There were also corrals for livestock, and likely stables and mangers for other animals. d: New chapel finished in 1938 by Neptalí Bonifaz. e: The old chapel, which may be among the first structures built on the property. f: Part of the original main house construction, contained living quarters of administrators of the estate. g: The current main patio of the hacienda. h: Contained several rooms over time, including a kitchen space and bread ovens. i: The main entrance used today, which brings in visitors from the main road between Cangahua and Cayambe. j: Addition to the main house in the nineteenth century used by the hacendados as living quarters. k: This area likely corresponds to an area of gardens described to extend to the Guachalá river and contain a variety of trees, alfalfa, and other edibles. l: The mill complex, which included several rooms to store the grains processed by the mill. There is some indication that the fulling mill (“batán”) was at the foot of the mill as well. m: To the east above the mill complex were the water sources used for these facilities, including a canal and water tanks that still serve the property. (Map by author. Aerial drone image courtesy of Mark Willis.)
The main house architecture surrounded a large patio (Figure 4.5) with a variety of rooms. Over time, these facilities included storage rooms for things like wool, a blacksmith’s workshop, other undefined rooms, a kitchen and bread ovens, pig corrals, administrator’s quarters and the old chapel. The blacksmith had anvils, hammers, a forge and bellows, and the equipment necessary for a variety of items, including specific mention of nails in 1868. The inventory from 1868 mentions a “new building,” which was an addition on the main house architecture toward the south for the living quarters of the hacendados, adjacent to expansive gardens whose plants stretched to the Guachalá River. Gardens were located in various areas and included a wide variety of plants, including the native capulí tree, alder trees, a papaya plant, laurel tree, guabo, alfalfa, maize, cauliflower, myrtle, angel’s trumpet (“floripondio”), peach and orange.

The chapel (Figures 4.5 and 4.6) was the centerpiece of religious instruction and devotion for centuries. A mural on one of its walls dates at least as far back as 1757 based on the painting of that date, though the mural is now in a state of very poor conservation. Local lore suggests that this chapel was built as early as 1580 on top of an Inca temple, though no conclusive archaeological evidence explicitly shows this. The belltower was built with 6 “windows” at the top, which finished into a pyramidal form. In 1938 a newer chapel was built on the property and now stands as the most prominent architectural feature visible from the main road.
Figure 4.5 Photos of the main patio of the hacienda today. Top photo (a) shows the old chapel exterior and the belltower, on the eastern flank of the patio. Bottom photo (b) shows the main patio in southeast direction. (Photos by the author.)
Figure 4.6 Interior of the old chapel with a close-up view of the western wall mural, painted in 1757. (Photos by the author.)
There were other important facilities off the main patio. There was a granary, or building dedicated to the storage of grains milled on the site. This was located adjacent to a patio of mangers, surely for providing feed to animals used on and around the property such as horses and mules. There was also a space for making hats (sombrerería), likely from wool, but possibly from other materials as well. The mill complex is listed as a separate facility and included several rooms to separate grains in addition to the mill itself. In 1868 the inventory also lists a room for a tanner, or leather worker (“curtidor”), who both worked and lived at the mill complex. In 1819 there was a facility to produce roof tiles (“tejas”), which would have proved immensely helpful as much of the straw roofs were improved and replaced with tile coverings during this period.

The entire property was organized as a series of rooms and structures around patios of varying sizes. The construction generally consisted of walls made of cangahua (earthen blocks of local volcanic soil) with stone foundations, with roofs of either straw or roof tiles (tejas), which were made on-site at least by 1819. The floors of the property were either exposed earth, stone floors, or made of brick. Nearly every single room described in the inventories includes its door or gate along with some sort of lock and key, indicating very restricted access.

The obraje complex (“casa de obraje”) was the primary productive center of the estate and formed its own enclosed portion of the property. While license for the obraje was granted in 1700, the first known inventory of the estate describing the obraje facilities is from 1763 (AHE, SG0002.11). The implementation of European style textile production in the Americas has been described for operations across the Spanish colonial sphere and provides a useful foundation for understanding the facilities at Guachalá (Cushner 1982; Miño Grijalva 1993, 1993b; Salas 1998). Obrajes required reliable sources of water in addition to sheep wool, firewood, natural dyes, and
plenty of space for both indoor and outdoor operations. The process began outdoors. First, as wool was sheared off for use in cloth production, it had to be carefully washed outdoors and sorted according to quality. Wool even from the same sheep could have different grades depending on the part of the animal’s body from which it came. According to Cushner (1982: 95), a warm solution of three parts water and one part urine was used to remove the natural oils of the wool before being further rinsed in water and hung to dry. A soapy solution was also made using ash and water and referred to as lejía, including at Guachalá. Once dry, a wool beater (bergeador) thrashed the wool to remove remaining dirt and dust and to make the material more pliable.

In the galpón de hiladuría, workers carried out the carding and spinning of the wool. Turnip oil was often used to make the wool more supple for the carding process. Carding was accomplished by combing the wool between two wooden boards (cardas) covered with a type of skin and with wire teeth. A clump of wool would be placed between them and drawn through the teeth in order to open and straighten the wool fibers for spinning (Cushner 1982).

Workers spun the wool either using traditional Andean methods with a drop spindle whorl or with a Spanish-introduced spinning wheel that increased production capacity. Once the wool was spun into uniform threads of yarn, these could be dyed according to color preference. Dyeing involved both the preparation of the dyes and the actual dyeing of the yarn. This required large copper cauldrons in which the wool was immersed in dyes that were prepared in smaller tubs. The work was physically exhausting due to the long days inside hot rooms in which the dyes were boiled (Cushner 1982).
The weaving department, called the cuarto de tejeduría, was generally the largest. Here, relatively higher skilled weavers labored on looms, generally inside of a structure but sometimes outdoors along a corridor. There were generally different sizes of looms, and the reeds (peines) also varied in size and number of warp strands depending on the final cloth product and its quality (Figure 4.7) (Cushner 1982).

Once complete, the cloth was then taken to the fulling mill (batán) where it was washed and beaten and then “fulled” or pounded with wooden hammers. This served to shrink and condense the cloth into more final form. After drying the felted cloth, workers removed loose threads and knots and sheared with scissors to give a smoother appearance. Finally, the cloths passed under heavy and heated, copper-plated presses. At this point, the cloth was set for packaging and shipment to its destination (Cushner 1982).
Based on inventories of the equipment and facilities of the obraje at Hacienda Guachalá, the process closely mirrored these general procedures. By 1763, the obraje (casa de obraje) consisted of all of the key facilities described above. In the spinning room there were 40 spinning wheels, a balance to weigh threads, 6 pairs of carders, a weaving room with 9 looms with warpers, at least 10 reeds and heddles for different types of cloth production. Another 5 weaving looms are described as using wooden pillars and specifically for the production of fine paño cloth. There were also large tinacos for mixing the ash and water mixture known as lejía, and for dyeing bayeta cloth. Other jars were used for “oils,” which may refer to the turnip oil often used in the carding process. The inventory lists a batán, or fulling mill, that was water powered, with associated iron components. Separate structures contained a bronze plated press and shearing scissors for the final steps of the cloth production process. Sixty-three years after the first title was granted for an obraje at Guachalá, the operation had achieved a large scale with comparable production capacity of other large Spanish colonial obrajes, though smaller in scale compared to others like Chillo in Quito (Cushner 1982) and Pomacocha in Peru (Hu 2016) based on the number of looms.

The inventories also reveal that the casa de obraje was more than a workspace as it included living quarters for at least some of the workers. The only explicit reference to a domestic room in the 1763 inventory is a single room for the master obraje worker (“maestro de obraje”). There are at least five quarters (“viviendas”) explicitly described in the obraje in 1892, all of which had doors, at least one with a tile roof, walls of cangahua and river rock, one with a brick floor, and at least one with a stone (“empedrado”) floor. The inventories do not mention specific kitchen areas in the obraje complex and so it is unclear if individual laborers would have cooked in their own quarters, if there was an informal collective cooking area for the obraje
workers, or if meals were prepared using the kitchen in the main house. This same 1892 inventory also mentions the existence of 14 latrines, for the first time in the obraje (AHE SG.0002.15, 1879-1893). Bonifaz (1970: 345) suggests that these were an addition placed by former president Gabriel García Moreno when he rented the estate in 1868, and whose influence is further explored later in this chapter.

Over the eighteenth and nineteenth centuries, Guachalá developed the physical constructions necessary for impressive economic output that relied on the coerced labor of local, resident families who became hooked (“concertado”) to the estate. Analysis of the written descriptions shows how the organization of space was similar to that of haciendas and plantations across the Spanish empire, which balanced the concerns of efficient economic output, social and religious impositions, and labor discipline consonant with developing agrarian capitalism. The series of patios surrounded by rooms of restricted access, all with doors and locks, closely mirrors the organization of other obrasjes like Pomacocha in Peru (Hu 2016: 227-233) and San Ildefonso in Pelileo, Ecuador (Corr 2018). At Pomacocha, Di Hu (2016) reconstructed complicated paths of access and lines of sight in the obraje complex, finding that there were likely areas of relatively lower or higher intervisibility and surveillance, which often corresponded with ethnic and gender categories since certain tasks were divided in this way. Additionally, as elsewhere, the buildings of Guachalá were surrounded by tall, thick cangahua walls surrounding the roughly 200m x 100m area of the core of the property.

Since the early colonial period the obraje “sweatshops” of the Americas were notorious as abusive work settings for the Indigenous families required to labor within them and Guachalá was no exception. The physical facilities and organization of the estate were consistent with the disciplining of labor seen at estates across the continent, and archival testimonies further attest to
the abuse suffered by Indigenous laborers at Guachalá. At the obraje itself, estate inventories list the specific equipment and facilities for jailing laborers. In 1763, this included a jail with stocks and three shackles (“cormas”), which by 1771, had increased to five shackles (AHE, SG0002.11, 1752-1773). By 1819, the inventory records the presence of a jail comprised of three rooms, a separate jail for women, and another double-gated jail (AHE, SG0002.13, F32-33). There was a constant threat of physical confinement and abuse mixed in with the very rooms in which the obraje workers carried out their daily tasks.

Testimonies from several laborers reveal the physical and emotional pain wrought with these facilities at the hacienda, including a case in 1801 against the hacendado Don Ramón Borja. Maria Guaña, for example, formally requested to be freed with her family from the estate and her debts because of the “cruelty” Borja showed toward her husband and son. She reported that Borja was holding her husband in prison at the obraje where they “lash him day and night, in double punishment without letting him get a breath, doing the same to her son, a minor” (ANE, I/C147/9/1801, F59-62). During the same year of 1801, two other workers, Felipe Coyago and Agustín Fuente reported similar abuses by Borja, which caused them to flee the estate (ANE, I/C149/19/1801, F1-4).

Borja became sick shortly thereafter and required rest away from the estate between 1802-1810, during which time there appears to have been a more equitable working relationship between the various classes of laborers at the estate (Ramón 1987: 255). Upon his return to the estate in 1810, Borja was incensed at the state of the property and his abusive behavior resumed. Galo Ramón presents similar documented denunciations of physical abuse at Guachalá against Borja in 1810 and 1815 (Ramón 1987: 255). The horrors of concertaje labor, particularly at hacienda-obrajes marked life at estates across the Andean region and continued until reforms
began around the turn of the twentieth century. Sometimes the only remaining option was simple flight from the property and at Guachalá in 1868, the inventory lists ten workers as missing (“ausentes”), nine of whom were men and a likely married couple accounting for the sole woman listed (AHE SG.0002.14/Libro V/F67r).

Upon his return to Guachalá in 1810, Borja continued his abusive behavior toward hacienda laborers and some of his words were preserved in written documents. In one document identified by Galo Ramón (1987: 257), Borja asserted that,

“If you don't subject the bad Indians sometimes in manner, other times with reprimand, and more often with the appropriate punishment; as father, as superior, and as lord of his domestics, one would not reap any reward nor advancement in that way for civilized order, and destruction of the vices so pernicious to the Republic, nor to the hacendado’s own benefit.”

His words represent a broader, fundamental belief about the role of hacendados, the hacienda system, and the concertaje labor system in creating subjects consonant with the aims of colonial and, later, national society as well as economic output.

**4.5 The Growth of Guachalá and the Transformation of Agrarian Landscapes and Lifeways: Before and After the Birth of the Republic**

In understanding how the hacienda configured new relations and uses of the broad surrounding landscape, it is important to note that the obraje itself was only one piece of the production of Guachalá. At the time of the 1763 inventory of Guachalá referred to above, the property included legal title to about 12,000 hectares, nearly the size of the entire parish of

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5 Translation my own of quotation from Ramón (1987: 257): "si no sujetasen a los malos indios unas veces con el modo, otras con la repreención, y las más veces con el conbeniente castigo; ya como padre, ya como superior y ya como señor de sus domésticos, ningún fructo ni adelantamiento se sacaría así para el buen orden de las costumbres, y destrucción de los vicios, tan perniciosos a la Republica, como para el goze del beneficiio propio del enhacendado.”
Cangahua and almost 9 percent of the agrarian land mass of the canton of Cayambe (Becker and Tutillo 2009: 169-172; Ramón 1987: 239). The property included the lower valleys along the edges of the Pisque river all the way up to the high páramos of Pambamarca and Quinchucajas, located south of Cangahua in the foothills of the imposing Quitoloma fortress site (Figure 4.8). In doing so, the hacendados utilized the vast ecological diversity for a new set of products:

1. Lower Zone (2,600 – 3,200 meters above sea level [masl]):
   a. Textile production in the Obraje to produce jerguetas, bayetas, lienzo, and paño.
   b. Cheese production
   c. Pasture land for cattle fattening, wheat and maize production

2. Middle Zone (3,200 – 3,400 masl):
   a. Major farming zone for potato, barley, beans and peas

3. Upper Páramo Zone (3,400 – 4,200 masl)
   a. Sheep and cattle pasture
   b. Wool for the obraje

Production in the lower zone was oriented for sale to the market for the major profits of the hacienda and required roughly two thirds of the labor force. The middle zone activities essentially produced the foods that were given to the huasipungueros as salary (socorros) and the upper zone produced the raw material for the obraje and required the least amount of workers but the greatest quantity of land. The earliest known list of workers divided by task and gender comes from 1833 and is summarized in Table 4.1.
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<td><strong>62</strong></td>
<td><strong>377</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

**Table 4.1** Numbers of workers by task, 1833. Information from Libro de Socorros, 1833 (ANE, Haciendas Caja 12, V2, 1833). A similar table is presented in Ramón (1987: 240).

This ecological division resulted in what could be considered two administrative “centers” of the estate, one in the lower valley at the Guachalá hacienda house and obraje itself, and the other at Pambamarca. The latter had lesser facilities but served as the administrative center for the high-altitude activities. The huasipungueros lived in the zone in which their task was conducted, meaning that there would have been a greater number of families living in the lower zone area and smaller numbers living in the middle and high páramo zones as well. Galo Ramón (1987: 243-244) has proposed that the resulting dual organization of the landscape (upper
and lower) mirrored Andean conceptions of space and that huasipunguero families began to form dense social attachments to particular places in which they lived and worked.

The zones of production and residence of the huasipungueros began to assume toponyms in uneven ways. The richest pastures with access to water for the fattening of cattle were worth the most financially, located in the valley, and most often took the name of Christian saints (San Antonio, San Francisco, San José, etc). Meanwhile, the fields used for agricultural production and the páramo grazing lands, which accounted for the majority of the total property land mass, generally kept local, non-Spanish, toponyms. The fact that the names of these lower pasture lands (potreros), agricultural fields (sementeras), and grazing lands (páramos) later became the names of the new “comunas” or legalized communities after the dissolution of the hacienda is likely no coincidence. The deep social ties of huasipunguero families to each other and to the

Figure 4.8 View looking south showing the lower, middle, and upper altitude sites discussed in this chapter. (Aerial imagery from Google Earth; overlay by the author.)

Antonio, San Francisco, San José, etc). Meanwhile, the fields used for agricultural production and the páramo grazing lands, which accounted for the majority of the total property land mass, generally kept local, non-Spanish, toponyms. The fact that the names of these lower pasture lands (potreros), agricultural fields (sementeras), and grazing lands (páramos) later became the names of the new “comunas” or legalized communities after the dissolution of the hacienda is likely no coincidence. The deep social ties of huasipunguero families to each other and to the
land in which they lived and worked made these associations likely, if not inevitable. The question that has largely been proposed but not investigated, is how these social and ecological ties were forged in everyday life – a process that is made more visible through the lens of materiality of community explained in subsequent chapters.

The division of lands shows a consistent transformation of land use to which huasipunguero families rapidly adapted. By 1819, a full 119 years after the legal obraje license was granted, and around the time of the Andean battles for independence from Spain, fully 29% (312 caballerias) of Guachalá’s property was dedicated to cattle grazing and associated activities. Another 66% (729 caballerias) of the property was comprised of páramo grazing lands for sheep and additional cattle (ANH, SG0002.13, 1819-1823; Bonifaz 1970; Ramón 1987: 247). A vast majority of the land owned by Guachalá was thus re-oriented with a new assemblage of introduced animals, altering the lifeways of those living and working there.

The growth of livestock had repercussions both for the agrarian lives of the Indigenous residents, as well as for the physical landscape. In Table 4.2 these numbers can be appreciated over the course of 1763-1892. The numbers show a consistent growth of cattle through the end of the nineteenth century. Over the same time, there is a relative maintenance in the number of sheep, which are much more numerous, until the end of the nineteenth century as the obraje begins to decline. Over the eighteenth century, the Cayambe area experienced periods of drought and the landscape around Guachalá was already described as showing serious problems of erosion. The 1783 inventory, for example, mentions that large areas of the hacienda were eroded to the point that the underlying cangahua bedrock was exposed, likely as a result of the over-grazing by the massive flocks of sheep (AHE, SG0002.12, Libro III, 1783; Bonifaz 1970: 343). Additionally, the valley pasture lands were described as lacking water. Land prices reflect the
major importance of access to water, where one caballeria of land with water was worth 800 pesos, while the same amount of land without water was priced at 100 pesos. The majority of construction was done using cangahua block construction because of a lack of wood in the area, making the native capulí tree particularly important for both wood and fruit.

The transformation of the landscape and the entire local ecology thus created the conditions for increasing relations of dependency and inaccessibility of particular sources of food and resources. Over the eighteenth and nineteenth centuries, the numbers of laborers and livestock increased, while the landscape eroded and access or affordability of resources declined. Based on analyses of cattle prices and worker salaries, the price of a single cow rose from the equivalent of 20 workdays in 1771, to 28 days in 1819, and 60 in 1891 (Bonifaz Andrade 1995: 38-39). A protracted period of decreasing access to resources thus continued over at least two centuries.

<table>
<thead>
<tr>
<th>Year</th>
<th>Cattle</th>
<th>Sheep</th>
<th>Horses and Mules</th>
</tr>
</thead>
<tbody>
<tr>
<td>1763</td>
<td>1,235</td>
<td>21,769</td>
<td>90</td>
</tr>
<tr>
<td>1771</td>
<td>1,689</td>
<td>19,506</td>
<td>234</td>
</tr>
<tr>
<td>1783</td>
<td>1,636</td>
<td>18,989</td>
<td>120</td>
</tr>
<tr>
<td>1819</td>
<td>3,305</td>
<td>18,711</td>
<td>304</td>
</tr>
<tr>
<td>1875</td>
<td>4,400</td>
<td>18,000</td>
<td>-</td>
</tr>
<tr>
<td>1891</td>
<td>3,305</td>
<td>13,510</td>
<td>165</td>
</tr>
<tr>
<td>1892</td>
<td>3,198</td>
<td>12,712</td>
<td>150</td>
</tr>
</tbody>
</table>

Table 4.2 Numbers of livestock in the records of Hacienda Guachalá and annexes between 1763-1892. Source: AHE, Inventories 1763, 1783, 1819, 1892 and Bonifaz Andrade (1995: 37-38).
As political ecologists are quick to point out, ecological degradation is never simply a natural consequence devoid of human intervention and politics. The case of Hacienda Guachalá is no exception. Production continued at Guachalá following official independence of the colonies from the Spanish Crown and the formation of Ecuador as an independent nation in 1830. In fact, the number of laborers at Guachalá rose from 259 in 1819 to 439 in 1892 (Table 4.3) (Becker and Tutillo 2009: 173; Bonifaz Andrade 1995: 37). Those intervening years were a period of intense debate in Ecuador related to the process of postcolonial state formation and national identity. In Ecuador, even more than in other Andean nations, the hacienda system was a major force in the development of this national identity and the contours of social, economic, and political power (Clark and Becker 2007; Larson 2004). The resident laborers of Guachalá felt the consequences of these debates directly at the hacienda through the influence of elite hacendados after independence. But none had more impact than Gabriel García Moreno, who rented the estate for five years beginning in 1868 in an era in which he dominated Ecuadorian politics as president of the nation (1861-65, 1869-75).

<table>
<thead>
<tr>
<th>Year</th>
<th>Workers with NO debt</th>
<th>Workers WITH Debt</th>
<th>Total Number of Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1763</td>
<td>114 (66%)</td>
<td>60 (34%)</td>
<td>174</td>
</tr>
<tr>
<td>1783</td>
<td>145 (61%)</td>
<td>94 (39%)</td>
<td>239</td>
</tr>
<tr>
<td>1819</td>
<td>78 (39%)</td>
<td>124 (61%)</td>
<td>202</td>
</tr>
<tr>
<td>1892</td>
<td>21 (5%)</td>
<td>397 (93%)</td>
<td>428</td>
</tr>
</tbody>
</table>

*Table 4.3 Number of workers at Hacienda Guachalá and relative proportion of indebtedness, 1763-1892.* Table adapted from Becker and Tutillo (2009: 173) and based on inventories, Archivo Histórico del Ministerio de Cultura. Note: There are some discrepancies in these numbers in different sources (Bonifaz Andrade 1995: 37; Bonifaz 1970: 349; Ramón 1987: 249). These differences may arise from differing counts of deceased laborers, occasions where inventories list an individual twice, or other causes. Additionally, Becker and Tutillo (2009) note that the numbers for 1892 do not add up to 100% because 10 individuals abandoned the estate.
One of the most direct and lasting effects of García Moreno on Guachalá was the role he played in introducing the eucalyptus tree to Ecuador from Australia as a potential solution to the ecological degradation experienced across the highlands. Since the first introduction of sheep and cattle to the northern highlands, these animals rapidly became an essential part of the new “biopolitical assemblages” of Spanish colonization (Corcoran-Tadd and Pezzarossi 2018). Their meat fed the laboring bodies of huasipunguero families, and their wool literally wove together a new social fabric as it clothed the transforming human population across the Andes. But the long-term effects were already clear by the eighteenth century, as large swaths of land became eroded and unserviceable. Similar ecological effects wrought by the introduction of sheep and cattle have been described in similar contexts elsewhere in Latin America (Ficek 2019; Melville 1997; Puente 2018). Suffering from degraded and eroded soil, and a lack of solid wood for construction materials and firewood to fuel the textile mills and household kitchens, elites like García Moreno saw a potential solution in the Australian eucalyptus.

It was García Moreno who, as president of the Republic in 1865, received a gift of seeds from the French Acclimation Society. According to Kenneth Kincaid (2013), the president sent these on to Ambato where Dr. Nicolas Martinez first germinated them. Three eucalyptus seeds successfully germinated and within just fifteen years one of the trees had grown to a height of 14 meters and a trunk circumference of nearly 4 meters. Subsequent generations grew even faster and Martinez immediately recognized the potential benefits of these trees. He claimed that in addition to medicinal effects of the leaves, its rapid growth, multiple uses of the wood, and hardiness and adaptability of the trees made it the ideal tree and encouraged large-scale cultivation. Sure enough, the eucalyptus caught on, and by the 1920s were grown on a commercial scale in Ecuador.
But with García Moreno at the helm of Guachalá, introducing the “modernizing” sciences and technologies to rural agriculture, the eucalyptus took off even earlier. By 1892, at least 680 eucalyptus trees were listed in the Guachalá estate inventory (AHE, SG.0002.15, SG.000.2.16). The trees were planted in different areas of the property, intermixed with native trees like the capulí and other foreign species. Eucalyptus forests had begun to remake the Cayambe landscape decades before Dr. Misael Acosta Solís, the Director of Ecuador’s Forestry Department, traveled the highlands in the 1930s and 1940s advocating for widespread planting for reforestation. Acosta Solís referred to the eucalyptus as the “wood-yielding salvation of the Sierra” (cited in Kincaid 2013: 155).

In many regards, the eucalyptus did provide these benefits to the people of the highlands, but its introduction has also set off a controversial environmental debate regarding positive and negative trade-offs. During the twentieth century the eucalyptus was celebrated for providing reliable sources of fuel, construction wood, to serve as wind breaks, and fight the soil erosion first caused by over-grazing. But these trees also completely altered the highland ecologies of the Northern Andes, sucking water out of the ground and drying out local aquifers and pushing out native vegetation. Today, the eucalyptus dominates the landscape, with its rich smell and imposing stature, the forests fill in the area where green houses of the flower plantations are absent (Figure 4.9). The controversy over its potential benefits and dangers is ongoing, but without a doubt, the Australian eucalyptus is another witness to and key actor in the centuries-long socio-ecological transformation of Cayambe and the Ecuadorian highlands, with important roots in the soil at Guachalá.
Today, a framed fragment of the bloodied shirt worn by García Moreno upon his assassination in 1875 is on display at Hacienda Guachalá. Though more of a symbolic presence today, the impact and influence of García Moreno on Guachalá, the hacienda system, and the entire nation is deep. His Catholic devotion and project of scientific modernization indelibly shaped the materiality of life at the estate as it did across the nation after 1860. By the time García Moreno came to power, the hacienda system had fundamentally changed agrarian life in Cayambe through ecological and social transformation. His legacy on both Guachalá and the nation for most of the second half of the nineteenth century is a key backdrop to the archaeological investigation of life at the estate during that same period.
While the expanse of eucalyptus testifies to García Moreno’s deep influence on the landscape, estate inventories provide an important glimpse of the social and material lives of the hacendado elite during the nineteenth century. The second half of the nineteenth century was characterized by the ideological fights between liberalism and Catholic conservatism. President José María Urvina (1851-1858) and the ideals of liberalism had fought for a centralized state government and discourses of republican equality that led to the abolition of slavery (1854) and the end of the Indian Tribute (1857) that had remained from the end of colonization (Williams 2007: 37).

Under the leadership of Gabriel García Moreno (1861-1865, 1869-1875), Catholic conservatives ushered in a new period of state rule and ideology. García Moreno instituted a form of conservative nationalism that insisted on Catholic devotion as a means for uniting the country, while legislating for economic and technical modernization (Henderson 2008; Larson 2004). While perhaps contradictory on the surface, the two positions were complementary in practice. The civil and moral mission of the Catholic faith would hypothetically eliminate local cultural differences, unite the country, and produce a more efficient work force capable of competing in global markets. García Moreno attempted to initiate a “Catholic modernity” through the national collectivity of the pueblo Católico (Williams 2005: 208-209). In an analysis of 1870s newspapers, Derek Williams revealed how this was to be achieved partly through nationalized religious education that would bring “enlightenment and progress” to remote rural areas so as to reverse the perceived “repugnance to all innovation” of Indigenous peoples (Williams 2005: 211-212). Over time, and particularly after the Liberal Revolution of 1895, this approach to national progress was increasingly associated with a homogenized body politic that would progressively manufacture and consume mass-produced commodities (Hardin 2014).
Furthermore, to root out the “immoral” behavior of Ecuadorian society the García Moreno government clamped down on “pagan” rituals during religious celebrations and criminalized public drinking, including a national ban on alcohol consumption in taverns, chicherías, and town plazas in 1871 (Williams 2005: 218). These policies were rooted in the logic of Catholic morality as the base of a national project, but it is also clear how such policies were instituted along ethnic lines. For elites in Ecuador, an “empire of morality” promised to unite a country of diverse cultural textures through religious devotion, economic consumerism, and enlightened social etiquette.

The switch to conservatism was a major victory for highland hacendados who feared losing their labor force to migrations to the coastal plantations. The hacienda system itself, with its organization of labor and social life, played the part of state by proxy in these rural highland areas. The materiality of the hacienda household was an important domain through which elite nationalism developed in Ecuador as the García Moreno nation-building project gained steam after the 1850s.

One estate inventory was recorded in preparation for García Moreno to rent Hacienda Guachalá (1868) and another after he had left (1892). These records provide important comparative information with which to understand material markets and elite social etiquette from the time period focused upon in the archaeological study in this dissertation. What stands out among these documents is the ways in which hacendado families were surrounded by material markers of aristocratic social etiquette and a Catholic faith that naturalized Christianity (and not pre-conquest narratives) as the foundation of the new Ecuadorian nation. I suggest, in fact, that the materiality of the hacienda household was itself constitutive of emerging elite nationalism in Ecuador and Spanish America. This was a nationalism which, in addition to
“residing in symbols, iconographies, and imaginings” (Earle 2007: 10), was embodied through daily social interaction with the spaces and objects described below.

In both inventories, several pages are dedicated to describing the ornaments, furniture, and paintings of the chapel (AHE, SG0002.14, SG.0002.15). Religious paraphernalia is described in great detail and was part of the hacienda chapel attended by residents of the region of all social standing for centuries. As such it would have been a key place of worship for indigenous populations and, historically, a space for their religious instruction during the colony. In 1868, paintings there included four large works depicting the Creation story, several angels and saints and la Virgen del Carmen. The inventory describes an antique and ornate tabernacle box (sagrario) and a figure of Christ on the Cross, partially of silver. Other prominent objects include furniture and decorative elements specifically of Portuguese origin.

In addition to the vast amounts of religious items these same inventories include thorough listings of houseware items that attest to the social etiquette of matched and individualized dining sets (Table 4.4). Tablewares include sets of soup dishes and dinner plates, wine glasses, water glasses, coffee cups and teacups, dessert dish, sugar holders, pitchers and platters. The majority are of imported, refined earthenwares or glasswares. The inventory specifies a particular use for each vessel, differentiating water glasses from wine glasses and coffee cups, for example. Many have matching sets such as teacups with tea plates, and the number of the vessels testifies to the individualized etiquette for the use of all of the items. In a manner similar to many archaeological contexts excavated throughout North and South America dating to the periods since European expansion, the material inventories bear witness to the intense commodification of individualized serving and table wares. Historical archaeologists traditionally understand this process, with an accompanying context of architectural changes, as part of a broader shift toward
possessive individualism and the social ideologies of capitalism (Deetz 1977; Leone 1999, 2005; Matthews 2010; Schávelzon 2000). Here, it is important to capture the way that everyday material goods are intimately tied to a particular performance of elite subjectivity consonant with a hegemonic ideology of national culture and prestige.

<table>
<thead>
<tr>
<th>“Dining Set” - 1868</th>
<th>“Table Ware” - 1892</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 white plates from soup bowls to trenchers</td>
<td>1 soup dish of blue china with a top</td>
</tr>
<tr>
<td>2 teacups without handles</td>
<td>6 round platters, flat, of ordinary china</td>
</tr>
<tr>
<td>2 deep soup bowls with lids one scratched, and another soup bowl of another color</td>
<td>4 elliptical platters</td>
</tr>
<tr>
<td>4 large platters of various colors</td>
<td>1 dessert dish of fretted ceramic china</td>
</tr>
<tr>
<td>3 of the same, small, of various classes</td>
<td>1 small dessert dish of fine china</td>
</tr>
<tr>
<td>3 soup bowl lids</td>
<td>A pair of metal wire fruit bowls</td>
</tr>
<tr>
<td>A sugar holder without handle or lid</td>
<td>34 plates of fine china from soup bowls to trenchers</td>
</tr>
<tr>
<td>1 glass cup</td>
<td>1 china sugar dish with top</td>
</tr>
<tr>
<td>1 white pitcher, chipped and without handle</td>
<td>1 large teacup of ordinary china</td>
</tr>
<tr>
<td>5 wine glasses</td>
<td>1 butter dish of ordinary china without its handle</td>
</tr>
<tr>
<td>9 water drinking glasses</td>
<td>29 teacups and 23 tea plates of china</td>
</tr>
<tr>
<td>12 coffee cups with their matching plates</td>
<td>1 brass tweezer</td>
</tr>
<tr>
<td>1 coffee maker and a tin milk canister</td>
<td>1 cookie box opener</td>
</tr>
<tr>
<td>4 tin candlesticks</td>
<td>10 teacups</td>
</tr>
<tr>
<td>1 candle snuffer (despabiladera)</td>
<td>1 small iron kettle</td>
</tr>
<tr>
<td>One pot without a handle</td>
<td>Another of the same, worn</td>
</tr>
<tr>
<td>(AHE SG.0002.14)</td>
<td>1 wooden oil holder, worn, with five glass pieces</td>
</tr>
<tr>
<td>2 used trays</td>
<td>2 ordinary glass decanters</td>
</tr>
<tr>
<td>3 tin coffeemakers, 2 in good condition, the other used</td>
<td>18 wine glasses</td>
</tr>
<tr>
<td>Pair of glass pitchers</td>
<td>12 water drinking glasses</td>
</tr>
<tr>
<td>2 ordinary glass decanters</td>
<td>11 small cups</td>
</tr>
<tr>
<td>18 wine glasses</td>
<td>3 plates of ordinary china</td>
</tr>
<tr>
<td>12 water drinking glasses</td>
<td>1 steel spoon</td>
</tr>
<tr>
<td>3 plates of ordinary china</td>
<td>33 spoons with bone endings</td>
</tr>
<tr>
<td>1 steel spoon</td>
<td>12 ordinary carving plates</td>
</tr>
<tr>
<td>33 spoons with bone endings</td>
<td>3 knives and 3 forks to carve turkey</td>
</tr>
<tr>
<td>12 ordinary carving plates</td>
<td>15 white brass spoons</td>
</tr>
<tr>
<td>3 knives and 3 forks to carve turkey</td>
<td></td>
</tr>
<tr>
<td>15 white brass spoons</td>
<td></td>
</tr>
<tr>
<td>(AHE SG.0002.15)</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.4 Inventory excerpts of the Hacienda Guachalá, ca. 1868 and 1892. The first was carried out prior to renting the estate to conservative president of the Republic, Gabriel García Moreno.
Because of their ubiquitous and everyday presence as well as their affordances in the fabric of social life, objects are significant constituents in cultural and national identity. Tim Edensor notes that “familiar objects endure in everyday lifeworlds, are part of the way things are, discreetly contributing to shared forms of solidarity” (Edensor 2002: 104, emphasis added). He adds that “things emerge out of and mediate social relationships” (2002: 104). Items such as tablewares used in daily meals may evidence particular social ties through decorative attributes and stylistic traits, but they also entangle a variety of social practices generally grouped under the concept of foodways. In the present case, the fine dishes and porcelain utilized by the hacendado family and guests actively fostered a connection to the modernist conception of social etiquette upon which aristocratic character rested. As materials that were also enmeshed in the quotidian performance of social practices, the matched sets of dishes rigorously emphasized and embodied particular expectations of individualized etiquette and manners (Deetz 1977; Matthews 2010).

4.6 Laboring Bodies and the Infrastructure of Resource Insecurity at Guachalá during the Republican Period

Just as the materiality of hacendado life at Guachalá performed this particular ethic of elite individualism, I suggest that the labor and accounting practices of the concertaje system also actively worked to create individualized subjects on the part of laboring residents and wedge itself into local social relations. Here, I focus on two components of this, including the contracts and accounting practices of concertaje, and the process by which the system forced Indigenous families to depend on the hacienda for their own nutritional and resource sustenance. As described earlier in this chapter, the precise forms that concertaje labor took likely changed over time, from adaptations of pre-colonial labor forms to what became officially known as the
huasipungo system after 1918. The following discussion primarily describes this through the available evidence mostly dating to the late nineteenth and early twentieth centuries.

The system of conciertaje was a contractual agreement arranged between laborer and landowner. The concierto would work in exchange for a small wage and a small parcel of land on which to build a house (called a huasipungo) and grow food for his family’s subsistence. At times the worker also received rights to other resources on the hacienda such as water, firewood and pasture for their animals. The conciertos received certain goods at set times in the form of socorros that were subtracted from their wages. At Guachalá, these socorros were most often set amounts of potatoes, barley, small amounts of beef, cheese, and cloth with which to make clothing. In times of emergency and additional need, the conciertos could also request a suplido, which was often used to help pay for ritual obligations, the costs of a funeral, or other unforeseen needs. This system forced workers into drowning amounts of debt which tied them to the hacienda. If the hacienda was sold, the laborers and their contracts and debts were sold with it. Accounting books were therefore essential for administrators as they tracked each day of work carried out by the laborer to repay the debts and each advance given by the hacendado. The socorros and suplidos were recorded by a mayordomo or escribiente in addition to the libro de raya which was the accounting book used by the hacienda to track completed workdays, named for the tick mark (raya) penned in per each day of work.

Several examples of these accounting documents and labor contracts from hacienda Guachalá demonstrate how this labor system functioned. A series of concertaje contracts from 1899 are particularly informative and the only known remaining contracts of the estate (AHE SG.0002.17). The documents are agreements between several male head-of household laborers
and the owner at the time, Doña Joséfina Ascásubi. The contracts stipulated that the laborer agreed to the “leasing of their services” on several bases:

1ª. I agree to work in the hacienda for a period of five years. (“Me obligo a trabajar en la hacienda durante cinco años.”)

2ª. I will work at least five days each week. (“Trabajaré por lo menos cinco días en cada semana.”)

3ª. A wage of five cents per day will be paid to me. (“Se me pagará el jornal de cinco centavos diarios.”)

4ª. I will also be given the accustomed huasipungo for the subsistence of my family and I (“Se me dará además el guasipungo acostumbrado para mi subsistencia y la de mi familia.”)

5ª. I have received an advance of six sucres and fifteen cents. (This amount varied) (“He recibido por cuenta de jornales la cantidad de seis sucres quince centavos.”)

6ª. Under no circumstances will I be permitted to return this money, for I have agreed to pay it off through my labor. (“En ningún caso podré devolver esta cantidad en dinero, pues me obligo a desquitarla en trabajo.”)

(AHE SG.0002.17)
The contract, signed by both parties, laid the basis for a relationship of debt, which could not be repaid in the form of money but rather in labor. While officially the agreement was with the male head of the household, the huasipungo parcel of land was for the entire family and the entire family assisted in ensuring the assigned tasks would be completed, often without additional remuneration.

An additional series of contracts from 1895 demonstrate how the hacienda even ensnared underage children of hacienda workers into formal work relationships. The contracts note the presence of the hacendado (in this case Neptalí Bonifáz, son of Josefina Ascázubi and in charge at the time), the child, and the child’s father or mother. One of the parents declares “that by virtue of their son finding himself without work they submit him as peon of Hacienda Guachalá,
so that the *patrón* may place him in whatever task he finds necessary, and whose salary will be assigned in the libro de suplimentos” (“que en virtud de hallarse su mentado hijo, sin ocupación de ninguna clase tiene a bien el concertarlo de peón en la hacienda de Guachalá, para que su patrón le destine al trabajo que estime por conveniente, cuyo salario se asignará en el libro de sus suplimentos”) (AHE SG.0002.17, 1895). The document stipulates that the child must work for at least five years and that he must continue to work if at the end of that period he owes the hacienda. If the child did not fulfill the contract, the father agreed to be held accountable by virtue of his labor or material possessions. Five different children were coerced into servitude that day of August 26, 1895, and, without schooling, not a single one of them or their parents was able to sign the contract themselves.

**Figure 4.10** Example of a page from a libro de raya, from 1933 and 1934 (AHE, SG.0002.25, 1933-1935).
Other accounting books, including libros de socorros and libros de rayas (Figure 4.10) exemplify the impersonal, universalizing force of capitalistic labor practices. The socorro books list each worker, divided by sex and task, followed by the amount of debt that they have accumulated and the date and amount of any advance granted to them. The rayas similarly list each name and tick marks underneath by month, occasionally with calculations in the margins by the administrator. The books evoke a sense of repetition and routinization. They embody and perform a sense of abstraction, homogenization and discipline.

Economic sociologist Peter Miller emphasizes that accounting does “more than mirror economic reality,” but rather that “accounting could shape and create social relations, that it could define and alter the way we live our lives, that it could influence the way in which individuals and organizations understand the choices open to them and the ways in which they act” (Miller 2008: 56). While his analysis refers to contemporary accounting practices, his basic premise of the constitutive role of accounting is equally relevant to accounting in other places and other times. Max Weber first recognized accounting as a central tenet of an ethos of Euro-American capitalism. One of the unique aspects of this formation of capitalism, according to Weber, was the “rational organization of formally free labour,” which referred to a form of routinized administration (2001 [1930]). Equally important was a separation of work or business from the household and rational book-keeping. Weber recognized that certain technologies (like book-keeping) were integral to distinct manifestations of capitalistic practice.

The notion that accounting practices could have a constitutive role in social relations and social practice expands Weber’s point in important ways. As applied here, it means that the accounting documents created at Hacienda Guachalá and elsewhere actually had mediating effects as “technologies of the self.” Those records were part of a rational capitalistic motive that
sought routinized labor, which could be reproduced. These created the “stable repetition” that
was central to Weber’s understanding of capitalism as much as it is central to Nigel Thrift’s
(2005) characterization of late capitalism. They created formal relations of work obligation
between peasant and hacendado, even over generations of families. As David Graeber (2011: 89)
suggested in his expansive study of debt relationships across cultures, the “language of the
marketplace has come to pervade every aspect of human life.”

The accounting practices, legalized labor contracts of adult and under-age children, and
constant threat of corporeal confinement and abuse in jail rooms on the property were just part of
the mechanisms of subject-making and capitalistic practice. What is often overlooked in
discussions of concertaje is the manner in which these factors instituted long-term relations of
dependence and resource precarity on families and how those impacts still stubbornly condition
life today. The system instituted a perfect storm of conditions making self-provisioning
subsistence nearly impossible. Life as a concierto began with an established debt that required
labor to repay. With steepening debt, increasing labor time was required. The huasipungo
granted to families were most often granted in the most inhospitable lands on the precarious
banks of rivers or on sterile land, making agricultural success for these “small-farmers”
impossible. With little time and unproductive land, families had to turn to the hacienda for the
foods that would sustain them. The same foods that they often harvested themselves for the
hacienda thus sent them into even greater debt in order to eat them.

The contrast in access to nutritious, diverse food products could not be clearer in the
historical documents of the estate. The libro de socorros from 1889 (ANE Caja 150, Exp 1)
presents each worker with a list of products given as socorro or suplido after March 17. Each
worker was given the following goods:
March 17: Barley (approximately 15 - 20 pounds)
April 13: Potatoes (quantity unclear)
April 27: Three pounds of meat for Easter
May 25: Barley (approximately 35 pounds)
July 6: Five varas (roughly 165 inches) of cloth

For many this simply was not sufficient to meet their needs. It was common for the individuals listed in this document to request additional suplidos of foodstuffs or to meet their ritual and community obligations at times of festivals or deaths. Several, like José Florentino Tutillo, had to request extra money for the burial of his son on April 17 of that year. At least four others also had to request money for the burial of family members, and two individuals had to do it twice within a matter of a month. On June 13, the same José Tutillo requested a sheep for the vigil of his father-in-law.

This type of ritual obligation was not uncommon considering that on other occasions money was requested for a son’s vigil (F38r), on several occasions potatoes were requested “for their fiesta” (F5, F36r), and another instance of requesting a money advance to pay the priest of Cangahua (F12r). In earlier examples, this was also common, including one woman who requested maize as a suplido “to help her husband in the fiesta” in November of 1833 (ANE, Caja 12, V2). It was also common in 1881 to request sheep or cattle for the occasion of weddings or Catholic holy days like Easter Holy Week and on the specific occasions of a wife giving birth (ANE, Caja 19, V1). During June of 1881 in the weeks leading up to the major solstice and harvest festival of the region (San Pedro), unprecedented numbers of workers, including an Indigenous mayoral, requested large quantities of potatoes and the meat of both sheep and cattle specifically for the festival days (ANE, Caja 19, V1). Despite the spiraling debt that these suplidos caused the individuals and their families, clearly they felt that the responsibility of meeting their ritual obligations to their families and community warranted these risks of financial
precarity. Perhaps meeting these obligations to their community, in fact, was one way of staving off precarity by ensuring a broader network of mutual support.

There is another striking aspect to the distribution of, and access to, food on the part of hacienda laborers as seen in the documents. A four-month snapshot of the daily accounting records from Guachalá between March 18 and July 3 of 1881 reveals drastically high levels of cattle of all ages dying at corrals in the valley as well as in the high páramo at Quinchucajas (ANE, Caja 19, V1, 1881). Most often they died from malnutrition, noted as “skinny” (flaco), or “sick” (enfermo). A total of 64 cattle died from poor treatment or malnutrition between those dates. In every case, the animal was butchered and given to the workers either at the obraje or served to the workers at the collective work parties called mingas where they toiled over the digging of new canals or harvesting the grains that, in order to consume, would put them in deeper debt. The feeding of so-called “downed” cattle presents serious health risks with higher risk of pathogen spread and simply is not considered a safe and nutritious source of protein (Ibis Mery, pers. communication 2021). This cautionary note of risky protein access is discussed later in this dissertation in the context of faunal remains excavated from Hacienda Guachalá.

As discussed in the previous chapter, archaeologists have only recently begun to make explicit interpretations regarding the issue of food insecurity. What they have made clear, however, is that the goal is not simply to identify a state of food insecurity in the past but rather to understand “the fundamental strategies and conditions that supported it” (Goldstein 2019: 426). Paul Goldstein refers to this as the creation of “infrastructures of food security,” a term which I borrow here in this analysis. Importantly, Goldstein suggests that these infrastructures of food insecurity exist within three “landscapes:” the physical landscape in terms of its productivity; the social landscape involving the relations by which food is produced, distributed
and consumed; and the modifications made to the built environment for improved productive potential.

The documents just discussed make clear precisely how the hacienda system implemented extreme infrastructures of food insecurity across all three of those landscapes. First, the concertaje system allotted land and a huasipungo in the most inhospitable, unproductive areas of land around the hacienda. The ecological transformation of grazing sheep and cattle further degraded much of the grasslands. Second, the concertaje labor system intervened in the social relations of the huasipunguero families, using physical confinement and punishment, as well as the individualizing discipline of debt and accounting. The system forced these families to care for the animals, seed and harvest the grains, all while financially weaponizing (through debt) the consumption of those resources by those same laborers. Finally, the canals constructed over the centuries by the hacienda work force generated valuable pasture lands and agricultural fields for the hacienda while diverting water access away from those same laborer families. The result was a dependence on planned rations of mostly barley, potatoes, (often tainted) meat, and cloth. Though starchy and energy-filled, this was not a nutritious diet and required the families to either somehow produce their own additional plants, barter with other families or traveling traders (mindalaes), or forage for wild plants. It is also clear that families adapted Old World grains like barley quite fully into their diets to the point that it is considered part of an Indigenous diet today. Interestingly, however, I did not see an example of laborers requesting barley as a suplido for fiesta days, whereas Andean maize and potatoes, along with meat were often requested for this purpose.

This bleak picture of food access contrasts sharply with the infrastructures of food security generated by the hacendados and top administrators. Gardens around the main house at
Guachalá, for example, describe the bountiful fruits and vegetables grown there, including capulies (with the cherry fruit), coconut, peach, orange, avocado among other plants. At the other nearby facilities like the cheesery San José in 1893 there were lettuces, cabbage, beets, cauliflower, carrots, capulies, almonds, and more (AHE, SG0002.16, 1893). This trend continues across time in the documents and at other annex properties, demonstrating a stark contrast in access to nutritious food sources (AHE, SG.0002.17, 1922).

There is more to the story, however. In the landscape of social relations, as Goldstein describes it, there are hints in the documents that huasipungueros forged strong ties of mutual support that were most visible at important ritual occasions like San Pedro (a solstice and harvest festival), or for weddings, funerals and vigils. Were these ties also practiced in everyday life? Did they provide additional constellations of support that might provide relief from the infrastructures of resource scarcity and dependency instituted by the hacienda and concertaje systems? This dissertation sought to understand this process and respond to these questions through an analysis of the quotidian foodways practiced by these individuals and the potential mechanisms in which they may have navigated the transformational process of the hacienda in their own “local social worlds” (Richard 2019: 614). Importantly, and as I discuss in the final chapter of this dissertation, many of the same struggles against these infrastructures of precarity and insecurity are ongoing today in Cayambe, inspired by ancestral agroecological knowledge and techniques.

4.7 Guachalá into the Twentieth Century

In 1892, Josefina Ascázubi Salinas de Bonifaz purchased Hacienda Guachalá, a connection between the García Moreno family and the Bonifaz family, which has inherited the estate ever since. Ascázubi was a daughter of García Moreno’s brother-in-law who married
Neptalí Bonifaz, a Peruvian political figure. As part of an aristocratic family, and with a large sum of inheritance from her father, she purchased Guachalá while mostly living in a large home on the main plaza of Quito, the Plaza de Independencia (Becker 1997: 140). Production continued at the estate, however, and upon her death in 1924 she left the property to her son Neptalí Bonifaz Ascázubi.

With this new landowner at the helm, Hacienda Guachalá would move into the twentieth century with a new, modernizing force. Neptalí Bonifaz was born in Quito but eventually moved his family to Europe between 1908 and 1926. When he returned, he made Guachalá his home and laboratory for new agricultural techniques based on his knowledge of economics and global production practices. When he took over there were 311 workers across the various areas of the hacienda, including 222 at Guachalá itself (Becker 1997: 143). Records of the estate show that he was able to improve economic efficiency of the estate during the 1930s and increase profitability. On the other hand, drama was never too far, particularly in 1931-1932 when Bonifaz won the presidential elections of Ecuador but was disqualified for questions over his Peruvian citizenship. A resulting four-day war ended with thousands dead and Bonifaz retreated to Guachalá (Becker and Tutillo 2009: 175).

Tensions between large landowners and the huasipunguero families scattered across Cangahua and the Cayambe landscape continued to rise over this time. In 1930, workers from Hacienda Pesillo in northern Cayambe rose up in strike through a newly formed peasant union, the first of its kind in Ecuador, demanding reforms to working conditions, indebtedness, and salaries (Becker 2004). Marc Becker suggests that with the organizational aid of rising socialist and labor movements, huasipungueros in Cayambe began to form “multiple modes of rural consciousness” that were based in both class and ethnic consciousness (Becker 2004). In 1944
rural labor activists, including women huasipungueros like Dolores Cacuango and Tránsito Amaguaña, formed the Ecuadorian Federation of Indians (FEI). Both women were born into huasipunguero arrangements on nearby haciendas and ultimately helped lead the movements for greater economic and cultural emancipation. They are remembered as fearless leaders of the Indigenous movement.

Meanwhile at Guachalá in 1944, it is clear that exploitative treatment of the huasipunguero families continued. The Provincial Inspector of Pichincha wrote to the administrator of Guachalá on January 5, 1944, to inform him that there were serious violations of the 1938 labor code, including salary figures, workdays and hours, and the forced labor of family members of contracted huasipungueros. The official ordered an end to these practices and the remuneration of any labor performed by family members not officially contracted by the estate with threat of heavy fines (AHE, SG000.2.20, F134, 1944).

This poor treatment apparently did not cease, however, because in 1954 the Indigenous huasipungueros at Guachalá rebelled because of these abuses. Workers had already submitted renewed complaints to the Ministry of Labor regarding the administrator, Cesar Troya Salazar. They claimed he had lowered their wages, threatened to erase the “rayas” of workdays that some had completed, and had failed to pay them for months of work. As no changes were made by the abusive administrator, on January 9, 1954, hundreds of laborers rose up to reject the treatment (Figure 4.11). Accounts of the events vary based on the sources, but in one account the administrators had returned to the hacienda house that day to find hundreds of workers chanting “we want meat” (Becker 1997: 258). Without a doubt, the infrastructures of food insecurity and general precarity had come to a head at Guachalá. Into the early morning the government sent
members of the national police force to quell the uprising and killed four huasipungueros, injured eleven and detained at least a dozen more (Becker 1997: 256).

This violent confrontation had profound effects on the people at Guachalá and the future of the estate itself. Three of the elder, former huasipunguero women that I interviewed as part of this dissertation had clear memories of this specific event, though all from afar. One recalled hearing the loud explosions and finding out that several huasipungueros had been killed. They recalled the abuse that all of them and their family members had suffered at the hands of the hacienda administrators. The events also represented a serious shift in agrarian political dynamics and increased pressure for agrarian reform. Beginning in 1959, the Bonifaz family began to distribute grants of land to dozens of Indigenous families, in total equaling around one thousand hectares (Becker 1997: 269). This process preceded formal agrarian reform by five years.

Figure 4.11 News of the uprising reaches Quito. (Combate: Diario de la Nacionalidad. January 10, 1954.)
years, in which title of lands was given to the former huasipunguero families across the highlands after 1964. Indigenous activists continued to push for reforms along both class and ethnic lines, advocating for bilingual (Spanish and Kichwa) education and land as an economic and cultural value and right.

In the years following the agrarian reforms of 1964, only modest changes in land tenure and opportunity emerged. Much of the land titled to former huasipunguero families was located on less fertile land, and over time these plots were insufficient to support household needs. Increased mechanization and the introduction of Holstein Friesian cows favored larger scale dairy production in the region, which continues today (Mena-Vásconez et al. 2020). By the mid-1980s, free-market, neoliberal economic models favored by the central government in Ecuador again opened places like Cayambe to external influences. This time, with the influence of foreign investment and development organizations like USAID, landowners turned to cut flowers as a new export industry for the future (Korovkin 2003; Krupa 2010; Lyall 2010, 2014; Soper 2013).

Cut flowers have quickly become among the most important exports from Ecuador, along with petroleum, bananas, and shrimp and have come to replicate a land tenure system that dominated Cayambe from the early colonial period. There are several interesting parallels to note here. First, just as the emerging obraje sector in the late seventeenth century generated labor migrations from places like Latacunga in the southern highlands to Cayambe, the modern flower industry has generated similar flows of migration from places like the Ecuadorian coast, Colombia, and more recently Venezuela. Additionally, several scholars have noted the parallel development of the flower plantations into the rule of “state by proxy” in rural areas (Krupa 2010). In true neoliberal form, the flower plantation owners have assumed many of the roles of the state in areas like infrastructure, building facilities like parks and medical clinics.
Today, the early morning and evenings around Guachalá and Cangahua are abuzz with the sounds of small motorcycles and the large yellow buses of flower plantations transporting its work force. The motorcycles are also the pride of young, male plantation workers who have been able to save enough money to purchase them to make the daily trek from their high-altitude communities to the valley plantations. Young women also comprise a major portion of this work force. A new production orbit has emerged in Cayambe with the undeniable echoes of centuries past. This discussion picks up again in Chapter 8 of this dissertation.

4.8 Discussion: The “Dependency Slot?”

This chapter has traced the history of socio-ecological transformation of the orbit around Hacienda Guachalá since prior to European colonization. The arrival of Spanish colonists generated novel assemblages of material objects, foreign flora and fauna, and cultural practices. The introduction of sheep and cattle remade the Cayambe landscape and, along with it, forced new processes of adaptation on the part of Indigenous families. The introduction of these new plants and animals wedged new forms of market logics into existing forms of social and economic relations that enabled the rapid growth of the hacienda system. In the northern highlands, it enabled the massive growth of the textile sector. Coercive forms of labor organization like concertaje worked simultaneously to force new relations of dependency on haciendas and hacendados on the part of the Indigenous population.

Over-grazing by the new flocks of animals and the over-production of cereal grains like barley and wheat, in addition to native products like maize and potatoes, caused erosion and landscape degradation. It also forced local families to adapt their own foodways to new sources of sustenance. Barley and the meat of cattle and sheep worked their way into local diets. By the nineteenth century, new sources of ecological interventions were introduced with the seeding of
eucalyptus to redress the injuries caused by earlier ecological degradation, including some of the first forests at Hacienda Guachalá itself. These legacies are ongoing in Cayambe and across the nation today.

In her far-reaching project to better understand histories of food production and food security in Ghana, archaeologist Amanda Logan (2020) points to decades of scholarly and popular representations of Africa writ large as one of scarcity and hunger. Borrowing from Michel-Rolph Trouillot’s (1991) notion of the “savage slot” to refer to the process of classifying groups of people into a specific “type,” she notes that much of Africa has been imagined through what she calls a “scarcity slot” based on uncritical imaginings of hunger and lack. Of course, this is not the whole story, and much of the food insecurity and hunger across parts of the continent today can be traced to specific historical and colonial processes.

I invoke this notion with the phrase “dependency slot” here because I find a similar process of imagining the rural highlands of Ecuador. In this imagining, populations of former huasipungueros and their descendants remain “typed” by a legacy of dependency on the hacienda for food and resources. On the one hand it is important to identify and highlight centuries of socio-political configurations that have constructed infrastructures of food and resource insecurity and dependency on laboring populations. That has largely been the subject of this chapter. But this story, which also largely mirrors traditional scholarly invocations of the hacienda system in Latin America in general, decenters the lives and decisions through which huasipunguero families navigated these constraints. The strength of the Indigenous movement in Cayambe today, influenced by the work of women huasipunguero leaders, as well as the power of agroecological movements all attest to the fact that the historical narrative misses a critical piece of the story.
In discussing this idea of the “dependency slot” I suggest that archaeological, ethnographic, and historical evidence can recast this history and more adequately understand the truly complex process by which Indigenous communities have dealt with external forces of land tenure. This dissertation seeks to re-center the experiences and lifeways of the huasipunguero families who have always been a central force in the making of global economies, from the colonial period to today.
CHAPTER 5: ARCHAEOLOGICAL DATA – SURVEY AND EXCAVATIONS AT HACIENDA GUACHALÁ AND PINGULMÍ

This chapter presents the results of archaeological fieldwork conducted at the two sites of Hacienda Guachalá and the community of Santa Marianita de Pingulmí, between 2014-2018. Chapter 3 described the methodological approach that guided this project and general descriptions of survey work, auger tests, and ground penetrating radar (GPR) scans that informed more intensive excavations. Results of this fieldwork are presented here. The first part of the chapter describes surface remains identified in basic reconnaissance survey between the current town (parish and administrative center) of Cangahua and Hacienda Guachalá and the excavations conducted around the core of Hacienda Guachalá. Following this, results of reconnaissance survey and excavations at Santa Marianita de Pingulmí are presented as a comparative context. Fieldwork at Pingulmí was limited to the 2018 field season and is more limited in scope but involves excavations of a house lot identified in the reconnaissance survey below the Pre-Columbian fortress site. This chapter will provide technical descriptions of these field operations along with brief summaries. The following two chapters will offer a more in-depth discussion and interpretations of the artifacts recovered from this work.

Together, archaeological material and oral historical accounts from former *huasipungueros* and descendants of the generations of families who lived and worked in and around Hacienda Guachalá provide a rich record of the political ecology of life under the hacienda land tenure system. The archaeological investigations were informed by these accounts and also designed to recover information that could provide deep historical knowledge of the daily lives and social dynamics of the huasipunguero families over several generations. As this dissertation indicates, the material world with which we carry out our lives is a key mediator of
social life. The next few chapters illuminate these material relations and what they mean for understanding the mechanisms of community in Cayambe.

5.1 Reconnaissance Survey: Cangahua-Hacienda Guachalá

As part of the aim of identifying potential activity areas and/or house lots around Hacienda Guachalá as well as across the landscape further from the architectural core, a judgmental reconnaissance survey\(^6\) was conducted during parts of 2017-2019. This was designed specifically to examine locations along the main road from Cangahua to the Hacienda, as well as areas in what became the descendant community of Pitaná Bajo and Buena Esperanza. Some areas were known to contain dense areas of surface scatters from prior years of fieldwork by Proyecto Arqueológico Pambamarca (PAP) teams. The area descends from an altitude of roughly 3,200 meters in the town of Cangahua to 2,800 meters around Hacienda Guachala along steep slopes and ravines moving down toward the hacienda. The survey strategy was admittedly limited in scope as an unsystematic reconnaissance survey alongside the main road but did enable the identification of several features and artifact scatters, which are described here (Figure 5.1).

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\(^6\) This type of survey is guided by prior knowledge like topography of the landscape and local historical knowledge. Due to land use and limited habitable areas along the road and ravines, this approach best targeted potential areas of huasipunguero residential patterns.
As expected, light scatters of green and yellow lead glazed ceramic sherds are found relatively frequently across the town of Cangahua, particularly where the ground is disturbed from farming practices, irrigation ditches, road construction, or more intensive clearing with machinery. This is particularly true of an area northeast of Cangahua atop a slope where a soccer field was recently cut out of the hill. Continuing to the north, a greater concentration was identified along a slope adjacent to the Cangahua River but without association to any surface architectural elements, evidence of cangahua blocks or linear features (southernmost circles in Figure 5.1).
The first major concentration of surface artifacts was identified just to the west of the main road between Guachalá and Cangahua. This consisted of mixed historic and pre-Columbian ceramic sherds and obsidian fragments in concentrations of roughly 5-20 artifacts/square meter. Ceramics presented both historic and pre-Columbian attributes, including yellow, green and polychrome glazes in addition to brown and red slipped wares and tripod legs typical of pre-Inca wares. Small remnants of terrace walls constructed of cangahua blocks were also identified in poor state of preservation following the downward slope toward the Pichimbiro Ravine. Toward the bottom of this slope at the northern extent the team identified a levelled surface cut into the surrounding bedrock with dimensions of approximately 4.5 x 4 meters (Figure 5.2). No architectural features were present but the levelled, flat surface was carved directly into the slope as is typical of the region today and in the past. Glazed wares were scattered across the area in relatively dense quantities, but without further investigation it is not feasible to determine when this lot would have been occupied. This lot is a candidate for further excavation as a possible house lot in the future. It is also possible that the feature was built as a small corral for sheep as is also common in the region, though the density of surface ceramics is higher than one would expect for such an activity.

Light scatters of yellow and green lead glazed and some polychrome majolica sherds remained visible across the surface in the communities of Pitaná Bajo and La Buena Esperanza. These are continually growing communities, begun during the period of agrarian reform that granted land from Hacienda Guachalá to former huasipungueros. Though oral history accounts describe the area as home to huasipunguero families previously, no dense scatters of material or

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7 According to hydrology maps of the parish, the “Quebrada Pichimbiro” runs along the main road to Cangahua along its western edge adjacent to the community of San Pedro. The Cangahua River runs roughly parallel on the eastern side of the main road.
surface remains indicative of domestic plots were identified in the areas that were available to
survey. The area is heavily farmed, including by flower plantations, meaning that a significant
portion of the area is either inaccessible, heavily disturbed, or occupied by contemporary
residents. Thus, while survey recovered additional linkages of activity across the landscape, the
reconnaissance did not identify specific house lots for additional investigation in this area.

Finally, survey also targeted the area referred to as “Molino Loma” in reference to the hill
on which the hacienda’s mill was located. Molino Loma is the location of the house lot
excavations described in this chapter (Operation 19) and a series of likely Inca or pre-Inca
storage structures that were excavated by PAP in field seasons 2007-2009 (Fries 2010). The goal
of surveying the whole area of the hill was to provide more continuous coverage and identify
potential associated artifact scatters indicating activity areas or structures that were less visible as
a result of overgrown brush.

Indeed, four distinct areas of artifact scatters were identified, though extremely light in
terms of numbers or density, particularly in comparison to Operation 19, where surface
architecture was surrounded by dense surface ceramics. More importantly, one structure was
identified and recorded in association with a terrace wall overlooking the school of Buena
Esperanza. This structure is in severe risk of deterioration as it is located on a precipice created
by the mining of pumice-filled cangahua present in the hill (Figure 5.3). The structure was
rectangular with dimensions of 5.5 meters (N-S) x 4.5 meters (E-W), comprised of two interior
rooms with an apparent wall separating them. The structure’s walls were constructed of
cangahua blocks of about 50 centimeters width. Ground visibility was low around the structure,
and artifacts were not identified in association on the surface. There was, however, a terrace wall
of cangahua blocks that followed the contours of the hill and continued directly behind this
structure. Based on visible evidence of the terrace wall, at least 82 meters were identified and recorded with GPS points. The terracing likely once extended beyond this prior to deterioration.

Summary

The survey work conducted between the outskirts of the town of Cangahua and the area around the core of Hacienda Guachalá provided evidence of human activity across the landscape. This was a physical reminder that the huasipungo labor system and the demands of the hacienda required work and residences across the entirety of the zone. Together with evidence found by PAP investigations between the town of Cangahua and the páramo zones around Quitoloma fortress and Hacienda Pambamarca, this evidence demonstrates life across the three ecological zones from the valley to high-altitude páramo. The surface remains largely included ceramics of mixed temporal attribution and without controlled excavation it is difficult to characterize the precise occupation periods of the remains identified. Nevertheless, the presence of the yellow and green lead glazed ceramics proved once again to be a consistent indicator of colonial and/or post-colonial activities.

The area of most intensive occupation, as expected, was Molino Loma just behind the architectural core of Hacienda Guachalá. While the pre-colonial storage rooms and the domestic house site of Operation 19 were already known, the remnants of terrace wall and the associated structure were previously unrecorded. Its precise period of construction and use is unknown but likely was roughly contemporaneous with the OP19 lot described later in this chapter.

The difficulty of locating the residential sites of laborers in historical archaeology is a common issue since these were most likely to have been built with ephemeral construction materials. The poor preservation of those sites biases our analyses toward the remains of elite families. Nevertheless, the identification of house lots on Molino Loma (Operation 19) and away
from the hacienda at Santa Marianita de Pingulmí (Operation 78), as well as the domestic and workspaces at the hacienda’s obraje, provided a unique set of contexts to consider the everyday lives of resident laborers. These excavations are the subject of the following sections.
Figure 5.2 Detail of reconnaissance survey area from Cangahua-San Pedro. Top right shows detail of terrace wall remnant. Bottom right shows leveled surface created for either domestic structure or animal corral.

Figure 5.3 Detail of reconnaissance survey area around Hacienda Guachalá. Top right shows detail of possible water containment structure. Bottom right shows structure of unknown use on precipice above schoolyard.
5.2 Excavations at the “Casa de Obraje” (OP21)

For much of its history, the obraje was the main engine of economic output at Hacienda Guachalá. Chapter 4 described the physical organization of the architectural core, including what was known as the “casa de obraje” in estate documents. Those descriptions, in addition to the oral accounts of local descendants, indicate that the space was not solely dedicated to work tasks but rather included domestic quarters of at least some of the work force. The organization of these quarters was not clear, however, and appeared to be quite distinct from other Latin American haciendas where the work force was quartered in gridded worker villages or compounds of adjacent rooms (Sweitz 2012; Terese Newman 2014).

The area referred to as the “casa de obraje” would have looked quite different than it does today, with additional walls enclosing the space and an archway into it. Today, this entrance space is now an open driveway leading up to the home of the property owners who reside in what was previously the mill complex. The earliest photos of the hacienda, to my knowledge, come from the 1930s and help to piece together written descriptions from estate inventories like those described in Chapter 4. It appears that none of the photos were taken from the interior of the obraje, however. As seen in Figure 5.4, the space leading into the casa de obraje was originally part of the open patio area of the main entrance to the estate (not the current main patio) and seems to have been an area in which individuals gathered socially, at least on occasion.
Based on this understanding of the spatial delimitations of the casa de obraje, excavations in Operation 21 (OP21) aimed to capture the activities that occurred in various “built divisions” of the area and ground-truth the anomalies found in the GPR survey explained in Chapter 3. The GPR picked up anomalies that could have indicated the presence of the 14 latrines mentioned in estate inventories (AHE 0002.15, 1891) from at least the 1890s and likely first constructed when García Moreno was at the helm beginning in 1868. In addition to ground-truthing those anomalies to identify possible latrine features, the main goal was to expose portions of living surfaces across the area to understand daily practices and lived experience at the obraje. Latrines are typically excellent sources of artifacts that speak to these topics because they contain concentrations of refuse that residents discard continually, leaving piles of this quotidian “trash.”

Figure 5.4 Photo of men and women hacienda laborers gathered in front of the entrance to the casa de obraje (left-most archway) and the entrance to the current main patio of the main hacienda architecture (right-most archway). Also notice established eucalyptus trees in background and in the open space. Photo ca. 1930s, courtesy of Diego Bonifaz.
As seen in Figures 5.5 and 5.6, Operation 21 comprises the entire area enclosed by the outer rectangle, which was subdivided for excavation purposes into Built Divisions 1-3, outlined by dashed-lines, and excavated in 2016-2017.

**Figure 5.5** Aerial drone image of Hacienda Guachalá with Operation 21 outlined by outermost rectangle, referring generally to the “casa de obraje” and the individual Built Divisions within Operation 21 outlined by dashed lines. Drone image courtesy Mark Willis.
Unit 18 was the first placed along the easternmost wall of Built Division 1 with the aim of locating the latrines described in estate inventories or otherwise characterizing the use of that space and potential differences with the other Built Divisions of Operation 21. The unit measured 2 meters (N-S) × 1 meter (E-W). Level 1 was surface topsoil with contemporary refuse mixed in. This sat atop a compact layer of packed cangahua, which had been intentionally cut in circular form in the southern end of the unit. This circular feature (Feature 1) contained loose, silty soil with scattered cangahua blocks and the edges of the circular shape were orangish in color, consistent with sustained burning (Figure 5.7). The only artifacts recovered from this unit were located in this soil matrix and included 3 small fragments of plain utilitarian wares and a...
polychrome glazed sherd. Roughly 15 centimeters below, an ashy silt layer was exposed within the feature. This level only extended another 3-5 centimeters, however, and included no artifacts. While the circular feature cut out of the cangahua initially appeared to be a possible latrine, excavations suggest that it was more likely a space for heating water or dyes for the obraje in large ceramic or metal cauldrons.

**Figure 5.7** View facing north of Unit 18 with Feature 1 in southern end of the Unit.

**OP21, Built Division 1, Built Space 1 – Unit 19**

Unit 19 was a 1m (E-W) x 0.5m (N-S) unit placed in the NE corner of the same built space and similarly placed to locate latrines or otherwise characterize the use of that space. After removing Levels 1-3, a similar circular feature was identified, cut into the cangahua bedrock just as was exposed in Unit 18. This feature did not display the same orange color, however, and the
feature extended significantly deeper than that of unit 18. The soil matrix within the circular feature was comprised of ash and white pumice primarily, with two large bricks and a cangahua block (Figure 5.8). The remaining matrix within the feature was comprised entirely of granules of pumice, which exists naturally in the area and is still mined for its good drainage properties as a soil additive.

The feature was determined to have an 80-85 centimeter diameter at the top and a total depth of roughly 60 centimeters (or 130 centimeters below surface) (Figures 5.8 and 5.9). The pumice fill within the feature was largely devoid of artifacts except for five fragments of a large earthenware vessel, including one rim fragment (Figure 5.10). While at first it appeared this could have been a latrine feature that was ultimately cleaned out and filled, the most likely possibility is that it was a hole dug into the ground to place large earthenware vessels used in the obraje process, similar to examples found in the new chapel at the estate (Figure 5.11). The measurements of those large vessels fit the measurements of the feature, and may indicate that vessels were placed in holes like this as support.
Figure 5.8 Close up of circular feature in unit 19 (OP21, BD1, BS1) before it was excavated. At top of the feature’s pumice fill was a layer of ashy silt and brick fragments.

Figure 5.9 Feature 1 of unit 19 with pumice matrix removed.
Units 20 and 21 further tested the space along the east and north walls, respectively, to determine if more circular features existed. Unit 20, a 1x1 meter unit, did not expose any features and only scant material. Unit 21, in contrast, did present a similar circular feature cut into the cangahua bedrock. Based on its depth of about 25 centimeters it was more similar to the shallow feature of Unit 18 than that of Unit 19. Within the feature was a dark yellowish-brown soil (10YR 3/6) with heavily eroded metal scraps, including at the very bottom of the feature.

**OP21, Built Division 1, Built Space 1 – Synthesis**

The excavations in this built division seem to indicate that the area was primarily used as a workspace, likely for the operations of the obraje. One major indication of this is the lack of faunal remains as compared to the other built divisions described in the following sections. The
strategy of testing along the eastern and northern walls was intended to capture evidence of consecutive holes that would have been made for the latrine features described in historic documents. While three circular features were identified, the shallow depth of two of them suggests that these features were more likely used for the placement of either ceramic or metal vessels like those described in the material inventories of the obraje. The smaller features would have fit the copper cauldrons typical of both obraje operations and cooking, and the large pit feature in Unit 19 matches the dimensions of the large ceramic vessels still present on the property today (Figure 5.11).

Figure 5.11 Large earthenware vessel on display in newest chapel of Hacienda Guachalá. Vessel is of uncertain provenience but possibly from the hacienda itself. The widest diameter measures 75 centimeters, with roughly 55 centimeters from base to the widest point on the body. These measurements fit the dimensions of the large feature in unit 19.
**OP21, Built Division 2, Built Space 1**

Excavations in this Built Division of Operation 21 were guided by the results of a Ground Penetrating Radar survey conducted in 2016, as described in Chapter 3. It was presumed that this area, along with Built Division 3, was the most likely space to correspond with descriptions in estate inventories that described a combined obraje work area and domestic area inhabited by some of the obraje workers. As detailed below, excavations concur with this hypothesis and offered an important material data set to understand the material conditions of life at the obraje. The location of Units 2-6 are depicted in Figure 5.12. These five units are all adjacent to each other and developed as extensions of Unit 2 as various features were identified and followed through unit additions as described in the following sections.
Unit 1 was a 1x1m unit placed on the far eastern end of the courtyard. This space was not part of the GPR survey and was intended to test the stratigraphy of the area. While Unit 1 did provide a stratigraphic sample, it was not otherwise instructive as it was largely devoid of any evidence of domestic architecture, activity, or latrine construction. All additional excavations were therefore placed along the GPR anomaly.

*Built Division 2, Built Space 1 – Unit 1*

*Figure 5.12 Aerial View of Operation 21, BD2, BS1, the obraje patio. Image shows the location of Units 2-6 in this Built Division. (Drone image courtesy Mark Willis.)*
**Built Division 2, Built Space 1 – Unit 2**

Unit 2 was the first unit placed specifically where GPR detected a strong subsurface anomaly (Figure 3.3). To uncover the anomaly, the unit measured 2 meters (N-S) x 1 meter (E-W) with the aim of exposing at least one of the end points of the anomaly as well as a significant portion of the feature itself. Based on estimates of the depth of the anomaly from GPR at approximately 40 centimeters below surface, 20 centimeters of the surface was removed as level 1. Level 2 continued down until exposing 4 stones aligned north-south. The stone alignment was labelled Feature 1 and was further exposed as part of level 3 to separate soil and artifacts. The feature continued in a north-south alignment spanning the entire length of the unit and was identified as a wall foundation. Archival descriptions of walls across the estate, including the obraje, describe the construction technique as cangahua walls with stone foundations. This feature matched the archival description.

Because this feature indicated a wall, the areas to the east and west of it were excavated separately, as Locus 1 and Locus 2, to distinguish them as potentially two different rooms or exterior versus interior spaces. In fact, the loci were quite different. Removing Locus 2, to the east of the wall foundation, exposed an area of stone floor associated with the wall. The soil of locus 2 itself consisted of very organic, carbon-mottled and compact silt and ash, representing soil deposited directly on top of the stone floor beneath (likely post-dating the use of the stone floor). On the other hand, no stone floor was exposed below Locus 1, to the west of the wall foundation (Figure 5.13).
**Built Division 2, Built Space 1 – Unit 3**

In order to follow what appeared to be a stone floor underneath the locus 2 soil of Unit 2, an extension was made an additional one meter to the east, with the same total dimensions of 2m x 1m. In Unit 3, the first 40 centimeters of soil were removed, which exposed a compact, carbon-mottled Grayish Brown soil (2.5Y 5/2) with faunal remains and ceramic sherds presenting hearth blackening as with unit 2. This layer was labelled Level 2 in this unit but corresponds with Locus 2 of Unit 2, which had the same compaction, soil matrix inclusions, and very similar Munsell color (10YR 3/2, Very Dark Grayish Brown).
After removing this Level 2 soil, it became clear that the concentration of large stones continued as a stone floor and this was labelled as Locus 2 to denote the soil matrix associated with this stone floor. Of particular note was the identification of multiple in situ faunal remains between the stones of the floor along with glazed and unglazed ceramic sherds (Figure 5.14). One of these sherds presented a decorative palette of blue-on-white, which may correspond to a type reported by Jamieson as a polychrome majolica likely produced in Quito during the eighteenth century. While the dating of this particular sherd cannot be determined with confidence, based on associated contexts described in the next sections, the stone floor and wall foundation may date at least as early as the eighteenth century with use extending well into the nineteenth century. Here, as opposed to the contexts already discussed in Built Division 1, the material was consistent with domestic activities, or at least the presence of evidence of food preparation or consumption. The higher frequency of faunal remains within the floor provides primary evidence of the preparation of cow, sheep, goat, and one guinea pig mandible. The remains represented direct evidence of activities from the occupation and use of the stone floor.
Figure 5.14 Operation 21, BD2, BS1, Unit 3 stone floor (Locus 2) with arrows indicating in situ faunal remains.
The question that remained was whether this space could be better defined specifically as an interior living space or simply an open patio of sorts where mixed activities would have taken place. To investigate further, an additional extension was made to the north as Unit 4, measuring an additional 2m x 2m. By removing Level 1, several features were exposed roughly 40 centimeters below surface (Figure 5.15). The stone wall foundation first identified in Unit 2 continued into Unit 4 on the western side and was labelled Feature 1. There was also a lens of grayish, carbon-mottled, compact soil in a circular shape at the southern end of Unit 4, labelled Feature 2. Finally, another Dark Gray (7.5YR 4/1) carbon-mottled, compact soil lens was exposed along the eastern profile of the unit and labelled Feature 3. Both of these carbon-filled lenses contained glazed and unglazed ceramics, including at least two plates and a bowl. Some also presented hearth blackening. The circular shape of Feature 2 signaled the possible presence of a hearth and the shape did persist upon removing the soil as a circular alignment of stones was exposed below. Nevertheless, there was not convincing evidence that Feature 2 was a dedicated hearth and could have been a sparsely used burn area or a lens of carbon-ash soil that was dumped there when the surface was eventually filled.

The most important observations from Unit 4 related to the stone floor and a concentration of refuse labelled Feature 4. First, the regular and horizontally-placed stone floor seen in Units 2 and 3 suddenly became quite irregular and chaotic in Unit 4 (Figure 5.16). There, the stones were not deposited in an even, flat manner, but rather appeared more characteristic of wall fall or a secondary context. It is worth noting, however, that the lenses on top of these stones were similar to lenses removed from atop the stone floor in Units 2 and 3, which suggests
that the stones in Unit 4 may also have been found in their primary context. But why these would be deposited so differently is still not clear.

The stone wall foundation only continued about 30 centimeters north into Unit 4 from Unit 2 before disappearing into the irregular stone layout. To the west, the soil was labelled Locus 1 for consistency with Unit 2 and presented a high concentration of lithic, ceramic, metal, faunal and glass artifacts. This concentration of artifacts was referred to as Feature 4 and appears to have been a heavy concentration of refuse at about the level of what would have been the base of that architectural wall (Figure 5.16). Based on the artifacts identified within the feature and the surrounding context, the feature located in Unit 4 is best considered a concentration of refuse that could either indicate work activities related to the obraje process or domestic activity. The mixture of glazed and unglazed ceramics, glass bottles fragments, a cow tooth, and a glass bead along with stone tools represent an ambiguous category of refuse. Curiously, a fragment of a “Murray & Lanman” Florida Water glass bottle, an all-purpose cologne and skin soother, was recovered from this Feature and is discussed in more detail in Chapter 6 and 7. A single whiteware sherd with purple transfer print decoration in the Feature indicates a date of at least the 1830s, likely slightly later. Based on the deposition of the concentration, the wall foundation was likely already in place prior to that date.

The lithics of Feature 4 indicate work tasks, including at least two mano fragments, a mortero, and other uncategorized “tools” that show retouch and use wear (including possible scraping). The slate/schist tools were likely used to abrade some raw material, but without microscopic wear analysis it is hard to know (Dyrdahl and Falcón 2019). One could imagine that lithic tools like these were used to process raw materials such as walnuts to create dyes for the cloth, but the tools also could have been used to process food as well. In short, the artifact
concentration represented by Feature 4 appears to be a build-up of both refuse fragments and stone tools in various stages of manufacture, use and discard. Some of the specific artifacts are discussed in more detail in the next chapter.

As a final step in seeking to understand the use and deposition of the irregular stone layer in Unit 4, a small test window of 1m x 1m was removed in the northeast corner to determine if there was a more regular stone floor below, an earlier stratigraphic layer, or other information that could help to understand the irregularity of the stones. There was minimal material within the soil matrix of the stones and below them, including a green lead glazed ceramic sherd, and less than two fragments each of cow, sheep and a guinea pig cranial fragment. The soil below the stones was a silty loam and the presence of a glazed ceramic sherd within that matrix below the stones shows a solid, post-contact deposition. The information does not indicate a more specific chronology of the stones within the historic period, however. Given adequate time, it would be useful to remove the stones in Unit 4 and the stone floor in Unit 3 to continue excavating below. It is possible that earlier occupation levels existed, but time did not permit this.
**Figure 5.15** OP21, BD2, BS1, Unit 4 showing exposure of first 3 Features. Units 2 and 3 are adjacent to the south.

**Figure 5.16** OP21, BD2, BS1, Unit 4. Photo at left shows irregular deposition of stones as compared to the stone floor exposed in Units 2 and 3. Right photo shows a close-up of Feature 4, a refuse concentration in the western profile on Unit 4.
Units 5 and 6 are both half meter (0.5m) extensions to the west of units 2 and 4. Because the small refuse concentration (Feature 4) extended into the western profile of Unit 4, it was extended 50 cm to the west as unit 5 to follow it. The total dimensions are thus 2m x 0.5m. Level 1 represented the surface topsoil and ended at the top of Level 2 where scattered brick fragments were horizontally deposited on top of a new, Brown (10YR 4/3) soil matrix. Removing Level 2 exposed the top of Level 3 where there was evidence of an artifact concentration that corresponded with Feature 4 of Unit 4. This was removed separately and did not contain significant additional material to that excavated from Feature 4 already. As with the confusion of Unit 4, in Unit 5 there was also significant irregularity of large stones in association with the Feature 4. Unfortunately, it was impossible to expand any further because just west of Unit 5 is the obraje building with contemporary constructions along the adjacent surface.

After the Unit 5 extension, another extension was made to the south as Unit 6. This extended the previously excavated Unit 2, a half meter (0.5m) to the west. The primary aim of this extension was to gain greater clarity of the use of space on this western side of the wall foundation versus the activities to the east that were better defined in Units 3 and 4. As throughout Units 2-5, a layer of gray, carbon-filled compact soil was exposed approximately 35-40 centimeters below the surface. And as with Units 2-4, below this layer was another section of regularly deposited horizontal stone floor (Figure 5.17). Interestingly, there was another concentration of refuse above the southern part of the stone floor, filled with architectural materials like roof tiles, including a green glazed roof tiles, brick fragments, and what seemed to be glaze slag and potential waste products of a kiln. This is an interesting possibility because estate inventories do mention that roof tiles were produced on the estate around the obraje area,
at least as early as 1819 and possibly as early as 1783 (AHE, SG.0002.12, F95r, 1783; AHE, SG.0002.13, F41r, 1819). This refuse was labelled Feature 1, while the stone floor beneath was labelled Feature 2.

The stone floor, referred to as Feature 2 of Unit 6, is similar to the stone floor of Units 2 and 3 in terms of both the regularity with which the stones were horizontally placed as well as the ceramic artifacts identified within the floor (Figure 5.17). Ceramics in this section of the stone floor and the associated locus included 31 total glazed sherds and 64 unglazed total sherds. The glazed sherds represented a diverse decorative palette, including blue-on-white majolica also identified within the stone floor on the other side of the wall foundation as well as brown and green on buff. Faunal remains of mostly sheep were also recovered from this stone floor, though in relatively small numbers. The soil matrix around the stone floor (Locus 1 and 2) and into which the stones were deposited consisted of a Dark Brown (10YR 3/3) sandy silt.
Built Division 2: Synthesis

The excavation units conducted in Built Division 2 of Operation 21 exposed an important section of what would have been part of the “casa de obraje.” Based on the excavations detailed above in Units 2-6, a few general conclusions can be made. First, the associated stone floor and wall foundation match physical descriptions from estate inventories beginning in the late eighteenth century. Those documents, as reviewed in Chapter 4, suggest that outside of the main enclosed building of the obraje, was a series of small patios, passageways, work rooms, and living quarters. Construction materials, according to the documents, including a mixture of stone
and earth floors, cangahua walls with stone foundations, and a mixture of straw and tiled roofs. The remains exposed in Units 2-6 match these descriptions.

The organization and use of the space is less clear, however. To the east of the wall foundation, there were two distinct patterns of stone deposition. To the south was a clean stone floor with horizontally deposited stones while to the north in Unit 4, there was a clear difference in irregularly deposited stones. They did not appear to be wall fall on top of a more regular floor, however, so the cause of these distinct patterns is curious. Nevertheless, the stone floor context, particularly in Units 2 and 3, provided an excellent context for the recovery of everyday material remains from within the floor itself. As described above, this included cow, sheep, goat, and small numbers of guinea pig remains, obsidian flakes, and glazed and unglazed ceramics, many of which presented hearth blackening. This area presents compelling evidence of daily life, including tasks like food preparation and/or consumption, which likely occurred simultaneously with the daily rigors of work at the obraje.

To the west of the wall foundation there were some similarities and a few important differences. First, a section of stone floor was also exposed on this western side in Unit 6 and it presented small amounts of faunal remains and both glazed and unglazed wares with common decorative motifs. These ceramics presented a lower frequency of hearth blackening, however. Additionally, two concentrations of refuse to the west of the wall provide mixed evidence of tasks that could have been associated with the labor the obraje or domestic tasks, or a mixture of both. Based on the mixed use of the space from estate documents, it is not surprising that refuse concentrations reflect a mixture of social and obraje work-centered activities.

In general, these units revealed a multi-use space, including a wall and associated stone floors, which may have been parts of open patios, interior rooms, or a mixture of uses. The stone
floors provided important contexts for the recovery of in situ artifacts that speak to the everyday lives and networks of those dwelling in these spaces. The artifacts are described in much greater detail in the following chapters.

**Built Division 3, Built Space 1**

This Built Division refers to a space just south of the current courtyard just described in Built Division 2 (Figures 5.5 and 5.6). The distinction is based on current architectural divisions, though the area was also likely to have been subdivided in the past since estate inventories consistently describe a complex series of rooms, patios, and passageways. This Built Division thus also refers to the “casa de obraje” and the aim was to define any potential similarities or differences in the use of this space versus that of Built Division 2. This space is closer in proximity to the mill complex (now the home of the property owners) and closer to what was likely the main entrance of the obraje, turning left once inside (Figure 5.4).

**Built Division 3, Built Space 1 - Unit 1**

Unit 1 was located in a corner abutting the back of the main obraje building, adjacent to the window looking into one of the rooms, which may have been used as the *escribanía* (administrator office) (Figure 5.18). The unit measured 1 meter (N-S) x 1.5 meters (E-W). The unit was placed specifically across an alignment of stones through the middle of the unit in a N-S direction that was visible on the surface. The unit was divided into two separate loci, locus 1 to the west of the stones and locus 2 to the east. The property owner reported that this area was filled in during his lifetime to raise the level of the surface, and as expected, the unit presented about 80-90cm of modern rubbish fill. The fill on either side of the stone alignment was different, however. The western portion contained more modern trash while the eastern portion
contained bricks, cangahua blocks, and stones. The western portion had been kept open longer, after the rest had been filled in order to keep moisture away from the foundation of the building.

Beneath the thick fill layer, a couple of important observations were made. First, below the stone alignment, was a massive stone block (ultimately measured 35cm width x 60 cm height x at least 75cm length but it continued into the southern profile) that divided the Unit just as the stones had on the surface. Additionally, to the west of this block a stone floor was exposed. To the east, stone floor was also exposed beneath a thin lens of what appeared to be soil with white, granular mortar (Figure 5.19). Both stone floors were likely contemporaneous but part of distinct spaces as separated by the large block. To the west, the stone floor was comprised of smaller cobbles (5-20cm) relative to the floor on the east (15-30cm). Additionally, just below the small cobble stone floor on the western portion was a second layer of larger stone cobbled floor, which did not exist on the eastern side.

Interestingly, Locus 2, to the east, presented higher quantities of artifacts than locus 1, which supports the idea that Locus 1 was a passageway against the wall of the building since material would be less likely to accumulate there. In contrast, the area on the eastern side of the wall division could have been part of a larger open patio space or interior of a structure where material goods would have been more likely to fall. The artifacts were small fragments, consistent with floor activity where stomping would have resulted in smaller fragment size over time. The artifacts included one of the greatest diversity of decorated ceramics from any of the hacienda contexts, including large plain coarse earthenware jars, green lead glazed earthenwares, polychrome majolica, green-on-white majolica, and at least three imported teawares. The teawares included blue and black transfer print, the latter of which would not have been available
until the 1830s at the earliest. The assemblage from this space thus indicates a largely domestic activity, particularly relative to the units excavated in Built Division 2.

The final level excavated in this unit was a 25-centimeter ash layer (10YR 6/1 – Gray) in the eastern half of the unit (Locus 2). This level contained both glazed and unglazed coarse earthenwares, including light, medium and dark green glazed wares (n=29), some with exterior hearth blackening. This ashy layer also contained faunal remains, almost all of which were sheep. None of the artifacts served as a helpful dating tool and so it is not clear precisely when this layer was deposited, though it does appear to have been intentionally deposited as a subsoil for the stone floor above and the massive stone block, which was also placed above it. This unit did not reach sterile soil because of time constraints. Based on the subsequent excavation of Unit 2 just to the east of this unit, it is possible that additional occupation surfaces did exist below level 4.
Figure 5.18 View of the corner in which Unit 1 was located with the window to what may have been the escribanía. Photo by the author.

Figure 5.19 View of OP21, BD3, BS1, Unit 1. Photo at right shows stone floor in Locus 1 (on western side) and mortar lens covering the stone floor in Locus 2 (eastern side). Photo on left shows a close-up view of the bottom layer of stone floor in Locus 1 with a green lead-glazed ceramic sherd sitting atop the stones.
Built Division 3, Built Space 1 - Unit 2

During the following year, an additional unit was excavated to expose a wider area of the space revealed in Unit 1. Since the artifacts recovered from Unit 1 indicated a diversity of ceramic wares, Unit 2 had the aim of recovering a larger sample size to assess this further and determine the use of the space with more precision. The unit measured 2m (E-W) x 1 m (N-S) and was located one meter east of Unit 1, and a half-meter south (Figure 5.6).

As with Unit 1, the first 80-90 centimeters of soil was a modern fill event described by the property owner to raise the surface level. It contained roughly one meter of contemporary fill that raised the surface level to its current height. Beneath this fill layer, a stone cobble floor was exposed on the eastern side of the Unit (Locus 1), covered with a thin lens of compact clay (10YR 2/1 Black). This lens did not contain any artifacts and it was removed to fully expose the stone floor. The stone floor did not extend throughout the unit, and seems to have been contemporaneous with a compact, organic loam (10YR 4/2 Dark Grayish Brown) associated with it to the west (Level 3) (Figure 5.20). The floor is likely contemporaneous with the stone floors identified in Unit 1 based on elevations, though its construction is distinct with smaller cobbles (mostly 5-10cm) with a line of intentionally placed longer stones (25-40cm length). This is a design common even today for stone cobble surfaces, including the current main patio of Hacienda Guachalá. It is unclear why the stone surface did not continue throughout the unit, but it is possible that stones were retasked eventually for projects in different parts of the property at the time that the area was raised to its current surface level. Artifacts associated with this stone floor surface were similar in type and diversity to those of Unit 1, with variations of unglazed,
green glazed, and polychrome majolica ceramic sherds. Identifiable faunal remains included only sheep.

Upon lifting the stones of the floor, a Dark Brown (10YR 3/3) silty loam was exposed beneath, similar to the soil adjacent to the floor, which may indicate that the floor had once extended throughout. There was another layer of fill beneath the stone floor (Level 4) with few artifacts and no diagnostic ceramics. About 45 centimeters below the first stone cobble floor in this unit, a second likely stone floor was exposed as Locus 2, 145 centimeters below the surface. Along the northern side of the unit, there was an alignment of large stones that seemed to be intentionally placed sideways so as to delimit the extent of the stone floor (Figure 5.20). These had been deposited into Level 5, a looser sandy loam (10 YR 3/2 Dark Grayish Brown) that was relatively rich in artifacts and may represent another fill layer used to deposit the sideways stones. Whereas there were scant artifacts directly associated with this floor, Level 5 around it contained relatively higher density of artifacts, which were largely domestic. Ceramics included plain and glazed coarse earthenwares, one small fragment of a purple transfer-printed whiteware, and two rim fragments determined to be restricted vessels of 17-20 centimeter diameters that were undecorated and hearth blackened on the exterior. Additionally, a single metal drop earring was recovered from Level 5 (Figure 6.8). This was a rare example of adornment from the excavations, and it is noteworthy that it was recovered in this Built Division, where the highest diversity of ceramics was also found. Unfortunately, due to lack of preservation the decorative motif of the earring could not be made out.

The final level excavated in this unit was Level 6, identified below Level 5 and the stone floor as a more dense, Dark Brown loam (10YR 3/3), which was also the richest in artifacts (Figures 5.21 and 5.22). Ceramics recovered from this level included at least three very large jars
of between 25-40 cm thickness and over 40 cm estimated rim diameters. In addition to these, there was a diversity of green glazed and polychrome majolica (green-on-white, brown and green-on-white, brown-on-buff). There were no imported refined earthenwares, which makes it harder to date this level. But given that this is also the deepest level, it is possible that this serves as further evidence of an earlier occupation date for Level 6 prior to the early 1800s. Interestingly, this level also presented the most diverse assemblage of faunal remains, including sheep (NISP=67), cow (NISP=14), poultry or birds (NISP=12), and native rabbit and deer (both NISP=2). A large fragment of an andesite mortar (14x17cm) was also recovered, further evidence of food preparation in this space.

Level 6 was about 20 centimeters thick. Based on the artifacts and the deposition order, this level may represent the refuse from a period of use prior to the construction of the stone floor above it. Based on readings of the estate inventories between the eighteenth - twentieth centuries, the obraje area saw various episodes of remodeling and changes in the physical structures, including the materials used for walls, roofs, and floors. Some parts are described as made of stone while other areas are described as earthen floors. It is possible that Level 6 dates to a period when the space existed with an earthen floor and a later remodeling placed the cobbles above it. Alternatively, Level 6 could represent a fill that was placed in order to construct the stone floor, with the fill including dense refuse material.
Figure 5.20 Operation 21, BD3, BS1, Unit 2. Top photo shows first layer of stone floor (Locus 1) on eastern side of Unit and the opening of Levels 4 and 5 to the west. Bottom photo shows second layer of stone floor (Locus 2) in association with Level 5, into which the sideways stones were deposited.
Figure 5.21 Operation 21, BD3, BS1, Unit 2, Level 6. Level of dense refuse material.

Figure 5.22 Eastern profile of OP21, BD3, BS1, Unit 2.
Built Division 3: Synthesis

Units 1 and 2 of Built Division 3 successfully exposed an additional area of the obraje. Each unit presented occupation surfaces in the form of stone floors, which were not consistent in their construction style. It appears that Unit 1 uncovered two distinct spaces that may have represented either side of a wall that separated a passageway alongside the obraje building from the activities of the interior of the area. This interior area, of which Unit 2 helped to illuminate further, contained stone cobble surfaces with in-situ artifacts that were mostly domestic in character. This included diverse ceramic wares, faunal remains dominated by sheep, and cow in lesser frequencies, as well as very minimal remains of wild animals like rabbit and deer that would likely have provided a rare supplementary source of protein provisioned by laborers themselves. These units largely mirrored the expectations based on readings of the estate inventories, which describe the “casa de obraje” as a combination of open patios, workshops, structures, and some domestic quarters, all of which had varying degrees of earthen or stone floors.

5.3 Excavations at “Molino Loma” House Lot (OP19)

The excavations conducted on Molino Loma, the hill behind and overlooking the main estate architecture on its eastern side, were specifically aimed to identify the use of an area that had visible remains of dense ceramic scatters and two perpendicular cangahua block alignments on the surface. This was the most dense scatter of ceramics identified at the hacienda and extended out over 20 meters from the main concentration associated with the architectural wall features. In 2003 and 2009, PAP placed three test units across the visible cangahua block walls and recovered rich assemblages of ceramic and faunal remains. As part of this dissertation project, additional units were placed in the area in 2014, to better define the extent of the
potential structure, the activities for which it was used, and a sense of the occupation dates of the site. The site is located atop the hill and thus was subject to natural taphonomic forces that would have eroded soils down the slope in the direction of the estate architecture itself.

Because it was originally assumed that the two visible cangahua block alignments were part of a complete structure, the area was divided into various Built Spaces in order to separate material from distinct spaces that may have corresponded with interior or exterior spaces of a house, for example. These divisions can be seen in Figure 5.23.

Figure 5.23 Overview of Operation 19 excavation units, 1-11, and their location on Molino Loma. (Top left drone photo courtesy Mark Willis. Bottom left aerial imagery from Google Earth.)
Operation 19, Built Division 3, Built Spaces 1-2, Units 1-3

Units 1-3 were previously excavated by PAP in 2003 and 2009 along the main E-W block alignment visible on the surface. Unit 1 was placed to expose 2 meters of this architectural feature (E-W) and measured 1.5 meters (N-S). This unit presented high densities of artifacts on the surface according to the excavation records and this continued well into Levels 1 and 2. Level 2 referred to a layer of soil directly above a floor surface, which was an earthen, packed cangahua surface likely hardened through human stomping. This surface was found in association with an alignment of cangahua blocks. These blocks continued as expected but did not maintain the form of an intact wall. This may be a result of poor preservation and “wall fall” where the blocks became disarticulated from a wall due to natural taphonomic processes.

It is also possible that these blocks served various purposes, including as an area of food preparation. Several findings point to this. First, some of the blocks presented the distinctive orange color of burnt cangahua. This is generally the result of sustained burning such as occurs with a hearth. Associated with this area was a dense assemblage of faunal remains, which included mostly cattle and sheep (artifacts discussed in more detail in Chapter 6 and 7). A high number of these remains presented direct exposure to fire as evidenced by either black, gray, or white color (Figure 5.24). High densities of utilitarian ceramics, both glazed and unglazed were also recovered here. These included high numbers of “pots” with hearth blackening and “jars” with large diameters between 20-40 centimeters. A red transfer-printed whiteware associated with the occupation surface dates it to after the 1830s. Finally, a large andesite “anvil” or general stone working surface was exposed in direct association with this wall or concentration of blocks (Figure 5.24). While the anvil was not taken from the field and analyzed, analysis of photos clearly show direct wear on the flattened surface typical of such tools (Eric Dyrdahl, personal...
communication 2021). All the evidence thus reflects a domestic activity area characteristic of food preparation. Regardless of the original construction of the wall, or whether it was both a boundary marker and convenient space for food preparation, the key finding from Unit 1 was the definitive food preparation activity.

In 2009, PAP excavated two additional units in this context, Units 2 and 3. Unit 2 was placed as a 5m x 1m trench in a north-south direction to capture any potential differences in artifacts on either side of the cangahua block wall as well as to expose the wall feature itself. Unit 3 was excavated as a 2m x 2m unit, 4 meters to the east of Unit 2 in the corner of the perpendicular cangahua walls visible on the surface. In Unit 2 the face of the wall was better defined and appeared to be a better-preserved section (Figure 5.25). The occupation surface in both units was again exposed in association with this wall at only about 10-30 centimeters below the surface, reflecting long periods of constant erosion at the site, which very likely includes wind erosion and may be a product of the colonial and post-colonial period animal grazing.

Ceramics in Units 2 and 3 were also utilitarian wares that were both glazed and unglazed. While they included identifiable forms like cooking pots and jars or other restricted vessels, these units were less dense in artifacts than Unit 1.
Figure 5.24 OP19, Unit 1. Photo at left shows the stone “anvil” (large, general grinding surface) in association with the alignment of N-S cangahua blocks (photo from PAP 2003). Photo at right shows a sample of thermoalterations of faunal remains from Unit 1 (Photo taken by Ibis Mery).

Figure 5.25 OP19, Unit 2. Photo looking north showing the southern face of the primary cangahua block alignment. This is the main architectural feature of OP19 but was likely a spatial delimitation rather than structural wall. (Photo from PAP 2009.)
Units 4 and 5 were the first units excavated specifically as part of this dissertation project following the information recovered by PAP earlier in Units 1-3. Because those units had exposed domestic activity with dates that appeared correlated with the project’s target during the mid-nineteenth century, the initial aim with additional excavation units was to attempt to define the footprint of what appeared to be a structure. Units 4 and 5 were small test units (1m x 1m) placed to test areas away from the surface architecture to identify possible “yard” activity areas where surface ceramic scatters were located (Figure 5.23). Unit 4 was placed to the east of the cangahua walls (BS3) while Unit 5 was placed to the north (BS1). Both units recovered scant evidence and extremely shallow stratigraphy, hitting sterile cangahua at between 10-20 centimeters below surface.

Unlike the relatively visible wall remnants on the northern and eastern sides, there is little surface evidence of architecture that would indicate the physical footprint of the remaining two sides of a structure. Units 6 and 8 were placed to investigate this problem with the goal of defining the limits of what was assumed to be a four-walled structure.

Unit 6 was a 3x1m unit placed to the south of the main east-west cangahua wall, 3 meters north-south and 1 meter east-west. The objective was to characterize a possible alignment of cangahua blocks and stones that appeared to sit in an east-west alignment. Though four large cangahua blocks were visible on the surface and exposed further upon excavating Level 1, they were not associated with the occupation surfaces known for this context. In fact, excavation of Level 2 did not expose any further alignments or concentrations of cangahua blocks.
utilitarian ceramic assemblage recovered from Level 2 was, however, consistent with the previous units and included one fragment of a 50-centimeter diameter tiesto griddle with hearth blackening, another cooking vessel fragment, and green lead glazed ceramics. Faunal remains included cattle and other unspecified ungulates. This material was determined to be associated with the cangahua occupation surface, which also presented a bovine metapodial (cow lower limb) fragment. The unit therefore did not clarify structure footprints but did recover additional domestic material culture specifically for cooking tasks.

Unit 8 was a 3 x 1.5m unit placed 1.5 meters east of Unit 6 along the same orientation to provide more conclusive evidence, either affirmative or negative, of the assumed back wall. On the surface several cangahua blocks were visible, mostly toward the middle and northern parts of the unit. Levels 2 and 3 refer to soil associated with concentrations of cangahua blocks, including 7 that presented the orange color indicative of prolonged burning. These blocks were irregular but may have originally formed an informal hearth area. This interpretation is supported by a concentration of silty ash identified in Feature 1 of Level 4. Feature 1 was a small “pit” filled with this silty ash (10YR 4/2) that had been cut into Level 4, the occupation surface. At the interface between this occupation surface and Level 3 above were several horizontally deposited ceramics (Figure 5.26). A single purple transfer-printed whiteware recovered from the occupation surface is consistent with the post-1830s dates found in the other units.

The similarity in soil colors and types, and the difficulty in differentiating cangahua blocks from other soil matrices makes identification of ephemeral features in this region difficult. Nevertheless, it seems likely that this was, in fact, a hearth area, perhaps less formal in use. The hearth area consisted of a concentration of cangahua blocks, several of which were burnt to an orange color. This was associated with the earthen occupation surface upon which were several
utilitarian and hearth blackened ceramics directly adjacent to it. Additionally, elsewhere in the occupation level was a green glazed bowl and another tiesto griddle fragment with hearth blackening (Figure 5.26). Both hearths identified at Operation 19 thus were associated with tiesto griddles.

Figure 5.26 Top: Photo facing east of likely hearth feature in OP19, Unit 8. Note burnt cangahua blocks (orangish color) and concentration of ceramics in association. Bottom: Tiesto rim fragment (exterior and interior) found in association with hearth feature from Unit 8.19C14.164.1.
Operation 19, Built Division 3, Built Spaces 1-2, Units 7 & 9

Units 7 and 9 were both placed over the main east-west cangahua wall, building on information gathered from Units 1-3 in 2003 and 2009 to investigate further its possible spatial limits and identify additional activity areas and potential refuse. Based on the high density of material recovered from Unit 1 in 2003 along this wall, Unit 7 (2m x 2m) was placed just to the west with the aim of defining the westernmost extent of the wall and possible corner of a north-south wall that would have represented a potential west wall (corner) for the structure. A secondary aim was to identify additional features and/or material culture associated with the food preparation area in Unit 1.

In Unit 7, high densities of artifacts were recovered even in Level 1 and this continued throughout the excavation of this unit to the earthen occupation surface (Level 4). This surface was directly associated with the likely continuation of the main E-W wall and dense artifact concentrations recovered from the wall feature itself (Feature 1) and from Level 3 directly above the surface. The faunal assemblage associated with these primary contexts was dominated by cow and sheep, as well as goat in lesser numbers and also included a single pig molar and cranial fragment of guinea pig. Butchering marks were present on several fragments as well as some that presented evidence of direct exposure to fire. The ceramic assemblage was consistent with other units as well, including a tiesto griddle fragment, a large handle of a likely storage vessel, and other lead glazed, slipped, and plain utilitarian wares.

Unit 9 was also a 2m x 2m unit placed on the main cangahua wall, east of Unit 1. This unit was divided from the start into BS2 south of the wall and BS1 north of the wall for consistency, and the wall itself was excavated as Feature 1. Both Built Spaces presented dense
artifact concentrations along the wall feature in all levels. As with other units in Built Space 2, south of the wall where most of the activity seems to have occurred, an earthen occupation surface was exposed below Levels 1 and 2. The E-W wall feature did continue in the northern portion of the unit as expected. Faunal remains included both cow and sheep as well as a single long bone of native páramo white-tailed deer (*Odocoileus ustus*) with an incision mark. Ceramics were similar to those of adjacent units, reflecting utilitarian coarse earthenwares, at least two more tiesto griddles, and additional green lead glazed wares. One fragment of a tripod leg is an example of the presence of pre-Columbian wares in the area, which is not surprising given that a series of storage rooms (likely Inca or pre-Inca colcas) are located in close proximity on the same hill.

*Operation 19, Built Division 3, Built Space 2, Units 10-11*

Unit 10 was a 3 x 2.5m unit placed to the south of Units 1 and 7 with the aim of exposing a much broader area of what was hypothesized to be an interior of the structure (Figure 5.23). The unit did not expose any further architectural evidence, however, and presented extremely shallow stratigraphy equal to the adjacent units, reaching sterile cangahua bedrock only 8-15 centimeters below the surface. Any discarded artifacts from this area likely would have collected downslope by the main wall over time, though some discard was recovered. This included the remains of cow, two fragments of which presented butcher marks. Fewer ceramics were recovered in this unit as well, but included plain, yellow and green-glazed utilitarian sherds.

Unit 11 was a 2 x 1m unit placed to expose a section of the perpendicular wall running north-south in the context (Figure 5.27). Removing soil from Levels 1 and 2 exposed a sort of double-coursed wall of cangahua blocks similar to the east-west wall already described. There was about 40-50 centimeters of soil between each course, however, which is not typical of a
double-coursed wall used as a structural component. The artifacts were again consistent with food preparation activities, including an additional minimum of two tiesto griddles.

*Figure 5.27* Photo facing north of OP19, Unit 11. This feature is the perpendicular N-S alignment associated with the primary E-W alignment shown in Figure 5.25.

**Synthesis of Excavations at Molino Loma**

The eleven excavation units conducted in Built Division 3 of Operation 19 on Molino Loma exposed an important nineteenth century context directly associated with the operations at Hacienda Guachalá just down the hill. There is no doubt from the artifact assemblage and the presence of at least two probable hearths that the area was used rather intensively for activities including the preparation of food. The assemblage, considered in greater detail in the following
chapter, was dominated by utilitarian ceramics like hearth blackened “pots,” jars and storage vessels, and tiesto griddles for toasting grains like maize and barley. The faunal assemblage, consisting primarily of cow and sheep in addition to goat and only scant remains of native guinea pig, rabbit, and white-tailed deer, is further consonant with this description.

Nevertheless, there are still unknowns regarding the use of these spaces. For example, excavations did not find a footprint of an entire structure as expected. Instead, the perpendicular “walls” were likely land partitions or windbreaks. It is possible that a house of ephemeral construction may have sat there, with only the material refuse remaining as evidence of the domestic occupation. Alternatively, the space could have been used as a food preparation area for huasipungueros working in various parts of the estate property, or even by families who may have lived in structures elsewhere on the hill, like those recorded in survey seen in Figure 5.3. In this case, the assemblage would be the result of multi-family use and food preparation. Regardless of the exact domestic arrangements here, the Molino Loma excavations recovered an important body of evidence to speak to the lived experience of labor and ecological change at the estate during the nineteenth century.

5.4 Survey at Santa Marianita De Pingulmí (OP78)

Pedestrian Survey

Survey through the valley corresponding to the community of Santa Marianita de Pingulmí confirmed the presence of domestic terraces throughout the valley below the fortress site of Pingulmí that were first hypothesized through observation of aerial imagery. Some terrace walls of cangahua block construction were identified in varying states of preservation, though their construction dates are difficult to determine without further archaeological investigation. This would clarify whether some of the terrace walls were originally associated with the fortress site and re-utilized during later historic periods or first built during historic periods. In addition to
the terracing, the survey identified 9 distinct built divisions based on the remains of surface architecture and surface artifact scatters, largely associated with the architectural remains.

Figure 5.28 presents the locations of surface artifact scatters, architectural remains, and other surface features like terrace walls or pit features. The characterization of the function of each of the built divisions is based on the available evidence gathered in pedestrian survey, with the exception of BD1, which was tested with excavation units in 2018. There did appear to be a distinct difference in the use of structures based on the presence or absence of surface artifacts. BD1, for example, presented dense concentrations of ceramic sherds, as did BD4, BD7 and BD8. These are therefore characterized as likely domestic structures. BD5, BD6, and BD9 presented varying amounts of artifacts and are characterized as either domestic or storage structures. BD2 and BD3 are located in close proximity to BD1 (the large domestic structure) but were completely absent of surface artifacts. As a result, they are characterized as likely corrals or agricultural storage rooms (Table 5.1).

Table 5.1 OP78 Surface Architecture. List of Built Divisions identified in survey. Built Division 1 was excavated in 2018.

<table>
<thead>
<tr>
<th>Built Division</th>
<th>Coordinates</th>
<th>Description</th>
<th>Excavated?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-0.006172°, -78.200501°</td>
<td>Domestic Structure</td>
<td>Y</td>
</tr>
<tr>
<td>2</td>
<td>-0.006506°, -78.200079°</td>
<td>Likely Corral/Storage</td>
<td>N</td>
</tr>
<tr>
<td>3</td>
<td>-0.006777°, -78.199729°</td>
<td>Likely Corral/Storage</td>
<td>N</td>
</tr>
<tr>
<td>4</td>
<td>-0.005838°, -78.200313°</td>
<td>Domestic Structure</td>
<td>N</td>
</tr>
<tr>
<td>5</td>
<td>-0.005449°, -78.198787°</td>
<td>Domestic Structure/Storage</td>
<td>N</td>
</tr>
<tr>
<td>6</td>
<td>-0.005494°, -78.198203°</td>
<td>Domestic Structure/Storage</td>
<td>N</td>
</tr>
<tr>
<td>7</td>
<td>-0.006344°, -78.201632°</td>
<td>Domestic Structure, likely mid-late 20th century</td>
<td>N</td>
</tr>
<tr>
<td>8</td>
<td>-0.012506°, -78.200115°</td>
<td>Domestic Structure</td>
<td>N</td>
</tr>
<tr>
<td>9</td>
<td>-0.004699°, -78.205976°</td>
<td>Large Corral, Communal use?</td>
<td>N</td>
</tr>
</tbody>
</table>
Built Divisions 1-4 were subject to more intensive investigation, including surface survey, plan drawing, or excavation. Two of the structures identified in this sector (BD1, BD4) contained relatively dense quantities of surface material – mostly ceramics – in the space directly in front. In order to begin an analysis of the material associated with these structures, and as a point of comparison between the two, we conducted a surface collection at both structures in transects spaced at 1 meter apart. This also provided a data set by which to compare potential differences in use between these two structures and others located in survey, such as structures BD2 and BD3 located uphill from BD1. We collected only diagnostic material as a sample by
which to analyze the assemblage more quickly and efficiently. This did, however, bias the sample away from undecorated, unglazed body sherds, which were not collected.

BD1: In front of BD1 (toward the west) we laid out 13 transects of 25m length spaced every 1 meter to procure full coverage survey of the area. In general, density of material was high, around 130 objects (mostly ceramic) per 25 meter transect. Based on lab analysis of only collected material, this surface collection represents a minimum vessel count (MNV) of at least 13 vessels. These include plain, brown slipped, yellow and/or green lead glazed, and polychrome decorated glazed wares. Surface material also included low amounts of unidentifiable glass shards and obsidian flakes.

BD4: In front of BD4 (toward the north) we laid out 14 transects of 25m length spaced every 1 meter to procure full coverage survey of the area. Based on lab analysis of only collected material, this surface collection represents a minimum vessel count (MNV) of at least 10 vessels. These include plain, brown slipped, yellow and/or green lead glazed, and polychrome decorated glazed wares. Surface material also included low amounts of faunal fragments and obsidian flakes.

Table 5.2 OP78 Surface Collections.

<table>
<thead>
<tr>
<th>Surface Collection Ceramics</th>
<th>Ct</th>
<th>Wgt (g)</th>
<th>Density (Ct/m²)</th>
<th>Density (Wgt/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Built Division 1</td>
<td>81</td>
<td>617</td>
<td>24.92</td>
<td>189.85</td>
</tr>
<tr>
<td>Built Division 4</td>
<td>32</td>
<td>300</td>
<td>9.14</td>
<td>85.71</td>
</tr>
</tbody>
</table>

In contrast, BD 2 (Figure 5.29) and BD 3 (Figures 5.30-5.32) were characterized by a complete lack of surface material associated with the structures. This observation suggested that the two structures had been utilized as agricultural storage areas or as corrals for sheep or other animals. Both built divisions are cut into the surrounding sloped bedrock and finished with
cangahua blocks with an average width of around 30-40 centimeters. BD3 presents a cangahua wall that closes off the space on its western side. The wall is a two-course wall with a width of about 50 centimeters. The wall continues in a perpendicular fashion so as to close the space in concert with the cut bedrock (Figures 5.30 and Figure 5.31). BD2 does not present a similar wall on its western side but does present cangahua blocks used along the sides to add height to the cut bedrock. This may indicate that BD3 was originally a closed space while BD2 was only closed on 3 sides. Both are similar in size as BD2 has an interior area of approximately 30.25 m² and BD3 has an interior area of approximately 26.9 m².

**Figure 5.29** OP78, Built Division 2. This structure was first cut into the surrounding bedrock slope and finished with walls of cangahua blocks for a total of 3 closed sides. (Measuring stick contains 20cm. increments, total of 1.4m)
Figure 5.30 OP78, Built Division 3. This structure was first cut into the surrounding bedrock slope and finished with walls of cangahua blocks, enclosing the space on all 4 sides. (Measuring stick contains 20cm. increments, total of 1.4m)

Figure 5.31 OP78, Built Division 3. Close-up of western wall cross-section. (Measuring stick contains 20cm. increments, total of 1.4m)
5.5 Excavations at Santa Marianita de Pingulmí (OP78)

Based on the identification of surface remains throughout the valley and the time available for investigation, Built Division 1 was selected for more intensive testing through excavation. The excavation strategy was to test distinct built spaces of the structure in order to understand a few pieces of information: First, what were the approximate dates of occupation of the structure, and would stratigraphic excavation reveal multiple occupation periods dating to the use of the fortress site above as well as later historic periods? Second, what was the nature of the activities at the site, and would the material remains indicate distinct activities in the built spaces or rooms? Finally, how would the artifacts compare to those excavated from house lots associated with Hacienda Guachalá?
These technical questions were intended to answer the broader research questions regarding potential differences in the lives of families bound to Hacienda Guachalá relative to those of independent communities like Pingulmí. The opportunity to compare domestic assemblages of Indigenous households from the nineteenth-early twentieth centuries is rare due to the issue of a lack of preservation of such ephemeral sites. Excavations of BD1 provided precisely this opportunity.

After clearing the area of brush to gain better ground visibility, we divided the area into seven distinct built spaces. It was not immediately clear if there was an original structure onto which certain spaces (or rooms) were later added. In total, we excavated 3 units of 1x1 meter each spread out across the distinct built spaces. Figure 5.33 shows a plan view of the Built Division with each distinct built space identified. The units were excavated in BS2, BS4 and BS5.

![Plan view diagram of OP78, Built Division 1, including three test unit excavations (dotted square pattern).]

Figure 5.33 Plan view diagram of OP78, Built Division 1, including three test unit excavations (dotted square pattern).
Operation 78, Built Division 1, Units 1-3

Unit 1 was placed in BS4 of Built Division 1 with the purpose of determining the use of the space associated with the wall cavity located on the same back wall of the structure against which unit 1 was placed. The unit contained very little material, consisting of fragments of roof tiles at the interface between level 1 and the top of level 2 and 2 burnt coarse earthenware sherds in level 2. These sherds would have been associated with the occupation level, which appears to have been the cangahua bedrock. There was also a small lens of ash associated with this occupation level. This built space was likely used for activities associated with agricultural work, such as the storage and processing of crops. According to community members, the wall cavities are often used to place animals during the night to protect them from predators. There was no indication of any earlier occupation of this space as the structure wall did not continue further below the historic strata of the unit.

Unit 2 was placed in the southeast corner of Built Space 2, in what was seemingly the main interior part of the structure and likely original space due to its central position against the back wall dug out of the bedrock. Level 2 was also defined here with a horizontal deposition of roof tiles but in unit 2 these were located on top of ashy soil with high concentrations of carbon. After locating a brick with clear indications of burning and associated cangahua blocks with characteristic orange burning marks, we determined this was a likely hearth and was excavated separately as Feature 1.

Feature 1 was a compelling hearth feature composed of at least 5 cangahua blocks arranged somewhat irregularly in a circular fashion (Figure 5.34). The blocks presented evidence of major burning with the characteristic orange coloration and the presence of ash and carbon on and around the blocks. There was one brick with evidence of burning on its underside as well.
Importantly, we recovered several sherds of cooking vessels on and in direct association with the hearth, most of which presented hearth blackening, indicating they were in situ materials used over the hearth. One of the most intact fragments was a yellow and green glazed jug with a strap handle, presenting a yellow glazed interior and green glazed rim with additional green line decoration around the center of the exterior body (Figure 5.35). The jug was determined to have a 14-centimeter rim diameter. After removing the hearth, the hard packed and burnt cangahua living surface was exposed throughout the unit.

Unit 3 was placed in the northern part of Built Space 5 to determine any differences in use of this built space as well as to determine any difference chronologically with Unit 2 as this space could have been an architectural add-on to the original structure. This unit presented similar stratigraphy to the other two units, with the living surface of packed cangahua exposed as level 2. Deposited on top of this surface were roof tiles as with Units 1 and 2. A 5 centavo coin from 1928 was recovered in a corner associated with the living surface. This helps to date the living surface or occupation to at least as early as 1928 with the roof and wall collapse (which was on top) to sometime after 1928. This is to say that the structure was likely occupied or standing until at least 1928, after which the home was abandoned. A late nineteenth – early twentieth century occupation of the structure is likely.
Figure 5.34 OP78, BD1, Unit 2, Feature 1. Closeup of hearth feature in southeast corner of house structure. North arrow lies on top of the occupation surface, a packed earthen surface that was also likely burnt from its association with the hearth. Ceramics recovered in association with the hearth feature.

Figure 5.35 Yellow and green lead-glazed earthenware jar. Interior is yellow glazed. Rim is green glazed on the interior and exterior sides. This jar was recovered adjacent to the hearth feature in Unit 2.
The survey, surface collections and test excavations of BD1 offer important information by which to interpret the cultural features of the valley and Built Divisions 1-4, more specifically. As hypothesized from aerial images, the valley does appear to have been heavily terraced below the fortress site of Pingulmí. There is not conclusive evidence (at this point) to suggest that the terracing was contemporaneous with the occupation of the fortress, though this is certainly possible and may be illuminated with future excavations at other Built Divisions.

Instead, families of the community at Santa Marianita de Pingulmí appear to have built and occupied the structures and terraces reviewed above during the late nineteenth and early twentieth centuries. This time period corresponds to a shift from the conservative rule of García Moreno and the Conservative party to the Liberal Revolution led by Eloy Alfaro beginning in 1895. This occupation period therefore overlaps with contexts excavated on the other side of the fortress site on the lands of Hacienda Guachalá. The two contexts offer comparative assemblages of families whose daily lives or, at the very least, labor conditions, would have been quite different as members of an independent community versus indebted laborers to the Hacienda.

Both Built Division 1 and 4 appear to be house sites with multiple rooms, gabled roofs with roof tile construction. Built Divisions 2 and 3 are likely corrals and/or agricultural processing spaces. BD2 and 3 did not have associated surface artifacts and were only one-roomed structures as opposed to BD 1 and 4. It is likely that BD 2 and 3 were utilized by the families that lived in the house structures, though it is impossible to say if the families were related in any specific kin relation. Besides these two lots, at least three other structures were identified across the ravine and on the opposite side of the valley. The settlement pattern was
therefore likely one of scattered house plots and associated agricultural lands located at middle elevations of the valley slopes. This concurs with local informants who claimed that climatic conditions in the past were quite different, with current extreme dry conditions forcing inhabitants to the valley floor where the community primarily lives currently.
CHAPTER 6: AGRARIAN LIFEWAYS IN THE ORBIT OF GUACHALÁ

In this chapter, I describe and interpret the artifacts recovered from the excavations conducted in the obraje (Operation 21), the domestic activities on Molino Loma (Operation 19), and the house lot at Santa Marianita de Pingulmí (Operation 78). The previous chapter described the excavations conducted in those three contexts with particular emphasis on characterizing the activity at each with only general reference to the artifacts recovered. This chapter describes the artifact assemblage in more detail and provides comparison among the three contexts. The following chapter will also place the artifact assemblage in context with comparative sites elsewhere in the Andes and Latin America more broadly. The material goods recovered from these spaces are essential to understanding how families navigated life during the social, ecological, economic and political changes of the postcolonial nation during the nineteenth and early twentieth centuries.

Archaeologists of the Spanish colonial world have long understood domestic artifacts as a performance of ethnic identities and social statuses (Deagan 1983, 1987). In this dissertation I argue for a more active role of everyday materiality beyond simply signaling relative elite or lower status or ethnic affiliation. Instead, I suggest that the material goods, or yanga cosas, as I have referred to them, foregrounded a set of social relations that forge collective identities and social statuses that depended more on honoring everyday obligations and relationships in a setting in which those formations were actively discouraged. The yanga cosas recovered in archaeological work were not just reflections of life or ethnic identity in the orbit of Hacienda Guachalá. Rather, the objects that residents acquired, made, exchanged, and used for a variety of tasks, mediated the very ways in which they performed their daily lives and understood their own identities as part of broader communities and social networks. Importantly, the artifacts offer
important clues to understand how lives were textured through relations with other individuals and families, non-human ecologies of plants and animals, material exchange networks and market relations, financial policies and political ideologies. The everyday household materiality of huasipunguero life is thus integral to understanding the political ecologies of the hacienda system historically and contextualizing powerful social currents of rural life in Cayambe today.

The material assemblages from these contexts consist primarily of ceramic wares and faunal remains, with smaller proportions of lithic tools and other manufactured goods like glass bottles. Information on total artifact distributions for each context can be found in Tables A.1 – A.3 in Appendix A. I review each of these categories for the three main contexts in this chapter and contextualize them in Chapter 7 with a review of comparative materials from historic sites across the Andes and Latin America.

6.1 The Study of Colonial and Republican Period Ceramics in the Andes

In contrast to years of analysis of Pre-Hispanic ceramic wares in the study area, there is a comparatively small corpus of information related to colonial and post-colonial ceramics on which to build. Plain, coarse earthenware ceramics often make up the majority of Spanish colonial period site assemblages and require local analysis as a result of their local production. Glazed wares, both lead and tin-enameded, have proven to be a complicated ceramic category to analyze as a result of their likely production in urban centers across the Andes and lack of systematic study. Early colonial majolica produced either in Spain or early colonial Panama has long served as an important chronological and social status marker in the historical archaeology of Latin America. But locally produced majolica and other glazed wares, particularly from later, Republican period sites require additional attention that only an increase of geographic coverage
and systematic study will enhance. I provide a brief overview of the study of glazed ceramics in the Andes to contextualize my approach and terminology in this chapter.

Early majolica tablewares became an important symbol of Spanish ethnicity in the colonies, and soon after the establishment of more permanent settlements across the Americas, it appears that potters began to make local variants. In general, majolica refers to tin-enamed ceramics, originally with a variety of European, Muslim, and Asian influences. The addition of tin to lead glazes creates an opaque cream or whitish background on which polychromatic designs could be added (Lister and Lister 1974; Rice 2013). At first, majolica was imported to the Spanish colonies from Spain and Europe but by the mid-sixteenth century majolica was already being produced locally in places like Mexico City and Puebla, Mexico as well as what is now Guatemala (Jamieson 2001: 46; Lister and Lister 1974). Additionally, by the late sixteenth century, kilns were established at Panama Viejo where majolica was produced and distributed across Latin America until its demise in 1671. Panamanian majolica is characterized by a brick red paste with various decorative palettes, including plain white, blue-on-white, and polychrome decoration using black, green, blue and brown (Goggin 1968; Jamieson 2001). Examples of Panamanian majolicas have been found at sites across the Andes, including Moquegua, Lima, and the South Coast of Peru, as well as Quito, Cuenca, Guayaquil, and Buenos Aires, Argentina, among others (Buys 1990; Chancay 2004; Jamieson 2000, 2001; Jamieson and Hancock 2004; Jamieson et al 2013; Rice 2013; Schavelzon 2002; Smit 2018; Smith 1991; Weaver 2015).

In the Andes, local production of lead glazed ceramics and majolica existed in Lima and Cusco, Peru and in Quito, Ecuador by the late sixteenth or early seventeenth century as well (Rice 2013: 260-261; Stastny 1981). In Quito, tin-glazed ceramics that appear to be local productions rather than either Spanish or Panamanian have been recovered from excavations in
the historic center of the city (Buys 1990; Jamieson 2001: 54). Documents have shown that Jesuits were producing “loza” in Quito by 1635 but it is unknown whether this referred to lead glazed or tin-enamedled wares (Rice 2013). Other “loza” workshops existed in different parts of the city during the eighteenth century, including an operation begun in 1771, which closed by 1788 as a result of competition from increasing foreign imports and competition in places like Cuenca (Paniagua Perez 1995).

Archaeometric analyses have offered a more recent technique by which to understand the possible local production of majolicas around colonial and Republican period Ecuador in the absence of the physical remains of kilns or documentary sources. Studies using Neutron Activation Analysis (NAA) have begun to establish elemental signatures of clay sources by which to correlate certain decorative patterns with various production centers (Jamieson and Hancock 2004; Jamieson et al. 2013). Ross Jamieson’s analyses of ceramics from Cuenca and Riobamba in the southern and central highlands of Ecuador have established preliminary groupings for a variety of pre-colonial and colonial ceramics.

The analyses have shown that Quito producers supplied Riobamba markets with a variety of glazed wares, including more expensive, decorated wares and lower-grade, green lead glazed ceramics used for tasks like cooking and storage. Furthermore, their work has established that the Quito industry produced distinct color palettes, including a brown and green palette over pink or reddish-yellow background, and a blue-on-cream palette. While distinct decorative motifs, they share a similar chemical signature based on paste samples (Jamieson et al. 2013: 206-207). Importantly, some examples of green glazed ceramics and other polychrome wares had chemical signatures consistent with a local, Riobamba manufacture. This fact highlights the difficulty of determining the production place of glazed wares recovered in excavations like those from
Hacienda Guachalá without a broader sample that securely correlates decorative patterns with clay sources. Additionally, because of the lack of documentary sources pinpointing specific production centers or larger samples from stratigraphically controlled excavations, glazed wares in Ecuador still do not provide tight chronological information such as that available for imported British wares after the late eighteenth century. This lack of fine-grained chronological ceramic sequences in the Andes poses problems more broadly for researchers studying issues specific to the Colonial-Republican period transitions (Corcoran-Tadd 2017: 28).

While more information remains to be learned from these ceramic wares in Ecuador, some preliminary observations are also possible. For example, the brown and green on pink and the blue-on-white palettes that Jamieson has connected to a likely Quito production site have also been recovered in excavations at Guachalá (Figures 6.1 and 6.2) and neighboring areas like Oyacachi (Serrano Ayala 2017: 64-65). Archaeometric (pXRF) analyses of a sample of sherds from Guachalá have been conducted to determine whether the chemical signatures of the ceramic pastes match those tested by Jamieson, but these results are not yet ready at completion of this dissertation. For now, based on visual comparison it is possible that these polychrome glazed wares were produced in Quito and acquired via exchange networks. In any case, for the interpretations below, it is assumed that such polychrome glazed wares were produced in more distant urban centers, whether Quito, Ibarra, Otavalo, or perhaps further. Plain, coarse earthenwares are considered here to be locally made vessels acquired via exchange networks with local Indigenous communities, as are simple green and yellow lead glazed wares. While significant work remains to be done to more accurately understand the regional markets for ceramic goods in the colonial and post-colonial Andes, these preliminary understandings inform the artifact analyses discussed below.
Finally, because the archaeological study of glazed ceramics in the Andes is still a growing field, there are often discrepancies in terminology that can complicate comparison. For the purposes of this dissertation, I use the term majolica to refer to glazes that appear to be tin enameled, giving the body a whitish or cream background, on which blue, green or polychrome colors are painted. Other polychrome glazed wares lacking the opaque white or cream background of typical majolica are referred to here simply as polychrome lead glazed. Further analysis can determine the precise glaze recipes, which may include some tin content, though likely in much lower proportions. Regardless of the precise terminology, the following analyses speak to the important webs of materiality and networks of material exchange through which residents in and around Hacienda Guachalá navigated the circumstances of the nineteenth and early twentieth centuries.

Figure 6.1 Selection of polychrome glazed wares recovered from OP21, which are representative of the primary decorative palettes recovered from all excavations at Hacienda Guachalá. The top two sherds, blue-on-white and brown and green-on-buff, are comparable to examples seen in letters “e” and “g” of Figure 6.2, determined to be manufactured in Quito by Jamieson et al. (2013: 208). Top left, blue-on-white: 21C17.681.12; Top right, brown and green-on-buff: 21C17.662.28; Bottom left, Brown-on-buff: 21C17.687.22; Bottom right, Green-On-White majolica: 21C17.689.35.
As described in the previous chapter, the archaeological evidence strongly suggests that the area excavated as part of Operation 19 on the hill east of the main hacienda house is a domestic context. The space was likely a house lot known as a huasipungo or home to a household tied to the hacienda in a similar labor arrangement. The artifacts recovered from these excavations support this identification and provide a valuable lens on the lives of those who lived there. The residents used a predominantly unelaborated and locally made set of cooking and serving wares. The foods that they prepared and consumed followed largely communal-style foodways. Additionally, the dearth of imported, mass-produced goods from this household suggests either lack of market access to those goods or a preference not to use them. The assemblage also shows the fundamental importance of self-procuring cooking wares consistent with ancestral methods and the possibility of incorporating both traditional and Old World ingredients into existing culinary repertoires.

**6.2 OP19 (Molino Loma) Artifacts**

As described in the previous chapter, the archaeological evidence strongly suggests that the area excavated as part of Operation 19 on the hill east of the main hacienda house is a domestic context. The space was likely a house lot known as a huasipungo or home to a household tied to the hacienda in a similar labor arrangement. The artifacts recovered from these excavations support this identification and provide a valuable lens on the lives of those who lived there. The residents used a predominantly unelaborated and locally made set of cooking and serving wares. The foods that they prepared and consumed followed largely communal-style foodways. Additionally, the dearth of imported, mass-produced goods from this household suggests either lack of market access to those goods or a preference not to use them. The assemblage also shows the fundamental importance of self-procuring cooking wares consistent with ancestral methods and the possibility of incorporating both traditional and Old World ingredients into existing culinary repertoires.
**OP19 Ceramics:**

The ceramic assemblage reveals several important points when compared to the domestic contexts excavated in the obraje (OP21) and at Pingulmí (OP78). First, OP19 is dominated by plain coarse earthenwares and presents the lowest diversity of ceramic wares in terms of market access (by count, weight, and minimum number of vessels (MNV)) (Table 6.1). Assuming that polychrome decorated lead and tin glazed wares were acquired by exchange networks from more distant urban centers like Quito, only 8% of the assemblage consists of these more expensive items. A minimum of just 7 imported whiteware vessels (or 5.4%) were recovered from OP19. This means that nearly 85% of the ceramic assemblage (by MNV) consisted of ceramics that were likely made and acquired locally, with little to no decoration or surface treatments.

It is also true that OP19 presented the highest number of red and brown slipped wares, including tripod vessels. Some of these forms and decorations are likely fragments of pre-contact ceramics in secondary contexts, particularly since the site is only around 100 meters over the hill from pre-colonial, possibly Inca, storage structures excavated previously by the Proyecto Arqueológico Pambamarca (PAP) (Fries 2010). It is impossible to say whether any of the slipped wares, which are consistent with a local pre-Columbian potting tradition in the region, were produced or even used during the occupation of the house lot. Nevertheless, their presence in stratigraphic layers with the nineteenth century material reveals an interesting folding of time and styles through the material objects. The use of red or brown slipped ceramics was not rare during the colonial period, however, and they were often used as a water jugs or for other liquids (Jamieson 2000: 182).

The forms of the ceramics in OP19 also reveal important patterns (see Appendix B). As seen in Table 6.2, a majority of the ceramic assemblage is comprised of large, restricted vessels,
including likely jars and pots (58 MNV) (Figure 6.3). All but 5 of those 58 minimum restricted vessels had diameters of at least 15 cm and are considered medium or large based on ethnographic and ethnohistoric information (Balanzátegui 2012). There was also a significant minimum number of tiesto vessels, flat griddles of 45-50 cm (9 MNV). This information suggests that meals were prepared according to communal foodways traditions, both in terms of meal volume and style. Large, restricted vessels would often be used to cook traditional stews and porridges, while tiestos are still used in the region to toast barley, corn, and other grains to make flours, porridges (like ground-barley *machica*) and maize tortillas. The faunal analysis similarly indicates that a majority of meats were prepared as part of stews or soups, complementing the conclusion of ceramic vessel form analysis.

Table 6.1 Breakdown of ceramic wares from Operation 19, Hacienda Guachalá.

<table>
<thead>
<tr>
<th>Ceramic Artifacts</th>
<th>Count</th>
<th>% of Count</th>
<th>Wgt (g)</th>
<th>% of Weight</th>
<th>MNV</th>
<th>% of MNV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coarse/Fine Earthenware</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plain</td>
<td>2982</td>
<td>80.3%</td>
<td>19611</td>
<td>82.1%</td>
<td>51</td>
<td>45.9%</td>
</tr>
<tr>
<td>Red Slipped</td>
<td>122</td>
<td>3.3%</td>
<td>1085</td>
<td>4.5%</td>
<td>16</td>
<td>14.4%</td>
</tr>
<tr>
<td>Brown Slipped</td>
<td>151</td>
<td>4.1%</td>
<td>892</td>
<td>3.7%</td>
<td>11</td>
<td>9.9%</td>
</tr>
<tr>
<td>Yellow/Green Lead Glazed</td>
<td>391</td>
<td>10.5%</td>
<td>1818</td>
<td>7.6%</td>
<td>17</td>
<td>15.3%</td>
</tr>
<tr>
<td>Polychrome + Other Lead Glazed</td>
<td>48</td>
<td>1.3%</td>
<td>419</td>
<td>1.8%</td>
<td>7</td>
<td>6.3%</td>
</tr>
<tr>
<td>Majolica/Tin-enameled</td>
<td>7</td>
<td>0.2%</td>
<td>31.5</td>
<td>0.1%</td>
<td>2</td>
<td>1.8%</td>
</tr>
<tr>
<td><strong>Refined White Earthenware</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer Print</td>
<td>5</td>
<td>0.1%</td>
<td>16</td>
<td>0.1%</td>
<td>3</td>
<td>2.7%</td>
</tr>
<tr>
<td>Hand Painted</td>
<td>5</td>
<td>0.1%</td>
<td>6.5</td>
<td>0.0%</td>
<td>3</td>
<td>2.7%</td>
</tr>
<tr>
<td>No Visible Decoration</td>
<td>1</td>
<td>0.0%</td>
<td>2</td>
<td>0.0%</td>
<td>1</td>
<td>0.9%</td>
</tr>
<tr>
<td><strong>Porcelain</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Visible Decoration</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>3712</td>
<td>100%</td>
<td>23881.2</td>
<td>100%</td>
<td>111</td>
<td>100%</td>
</tr>
</tbody>
</table>
Table 6.2 Estimated Rim Diameters by Vessel Class, Operation 19.

<table>
<thead>
<tr>
<th>Diameter Estimate</th>
<th>&lt;15cm</th>
<th>15-24cm</th>
<th>&gt;24cm</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RESTRICTED VESSELS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restricted General</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV</td>
<td>5</td>
<td>18</td>
<td>31</td>
<td>54</td>
</tr>
<tr>
<td>Weight (g)</td>
<td>36</td>
<td>836</td>
<td>469</td>
<td>1341</td>
</tr>
<tr>
<td><strong>Jar</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Weight (g)</td>
<td>0</td>
<td>50</td>
<td>163</td>
<td>213</td>
</tr>
<tr>
<td><strong>UNRESTRICTED VESSELS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unrestricted General</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV</td>
<td>0</td>
<td>1</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Weight (g)</td>
<td>0</td>
<td>2</td>
<td>205</td>
<td>207</td>
</tr>
<tr>
<td><strong>Tiesto</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV</td>
<td>0</td>
<td>0</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Weight (g)</td>
<td>0</td>
<td>0</td>
<td>317</td>
<td>317</td>
</tr>
<tr>
<td><strong>Hollowware/Bowl</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV</td>
<td>2</td>
<td>6</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Weight (g)</td>
<td>37</td>
<td>91</td>
<td>3</td>
<td>131</td>
</tr>
<tr>
<td><strong>Flatware/Plate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Weight (g)</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV</td>
<td>7</td>
<td>28</td>
<td>52</td>
<td>87</td>
</tr>
<tr>
<td>% of MNV</td>
<td>8.0%</td>
<td>32.2%</td>
<td>59.8%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Weight</td>
<td>73</td>
<td>982</td>
<td>1157</td>
<td>2212</td>
</tr>
<tr>
<td>% of Weight</td>
<td>3.30%</td>
<td>44.39%</td>
<td>52.31%</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

There is no indication that individualized and matched serving wares were used consistently by the residents of OP19, which is consistent with a communal style of cooking practices. As seen in Table 6.2, all but two of the unrestricted vessels, including bowls and few plates, are at least 15 cm in diameter. Medium and large bowls would provide a typical means for communal food consumption, particularly for the sharing of meals of local foodstuffs like fava beans (*habas*), maize, and tubers like potatoes, *oca*, and *melloco*. This is common in Indigenous communities in the Cayambe region today, as well as across the highlands.
(Balanzátegui 2012: 127; Tutillo 2003). It is also true that meals like this are usually cooked and served in the same vessel, a foodways tradition distinct from mestizo and Euro-American practices that separate vessel function into cooking and serving vessels.

The artifact analysis from OP19 also made clear that the residents of this house lot made scant use of goods that were of non-local imported origin, either for lack of access or lack of desire to use such goods as part of their everyday lives. Only seven possible ceramic vessels of British refined earthenwares were recovered out of a total of 111 minimum ceramic vessels, or around 6% of the total assemblage. Three of these were transfer-printed whitewares from the second half of the nineteenth century.

![Figure 6.3 Example of large, long-neck, restricted earthenware vessel, with exterior soot. Estimated diameter of 23 centimeters. 19C03.27.18.](image)

**OP19 Other Objects:**

Additionally, only a single glass fragment was recovered, in the form of a likely hand-blown bottle finish (the top portion of the bottle) (Figure 6.4). The bottle was most likely a pharmaceutical bottle based on its form. For the available estate accounting documents, there is
not a single instance of medicine provided to a huasipunguero by the hacienda. This means that if it was a medicine bottle, it likely would have been purchased through other forms of exchange and at great cost to the laborers. As it is the only one recovered, this use of a pharmaceutical product was likely extremely rare. Instead, ancestral practices of medicinal care appear to have been the norm. These practices are essential to contemporary notions of cultural identity in the region. In fact, local medicinal knowledge through use of local botanicals is an important part of how community organizations today have sought to fight the COVID-19 pandemic, through both preventative measures, and the creation of disinfectant gels using Andean agave among other ingredients (Fundación Kawsay).

Only two other objects of personal adornment were recovered from OP19, both of which were beads. One is likely a ribbed ceramic bead while the other is a translucent blue polyhedral glass drawn bead (Figure 6.5). The latter corresponds to bead type Iff or IIIff as defined by Karklins (2012). Necklaces known in Quichua as wallkas are a typical part of women’s dress in the region. The necklaces were typically made of mullos, or shell beads. Today they are

![Figure 6.4](image1.png) The only recovered glass artifact from Operation 19 was this bottle finish, likely from a pharmaceutical bottle. 19M14.120.1.

![Figure 6.5](image2.png) Blue polyhedral glass bead recovered from Operation 19.
primarily worn on ritual occasions like baptisms, weddings, and festival days. In generations past many wore the wallka daily while switching to a finer wallka on ritual occasions. They remain an important component of cultural identity in the Cayambe region. Because this particular bead is made of glass it was likely not part of a typical wallka, but the presence of such a personal adornment at the site serves as a reminder of the multiple dimensions of life for the residents beyond depictions of daily labor.

*OP19 Faunal:*

Excavations in Operation 19 recovered a total of 1,958 total bone fragments with a weight of 9,452.1 grams. This assemblage was analyzed to determine the presence of 353 identifiable specimens (NISP) or 73 minimum number of individual animals (MNI). Mammals made up fully 98% of the total assemblage (by NISP) and introduced, domesticated species like cows, sheep and goats predominated, while native species were scarce. The faunal analyses described in this chapter were conducted by Ibis Mery and the interpretations are a product of this collaboration (Mery 2020).

In the house lot excavated in Operation 19, the remains of cow (*Bos taurus*) were most frequent with a total NISP of n=136 elements (MNI=25) (Table 6.3). Sheep (*Ovis aries*), with a total of n=88 (NISP) elements (MNI=22), and goats (*Capra hircus*) with a total of n=65 elements (NISP) (MNI=9) were also common. Smaller, native species like Guinea pigs (*Cavia sp.*) were also recovered but in lower quantity (n=5 elements) (MNI=4), as well as 1 element each of wild rabbit and White-Tailed Deer. Additionally, n=7 total elements of birds (*Ave*) were recovered, which may have been domesticated birds like poultry. It is worth noting that in this context, only n=7 elements, representing at least 6 individual animals (MNI) were native, wild species, just 2% of the total assemblage. This number is even lower if one considers the guinea pig remains to be
domesticated, a distinct possibility as it is common for guinea pigs to live inside the home in rural households. These proportions indicate that most meat was likely acquired from the hacienda or local market networks while hunting to self-procure additional meat protein was extremely rare.

Table 6.3 Taxonomic Identifications of faunal assemblage from Operation 19.

<table>
<thead>
<tr>
<th>Taxa</th>
<th>Common Name</th>
<th>Weight (g)</th>
<th>NR</th>
<th>NISP</th>
<th>MNI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammal</td>
<td>-</td>
<td>133.7</td>
<td>79</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>Large Mammal</td>
<td>-</td>
<td>216</td>
<td>29</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Small Mammal</td>
<td>-</td>
<td>1.2</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Artiodactyla</td>
<td>Ungulates</td>
<td>1839.5</td>
<td>817</td>
<td>25</td>
<td>4</td>
</tr>
<tr>
<td>Equidae</td>
<td>Horse/Donkey</td>
<td>18</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><em>Bos taurus</em></td>
<td>Cow/Bull</td>
<td>5409.9</td>
<td>337</td>
<td>136</td>
<td>25</td>
</tr>
<tr>
<td><em>Caprinae</em></td>
<td>Sheep/Goat</td>
<td>270.8</td>
<td>160</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td><em>Ovis aries</em></td>
<td>Sheep</td>
<td>751.1</td>
<td>191</td>
<td>88</td>
<td>22</td>
</tr>
<tr>
<td><em>Capra hircus</em></td>
<td>Goat</td>
<td>336</td>
<td>76</td>
<td>65</td>
<td>9</td>
</tr>
<tr>
<td><em>Sus scrofa</em></td>
<td>Pig</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><em>Cavia sp.</em></td>
<td>Guinea Pig</td>
<td>1.3</td>
<td>5</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td><em>Odocoileus ustus</em></td>
<td>White-tailed Deer</td>
<td>27</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Lagomorfo</td>
<td>Rabbit</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Ave</td>
<td>-</td>
<td>4.8</td>
<td>7</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Unidentified</td>
<td>-</td>
<td>440.7</td>
<td>250</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>9452.1</td>
<td>1958</td>
<td>353</td>
<td>73</td>
</tr>
</tbody>
</table>

Identifying the part of the body from which the remains came as well as the age at death of the animal can help to discern the use of the animal parts and how they came to be deposited. A majority of the remains (n=164 NISP) are cranial, including teeth, mandible bones and
fragments from the cranium. There was a slightly lower portion of appendicular (appendages) remains (n=141 NISP) and axial remains comprised the lowest portion (n=42 NISP), consisting of parts like ribs and vertebra. This distribution shows that there was not a single cut of meat that was consistently acquired by the residents. Rather, some of the carcasses may have been butchered on site, or whole animals would have been butchered and divided up among laborers, including both the desired and less desired parts. This does not necessarily indicate that this household consumed both low and high quality meats, as documents show that animals that died of various causes were often sold to laborers (ANE, Caja 19, V1, 1881). Thus, while hypothetically an expensive cut of meat, the animal would not have been desired by higher status administrators or hacendados due to the unsanitary or unhealthy conditions of the animal leading to its death, a point expanded upon in Chapter 4.

The faunal analysis also provided an idea of the lives of the animals themselves and how they were utilized in these contexts. When sorted by age, 82% of the diagnostic bones were from adult animals and 18% were considered juvenile. This fact indicates that there was a preference, or need, to extract other products like milk, wool, or offspring before consuming meat. This age breakdown is roughly equal for cow and sheep, indicating that both were utilized for those products before consuming them as meat.

Anthropic, or human-made alterations to the bones of animals also add significant new information to an understanding of the consumption of those animals, including the methods and tools by which they were slaughtered and utilized. In total, 183 of the bones had evidence of butchering or human tool use, generally consistent with a method of first dividing the animal carcass into quarters, followed by more simple or informal dividing up of the animal. While there were distinct butchering marks displayed as a result of various cutting actions and levels of
exposure of the bone to the tools (based on presence of meat or not on certain parts), in general the tools appear to have been sharp, metal cutting implements. Small obsidian blades could have been used for finer cuts to the meats within the household during the process of actual meal preparation.

Other human alterations that were common were exposure to either direct or indirect heat. A total of 168 bone fragments presented exposure to direct heat from the fire, resulting in color change to brown, black, gray or white. This low relative number suggests that most of the meat was prepared by methods with indirect exposure to heat like soups or stews. These meals are part of culinary tradition in the rural highlands and are also consistent with the ceramic data that suggested the overwhelming use of large, restricted vessels such as pots to cook these meals.

Finally, naturally caused alterations to the animal bones illuminate important information about the discard patterns of food waste. Specifically, OP19 presented the highest proportion of rodent gnawing marks on bones post-deposition, indicating that the bones were likely exposed to the open air for longer periods of time instead of discarded in specific, below-ground midden pits. Similarly, OP19 presented the highest proportion of weathering alterations to the bones, which further highlights this discard pattern since they were exposed to natural elements for longer periods of time.

**OP19 Lithics**

The lithic assemblage of this dissertation project was analyzed by Dyrdahl and Falcón (2020) and the interpretations found in the following sections of this chapter are a product of this collaboration. Excavations in OP19 recovered a total of 28 lithic artifacts, all of which were obsidian. Of these, 21 were classified as undiagnostic flakes, 1 was an exhausted flake core, indicating that at least some obsidian was worked in the area, 2 are examples of lithic shatter,
and the remaining 4 are formal tools (either bifacial or unifacial). Dyrdahl and Falcón (2020) suggest that the four tools are likely more informal, retouched flakes. Furthermore, these were discarded at a point when they still may have had some use life.

While one flake core was recovered, the evidence of use wear on this assemblage indicates that the occupants of the site represented in OP19 were utilizing the lithic artifacts rather than fabricating them there. This is because 11 of the 28 obsidian artifacts (or 39.2%) had evidence of use wear, whereas the percentage of lithics with use wear at a fabrication site (dated to 800 – 400 cal BC) analyzed by Dyrdahl (2017: 296) was 7.5%. This is further supported by the fact that there is a limited quantity of micro-debitage in the collection (evidence of stone tool production), and the small quantity of lithic artifacts at the site overall.

In general, the obsidian assemblage from the domestic context of OP19 reveals that the inhabitants of the site were primarily utilizing and retouching ready-to-use flakes. Their use indicates somewhat informal use of stone tools either from flakes that they acquired from on site, or from outside sources like trading networks. The analysis largely does not suggest one particular use of this site but would be consistent with the evidence from other materials that strongly suggest the domestic character of the space. The lithics would have provided an additional resource for tasks typical of a household in the area, including food preparation, agricultural tasks, and/or household production of materials like clothing.

6.3 OP21 (Casa de Obraje) Artifacts

Excavations as part of Operation 21 provided significant evidence that strongly concurs with the description of the “casa de obraje” from archival estate inventories. The mixture of architectural features like wall foundations and stone floors, along with artifacts that are consistent with both domestic activities and the operations of textile production highlight the
multi-use nature of the space. It is therefore useful to compare the material assemblage of OP21 with that of OP19 and OP78 to discern potential differences in lifeways across the categories of residents.

In general, the ceramic wares recovered from OP21 share a similar repertoire, yet have a relatively significant difference in the proportion of more elaborately decorated wares likely acquired from more distant urban centers. Imported refined earthenwares are still exceptionally low in this context but more frequent when compared to OP19. Additionally, while there are higher numbers of artifacts of personal adornment and mass-produced goods like glass compared to OP19, these numbers are still very low overall. The proximity of this context to both higher status laborers like the administrators, to the hacendado home, and the main hacienda architecture adjacent to these spaces seems to have influenced the availability or presence of more expensive wares. Nevertheless, the ceramic and faunal assemblage still reflects everyday lifeways consistent with collective identities and the ongoing importance of fulfilling collective obligations rather than an individualized social ethos.

**OP21 Ceramics**

Excavations recovered 1,306 total ceramic fragments weighing 14,589.5 grams, representing a minimum of 138 individual vessels based on the analysis of diagnostic sherds (Table 6.4). By MNV, there was a similar proportion of plain, coarse earthenwares in OP21 at 40%, slightly lower than OP19. Importantly, there was a much higher proportion of yellow, green and other lead glazed wares at nearly 35%. Additionally, tin-glazed wares were more frequent with an MNV of n=7, compared to just n=2 in OP19. The residents of this multi-family domestic area thus utilized a greater number of ceramics with more elaborate decorative palettes.
than those of OP19. This also suggests that they engaged in more distant exchange networks to acquire these goods.

Nevertheless, the same trend in vessel form from OP19 holds in OP21, where a significant majority of vessels were large cooking and serving wares (see Appendix B). Just over 90% of the assemblage, where rim diameter could be determined, had diameters considered medium or large (over 15cm), including both restricted and unrestricted vessels (Table 6.5). In terms of vessel counts, this is equal to 47 minimum vessels of 52 total that had diameters over 15cm, and 25 minimum vessels had diameters greater than 24 cm. Tiestos were also recovered in OP21 with a minimum vessel count of 3. Because of roughly similar rim styles and the plain, undecorated surface treatments of tiestos, the MNV counts for these likely undercount the true number of vessels.

<table>
<thead>
<tr>
<th>Ceramic Artifacts</th>
<th>Count</th>
<th>% of Count</th>
<th>Wgt (g)</th>
<th>% of Weight</th>
<th>MNV</th>
<th>% of MNV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coarse/Fine Earthenware</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plain</td>
<td>643</td>
<td>49.2%</td>
<td>10527</td>
<td>72.2%</td>
<td>54</td>
<td>39.1%</td>
</tr>
<tr>
<td>Red Slipped</td>
<td>48</td>
<td>3.7%</td>
<td>866.5</td>
<td>5.9%</td>
<td>8</td>
<td>5.8%</td>
</tr>
<tr>
<td>Brown Slipped</td>
<td>50</td>
<td>3.8%</td>
<td>235</td>
<td>1.6%</td>
<td>6</td>
<td>4.3%</td>
</tr>
<tr>
<td>Yellow/Green Lead Glazed</td>
<td>397</td>
<td>30.4%</td>
<td>1585.0</td>
<td>10.9%</td>
<td>30</td>
<td>21.7%</td>
</tr>
<tr>
<td>Polychrome + Other Lead glazed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glazed</td>
<td>76</td>
<td>5.8%</td>
<td>217.0</td>
<td>1.5%</td>
<td>18</td>
<td>13.0%</td>
</tr>
<tr>
<td>Majolica/Tin-enameled</td>
<td>55</td>
<td>4.2%</td>
<td>162</td>
<td>1.1%</td>
<td>7</td>
<td>5.1%</td>
</tr>
</tbody>
</table>

| **Refrined White Earthenware**        |       |            |         |             |     |          |
| Transfer Print                        | 14    | 1.1%       | 91      | 0.6%        | 6   | 4.3%     |
| Hand Painted                          | 1     | 0.1%       | 1       | 0.0%        | 1   | 0.7%     |
| No Visible Decoration                 | 21    | 1.6%       | 903     | 6.2%        | 7   | 5.1%     |

| **Porcelain**                         |       |            |         |             |     |          |
| No Visible Decoration                 | 1     | 0.1%       | 2       | 0.0%        | 1   | 0.7%     |

| **Totals**                            | 1306  | 100.0%     | 14589.5 | 100.0%      | 138 | 100.0%   |

Table 6.4 Ceramic Wares recovered from Operation 21.
<table>
<thead>
<tr>
<th>Diameter Estimate</th>
<th>&lt;15cm</th>
<th>15-24cm</th>
<th>&gt;24cm</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RESTRICTED VESSELS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restricted General</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV</td>
<td>0</td>
<td>7</td>
<td>4</td>
<td><strong>11</strong></td>
</tr>
<tr>
<td>Weight (g)</td>
<td>0</td>
<td>134</td>
<td>59</td>
<td>193</td>
</tr>
<tr>
<td>Jar</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td><strong>6</strong></td>
</tr>
<tr>
<td>Weight (g)</td>
<td>0</td>
<td>0</td>
<td>2339</td>
<td>2339</td>
</tr>
<tr>
<td><strong>UNRESTRICTED VESSELS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unrestricted General</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV</td>
<td>3</td>
<td>6</td>
<td>10</td>
<td><strong>19</strong></td>
</tr>
<tr>
<td>Weight (g)</td>
<td>37</td>
<td>30</td>
<td>127</td>
<td>194</td>
</tr>
<tr>
<td>Tiesto</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>Weight (g)</td>
<td>0</td>
<td>0</td>
<td>87</td>
<td>87</td>
</tr>
<tr>
<td>Hollowware/Bowl</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV</td>
<td>1</td>
<td>6</td>
<td>1</td>
<td><strong>8</strong></td>
</tr>
<tr>
<td>Weight (g)</td>
<td>5</td>
<td>99</td>
<td>6</td>
<td>110</td>
</tr>
<tr>
<td>Flatware/Plate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td><strong>5</strong></td>
</tr>
<tr>
<td>Weight (g)</td>
<td>74</td>
<td>19</td>
<td>6</td>
<td>99</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV</td>
<td>5</td>
<td><strong>22</strong></td>
<td>25</td>
<td><strong>52</strong></td>
</tr>
<tr>
<td>% of MNV</td>
<td>9.6%</td>
<td><strong>42.3%</strong></td>
<td><strong>48.1%</strong></td>
<td><strong>100.0%</strong></td>
</tr>
<tr>
<td>Weight</td>
<td>116</td>
<td>282</td>
<td>2624</td>
<td>3022</td>
</tr>
<tr>
<td>% of Weight</td>
<td>3.84%</td>
<td>9.33%</td>
<td><strong>86.83%</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>

Table 6.5 Distribution of estimated rim diameters by vessel class, Operation 21.

OP21 also presented at least 5 different examples of what appear to be intentionally formed ceramic discs and a spindle whorl with perforation (Figure 6.6). The example with the center perforation demonstrates its likely use as spindle whorl for either personal use or in the obraje operations. The others appear to be intentionally rounded and likely made from broken sherds of pottery with a different original purpose. Such ceramic discs often confound archaeologists around the Americas, with interpretations of their use as game pieces, bottle
stoppers, scrapers, or unfinished spindle whorls (Bray 1990: 245; Overholtzer 2015: 97-99).

While their recovery from a textile workshop would appear to make a greater case for the latter, it is certainly plausible that they were used for other means like entertainment in rare free time.

![Figure 6.6](image)

**Figure 6.6** Ceramic discs and possible spindle whorl, Operation 21. Top: 21C16.583.9, Front and Back; Bottom left: 21C17.662.23; Bottom center: 21C17.660.21; Bottom right: 21C17.661.19.

**OP21 Other objects**

Consistent with the greater frequency of non-local ceramics was a greater quantity of other mass-produced glass bottles and personal adornments. Overall, these items are still exceptionally low for an archaeological assemblage of the nineteenth century but it does likely correlate with the greater number of families, activities, and types of laborers who would have lived and worked in the area of OP21 as compared to the domestic area in OP19.
Glass comprised 4% of the total OP21 material assemblage by fragment count, a majority of which was recovered from stone floor contexts or the adjacent refuse feature of units 4 and 5 of Built Division 2. Additional glass was recovered from stone floor contexts in the nearby Built Division 3. In both cases, the types of glass included bottle glass (likely wine or other alcohol), Florida Water, and other utility wares like window glass.

The Florida Water bottle is the most illuminating since it presents embossing from the producer “Murray & Lanman,” a New York manufacturer of the “all-purpose” liquid (Herskovitz 1978: 19; Sullivan 1994). The embossing recovered on the bottle fragment from OP21 presents the letters “LAN/ISTA,” which fits the Spanish version of the embossing of this manufacturer (Figure 6.7). The company still produces Florida Water today under the name Lanman and Kemp-Barclay and Co. but was first created in 1808. Herskovitz reported that Florida Water made by Murray & Lanman was recovered from Fort Bowie, a nineteenth century U.S. Army post in Arizona where it was used “to help sweeten the air and hair in the barracks and post boudoirs” (Herskovitz 1978: 19). An 1892 newspaper advertisement described it as “a most refreshing lotion after exposure to the sun” (Herskovitz 1978: 19). He notes that at Fort Bowie a Spanish version of the embossed label reads, “Agua de Florida/ Murray Y Lanman/ Droguistas/ New York,” which corresponds to the embossing of the bottle fragment analyzed in this study.

Figure 6.7 Glass fragment with embossed lettering spelling, “LAN/ISTA,” which comes from the label, “Agua de Florida/ Murray Y Lanman/ Droguistas/ New York.” (21V17.743.10).
In a review of turn of the century newspapers from Quito, Ecuador, I found Florida Water to have a similar marketing scheme to that of the United States during a time when Ecuador increasingly favored imported goods under Liberal political rule. An advertisement from the Quito newspaper, *La Ley* from January 8, 1904, for example, features an advertisement from a store called *La Elegancia Peluquería Francesa*. This French style salon offered hair care and cosmetic services as well as a variety of personal beauty products, including Florida Water. The ad reads, “Se vende…el agua florida legítima, por botellas, medias botellas o un cuarto de botella, y también por menor, para facilitar la compra al público, para que todos estén bonitos y huelan a cielo” (“We sell the authentic Florida Water, by the bottle, half bottle, or quarter bottle, and also in small quantities, to make it accessible to the public so that everyone looks beautiful and smells like heaven”) (*La Ley*, January 8, 1904).

This particular advertisement is an interesting window into situating the presence of a Florida Water bottle at a textile workshop and laborer living quarter area. First, the advertisement reveals that knock-off versions were common for cheaper prices since it highlights that it was selling the “legitimate” version. Nevertheless, the bottle recovered in excavations is a real, imported version and not a knock-off. Second, there seems to be an attempt by at least the turn of the twentieth century to make imported cosmetic products widely available to the public. Finally, there is clearly an affinity toward European style in urban, likely elite circles. This would have had significant impact on the market of imported goods, which is also reflected in the estate inventory presented in Chapter 4. Despite this, there is scant evidence of a desire, or ability, to acquire those goods by any of the categories of hacienda laborer families beyond this single example.
It is worth noting, however, that at least two other examples of personal adornments were recovered in OP21 (Figure 6.8). A small, purple bead of about half a centimeter in diameter likely made of a compound double layer glass, was recovered from the same refuse feature as that of the Florida Water bottle fragment. Similar to the beads recovered from OP19, this one may also have been part of a necklace similar to wallka necklaces typical of women’s dress in the region and an important expression of cultural identity. In Built Division 3 nearby, a small metal “drop” earring was recovered. The earring presented a decorative motif that is now unidentifiable because of deterioration. While a rare find in the excavations, the presence of these items suggests that dress remained an important expression and performance of cultural identity, whether in everyday life or on ceremonial occasions.

Figure 6.8 Examples of items related to personal adornment. Top left, small double layer glass bead (21M17.756.1). Top right, metal drop earring (21Me17.733.1).

OP21 Faunal

Excavations in Operation 21 recovered a total of 1,831 total bone fragments with a weight of 4,439.8 grams. Analysis of the assemblage determined the presence of 322 identifiable specimens (NISP) or 87 minimum number of individual animals (MNI), both numbers similar to
Operation 19. Mammals made up 89% of the total assemblage (by NISP), slightly lower than OP19, and domestic species like sheep, cows, and goats predominated (Table 6.6).

In the mixed activity domestic/labor areas of OP21, the remains of sheep (*Ovis aries*) were most frequent with a total NISP of n=158 elements. Cow (*Bos taurus*), with a total of n=39 (NISP) elements (MNI=12), and goats (*Capra hircus*) with a total of n=24 elements (NISP) (MNI=3) were also common. One major difference between OP 19 and OP21 is that sheep were the most represented in OP21 while cow was most common at OP19. Similar to OP19, though, there was scant evidence of pig consumption, only n=2 elements. Smaller, native mammal species like Guinea pigs (*Cavia sp.*) were also recovered but in lower quantity (MNI=4), as well as 2 elements of White-Tailed Deer and 3 elements of Andean Cottontail Rabbit. Additionally, n=32 total elements of birds were recovered (MNI=8), including domesticated birds like poultry as well as other birds whose more specific classification could not be determined. As with OP19, only a miniscule percentage (approximately 3%) of the assemblage was made up of native, wild species. All of these frequencies are summarized in Table 6.6.
Table 6.6 Operation 21 faunal assemblage.

<table>
<thead>
<tr>
<th>Taxa</th>
<th>Common Name</th>
<th>Weight (g)</th>
<th>NR</th>
<th>NISP</th>
<th>MNI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Mammal</td>
<td>-</td>
<td>319.6</td>
<td>264</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Small Mammal</td>
<td>-</td>
<td>5.8</td>
<td>10</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Artiodactyla</td>
<td>Ungulates (Hoofed Animals)</td>
<td>1916.9</td>
<td>878</td>
<td>39</td>
<td>6</td>
</tr>
<tr>
<td><em>Bos taurus</em></td>
<td>Cow/Bull</td>
<td>776.1</td>
<td>48</td>
<td>39</td>
<td>12</td>
</tr>
<tr>
<td><em>Lama sp.</em></td>
<td>Llama</td>
<td>19.6</td>
<td>5</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td><em>Caprinae</em></td>
<td>Sheep/Goat</td>
<td>88.7</td>
<td>79</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td><em>Ovis aries</em></td>
<td>Sheep</td>
<td>730.5</td>
<td>266</td>
<td>158</td>
<td>39</td>
</tr>
<tr>
<td><em>Capra hircus</em></td>
<td>Goat</td>
<td>196.2</td>
<td>80</td>
<td>24</td>
<td>3</td>
</tr>
<tr>
<td>Carnivore</td>
<td></td>
<td>4.4</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><em>Cavia sp.</em></td>
<td>Guinea Pig (Cuy)</td>
<td>6.6</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td><em>Odocoileus ustus</em></td>
<td>White-tailed Deer</td>
<td>14</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Silvilagus andinus</td>
<td>Wild Rabbit</td>
<td>2.5</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td><em>Sus scrofa</em></td>
<td>Pig</td>
<td>16</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Bivalve</td>
<td>Shell</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Galliformes</td>
<td>Landfowl/Domesticated birds</td>
<td>14.4</td>
<td>14</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>Aves</td>
<td></td>
<td>10.6</td>
<td>19</td>
<td>18</td>
<td>5</td>
</tr>
<tr>
<td>Unidentified</td>
<td>-</td>
<td>290.9</td>
<td>154</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>4439.8</strong></td>
<td><strong>1831</strong></td>
<td><strong>322</strong></td>
<td><strong>87</strong></td>
</tr>
</tbody>
</table>

Identifying the part of the body from which the remains came as well as the age at death of the animal can help to discern the use of the animal parts and how it came to be deposited. A majority of the remains (n=154 NISP) are appendicular, while there was a slightly lower portion of cranial remains (n=110 NISP) and axial remains comprised the lowest portion (n=64 NISP), consisting of ribs and vertebra. Separated by age, 99% of the diagnostic bones were from adult animals and only 1% considered juvenile. As with OP19, this fact indicates that there was a preference, or need, to extract other products like milk, wool, and offspring before consuming meat. This age breakdown is most stark for sheep, which was almost entirely adult. This is logical since OP21 was both domestic space and work area for the obraje, which processed sheep.
wool into textiles. It is no surprise, then, that sheep would have been utilized to the fullest prior to offering the meat for consumption.

Anthropic, or human-made alterations to the bones of animals add significant new information to an understanding of the consumption of those animals, including the methods and tools by which they were slaughtered and utilized, and the cuts of meat proportioned to certain groups of people. In total, 107 of the bones had evidence of butchering or human tool use, generally consistent with a method of first dividing the animal carcass into quarters, followed by more simple or informal dividing up of the animal, without necessarily leaving marks on the bones. A total of 171 bones presented exposure to direct heat from the fire, resulting in color change to brown, black, gray or white. As with OP19, this low relative number suggests that most of the meat was actually prepared by methods with indirect exposure to heat like soups or stews, consistent with the ceramic data indicating the extensive use of large, restricted vessels as pots to cook these meals.

The faunal remains that were recovered specifically from the possible midden feature of Unit 2 in BD3, BS1, largely represent the overall OP21 sample in relative proportions. The feature does include the small and medium, native species like rabbit, as well as deer and llama but in small numbers. The assemblage was predominantly comprised of sheep bone, of utmost importance in the area of the obraje for both their wool and, later, their meat. It is also worth mentioning that the remains in this feature had very few butchering marks, indicating that the meat disposed of here was brought already processed, and then likely prepared within specific household or kitchen spaces.
OP21 Lithics

Excavations in OP21 recovered a total of 127 obsidian artifacts and 85 non-obsidian lithic artifacts that included andesite, basalt, slate, and limestone. This is a greater quantity and diversity of lithic artifacts than OP19. The size distribution of obsidian artifacts is generally comparable to the distribution in OP19, with a majority of obsidian artifacts measuring between 1.5 and 4 centimeters. Obsidian measuring 2 centimeters comprises 30% of the OP21 assemblage.

The analysis showed that, as with OP19, obsidian likely arrived on site in an already reduced state since no primary or secondary decortication flakes are present in the assemblage. In fact, the flakes from both contexts appear to be expedient flake technology, prepared by direct percussion with something like a hammerstone. This resulted primarily in undiagnostic flakes, some of which were retouched to create informal tools. Besides those informal tools, 24 additional obsidian artifacts have evidence of use wear.

A minimum of two flake cores were recovered from OP21, one of which was recovered from a feature of BD2, BS1, Unit 4 that was associated with the stone floor context and wall foundation. This can indicate limited obsidian working in the area. But like the core found in OP19, these appear to have been worked in an unpredictable manner indicating that the purpose was largely to create quick, informal flake tools. In other words, while there is a long tradition of use and reduction of obsidian in the region, these historic period contexts appear to show a pattern of informal tool production and extended re-use of flakes before discard rather than advanced tool production techniques.

There were also four other types of raw lithic materials recovered in OP21, including 85 artifacts of andesite, basalt, slate and limestone. The most common of these was andesite but as
no andesite cores were documented, it is likely that these also were produced elsewhere and brought in. There are three types of andesite groundstone tools: *manos* (grinding tool), *morteros* (bowl-like grinding surface), and *metates* (bigger basin-like grinding surfaces). These tool classifications are based on morphology rather than on microscopic analyses of use wear or residue. There was a total of 11 specimens classified as groundstone tools, 4 of which are considered complete tools. The presence of these tools, particularly the metate from BD 3, BS1, Unit 2 (Figure 8.6) contributes to the identification of that context as a potential refuse area or midden of a domestic context based on the assemblage of utilitarian ceramics and large faunal remains.

The recovery of five slate or schist objects may indicate similar domestic or non-domestic uses as a sharpening tool. In earlier contexts like the Late Formative site of Las Orquídeas, more than 2,000 slate artifacts were recovered and determined to have been used for tasks related to cutting and/or polishing (Dyrdahl 2017: 591-593). In the context of Hacienda Guachalá they were not utilized in the processing of marine shells. Rather they probably were used for sharpening blades of cutting implements for use in either the obraje or the living quarters, or potentially both.

6.4 OP78 (Pingulmí House Structure) Artifacts

Though excavations at Operation 78 were more limited in scope and volume as compared to Operations 19 and 21, the material provides an important comparative lens on the daily lifeways of a household that was likely independent from the direct labor control of Hacienda Guachalá (Pérez Garcés 2007). An 1808 document portraying the new parish of Cangahua after its founding in 1779 includes descriptions of the locations and inhabitants of Cangahua’s
haciendas and includes a passage on Pingulmí. It is referred to as a “sitio del común de indios” (“place held in common by the Indigenous inhabitants”), which included 58 dispersed chozas (houses) and 138 individuals all dedicated to agricultural work (cited in Pérez Garcés 2007: 55).

Because of this unique status of Pingulmí as compared to the residents of the haciendas, it was an important comparative context. The assemblage reflects a household with significantly greater access to and/or desire for more non-local, polychrome decorated, and likely more expensive ceramic wares. That said, not a single sherd of an imported, refined earthenware nor a single glass fragment was recovered from OP78, suggesting a lack of engagement with global market networks.

**OP78 Ceramics**

A total of 230 ceramic sherds were recovered with a weight of 6,610 grams. These represent a minimum of 21 distinct vessels. By MNV, the categories of polychrome lead glazed and yellow or green lead glazed comprise about 62% of the total ceramic assemblage, much greater than OP19 in particular. Whereas OP19 had the lowest diversity of ceramic surface treatments and highest proportion of plain wares, OP78 has a much greater percentage of decorated wares (Table 6.7).

The vessel forms that were recovered in OP78 also reveal interesting comparative information regarding the daily practices of food preparation and consumption (see Appendix B). Because of the small sample of rims large enough to estimate a diameter, the data for diameter size by vessel class for OP78 is not as reliable. Nevertheless, the in situ remains of ceramics from the hearth feature provide persuasive evidence for the practice of communal foodways traditions (Figure 6.9). As with OP19 and 21, there was heavy reliance on tiestos for the preparation of local grains for nutritious and energy-heavy meals like barley porridges.
(machica). There is no sign of standardization of serving wares or a clear separation of cooking vessels versus serving vessels, and unrestricted vessels with diameters of at least 15 cm are still common (Table 6.8).
Table 6.7 Ceramic surface treatments, Operation 78.

<table>
<thead>
<tr>
<th>Ceramic Artifacts</th>
<th>Count</th>
<th>% of Count</th>
<th>Wgt (g)</th>
<th>% of Weight</th>
<th>MNV</th>
<th>% of MNV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coarse Earthenware</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plain</td>
<td>120</td>
<td>52.2%</td>
<td>5537</td>
<td>83.8%</td>
<td>5</td>
<td>23.8%</td>
</tr>
<tr>
<td>Red Slipped</td>
<td>4</td>
<td>1.7%</td>
<td>68</td>
<td>1.0%</td>
<td>2</td>
<td>9.5%</td>
</tr>
<tr>
<td>Brown Slipped</td>
<td>18</td>
<td>7.8%</td>
<td>121</td>
<td>1.8%</td>
<td>1</td>
<td>4.8%</td>
</tr>
<tr>
<td>Yellow/Green Lead Glazed</td>
<td>64.0</td>
<td>27.8%</td>
<td>672.00</td>
<td>10.2%</td>
<td>6</td>
<td>28.6%</td>
</tr>
<tr>
<td>Polychrome Lead Glazed</td>
<td>24</td>
<td>10.4%</td>
<td>212</td>
<td>3.2%</td>
<td>7</td>
<td>33.3%</td>
</tr>
<tr>
<td>Refined White Earthenware</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Totals</td>
<td>230</td>
<td>100.0%</td>
<td>6610</td>
<td>100.0%</td>
<td>21</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 6.8 Ceramic rim diameter estimates by vessel class, Operation 78.

<table>
<thead>
<tr>
<th>Diameter Estimate</th>
<th>&lt;15cm</th>
<th>15-24cm</th>
<th>&gt;24cm</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RESTRICTED VESSELS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restricted General</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Weight (g)</td>
<td>46</td>
<td>140</td>
<td>0</td>
<td>186</td>
</tr>
<tr>
<td>Jar</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Weight (g)</td>
<td>206</td>
<td>0</td>
<td>0</td>
<td>206</td>
</tr>
<tr>
<td><strong>UNRESTRICTED VESSELS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unrestricted General</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Weight (g)</td>
<td>11</td>
<td>0</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Tiesto</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Weight (g)</td>
<td>0</td>
<td>0</td>
<td>675</td>
<td>675</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>% of MNV</td>
<td>50.0%</td>
<td>12.5%</td>
<td>37.5%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Weight</td>
<td>263</td>
<td>140</td>
<td>679</td>
<td>1082</td>
</tr>
<tr>
<td>% of Weight</td>
<td>24.31%</td>
<td>12.94%</td>
<td>62.75%</td>
<td>100.00%</td>
</tr>
</tbody>
</table>
Figure 6.9 Sample of ceramics recovered in association with the hearth feature of Unit 2, OP78. Top: Interior and exterior of yellow and green lead glazed jar (78C18.40.6); Bottom left: Tiesto rim fragment (78C18.30.2); Bottom right: Tiesto rim fragment (78C18.40.5).
OP78 Faunal

Because of the more limited scope of excavations at OP78, the faunal assemblage is exceptionally small relative to Operations 19 and 21 and of very limited analytical value. There were n=16 total bone fragments with a weight of 23 grams. A total of n=10 individual specimens (NISP) were identified as either sheep or goat, and all from post-cranial elements.

While this small sample is inadequate to draw larger conclusions, one preliminary observation is that cow is not represented. A much larger sample size would need to be excavated to determine relative proportions of meat consumption by this household. Nevertheless, one important question for future investigation is whether meat access by this household was significantly more limited than for the residents of domestic spaces directly associated with the hacienda. In other words, one hypothesis to test is, despite the brutal system of huasipungaje in general, the arrangement gave huasipungero families in close association with Hacienda Guachalá increased access to a wider diversity of meat and protein sources. A similar possible conclusion was drawn by Elizabeth Terese-Newman for the case of indebted workers at Hacienda Acocotla in Puebla, Mexico (Newman 2014: 37).

6.5 Chapter Summary

Artifact analyses from the three main contexts discussed in this chapter (Operations 19, 21, and 78) reveal several consistent patterns as well differences in comparison to each other. The ceramic data reveal that residents of all three contexts primarily relied on local market networks through which to acquire the ceramic wares that they used as the assemblages were dominated by plain, coarse earthenwares. The house lot at Pingulmí showed the highest diversity of ceramic wares by surface treatments and decoration, followed by the Casa de Obraje, and the domestic context on Molino Loma presented the least variation in ceramic wares. All the
contexts presented extremely scant evidence of other mass-produced goods like imported, refined earthenwares or glass bottles indicative of alcohol or medicinal applications. Based on vessel forms and estimated rim diameters, the cooking wares indicate culinary practices that were heavy on stews, soups and porridges, as well as consistent use of tiesto griddles to toast various grains like barley and maize in all three contexts.

The faunal evidence showed important similarities between the Casa de Obraje and Molino Loma contexts and generally exposed a major transformation in local animal ecologies that were dominated by cattle, sheep and goats. There was only scant evidence of wild species, indicating that meat protein was likely acquired through the hacienda or local social networks and not supplemented through hunting. Whereas sheep was slightly more common in the Casa de Obraje context, cow was more common at the Molino Loma context. The faunal assemblage from Pingulmi is too small to draw meaningful or dependable conclusions, but the lack of any cow remains is a potentially important indication that access to beef was more limited for those living more independently of the hacienda.

The following chapter further discusses the artifact data to draw broader conclusions by contextualizing the assemblages within regional data sets. The comparisons offer a broader perspective for the Andean region as well as other sites in Latin America. As archaeologists continue to excavate contemporaneous sites throughout the Andes, a more granular interpretation comes into focus as a means by which to assess the material lives of communities navigating the circumstances of the plantationocene and its effects.
CHAPTER 7: INTERPRETATIONS OF ARCHAEOLOGICAL AND ARCHIVAL EVIDENCE

This dissertation is framed as an archaeological political ecology of the hacienda system to foreground the important relationships between environmental change, everyday lives, economies, inequalities, and social practices. Scholars have long studied the Andean hacienda, and large-scale land tenure systems across Latin America in general, primarily as a political and economic phenomenon. As discussed in Chapter 2, these studies provided foundational understandings of how plantation-style agriculture ruptured or tapped into existing markets, captured labor, and began the march toward capitalist production. In contrast, this dissertation has centered the relationship between human social life and local ecologies through a framework of political ecology. To that end, this chapter discusses the interpretations of archaeological and archival evidence discussed in previous chapters and places Guachalá in context with comparative sites to highlight broader implications.

The following research questions guided the methods and analysis at the center of this dissertation and provide a framework for the discussion in this chapter.

1. How do local communities navigate the ecological changes and exploitative effects of large land tenure systems characteristic of the Anthropocene/plantationocene?

2. In what ways are households, like those of the huasipungo system, impacted by ecological change in their everyday lives, economies, and social practices? How did this manifest as a result of the introduction of new species like sheep, cattle, barley and wheat to the Ecuadorian highlands?

3. How did ecological transformation and new labor systems force growing forms of resource precarity and food insecurity for local families? And despite the challenges and constraints of these new infrastructures of precarity, how did local families shape emerging forms of life in a changing agrarian landscape?
4. How do the forces of history echo across contemporary manifestations of the hacienda system in the context of the neoliberal export flower industry across the former lands of Hacienda Guachalá?

The following sections discuss interpretations relating primarily to the first three research questions and provide the historical depth necessary to consider the fourth and final research question above. Chapter 8 will address the fourth research question in further detail by connecting the archaeological and archival evidence with descendant oral narratives and ethnographic perspectives from residents in the study area today.

7.1 Artifact Synthesis and Comparative Discussion

The archaeological investigations described in the previous two chapters have contributed to our understanding of the socio-ecological history of the study area by providing fine-grained detail of the materiality of life in the region. These are especially valuable when contextualized with other regions in which archaeologists have examined comparable processes of colonial and post-colonial transformations. The recent proliferation of historical archaeology across parts of Ecuador, the Andes and Latin America has provided important comparative data sets and perspectives with which to understand the relations between environmental transformations and everyday lives since the onset of European colonization. Tracing the similarities and differences across regions can provide important comparative insights that tell a more nuanced story of life in the plantationocene as it manifested in Latin America. This section summarizes the primary interpretations of the archaeological evidence from Operations 19, 21, and 78 and puts these in perspective by comparing artifact assemblages to those recovered at comparable sites.

The material analyses from Operations 19, 21, and 78 highlight several key insights about the everyday lifeways of rural families associated with Hacienda Guachalá. They also illuminate important larger-scale transformations in local ecologies and landscapes that affected those
quotidian practices and speak to the webs of relations at the heart of a political ecology of the hacienda system.

Faunal evidence demonstrates an absolute transformation in local animal ecologies, meat consumption, and related ecological degradation just a couple of hundred years after the introduction of Old World domesticates like cattle and sheep to the northern highlands of Ecuador. The data described above show that the Cangahua landscape and household refuse were dominated by cow, sheep and goat to the near complete exclusion of other native or wild animals. In contrast, archaeofaunal analyses in the region of sites occupied well before colonization show a landscape and diet dominated by rabbit and deer (Stahl and Athens 2001). At the site of La Chimba (ca. 700BCE – 250CE) in the area of Cayambe, over 40,000 faunal specimens were identified. Rabbit made up 14,587 of these specimens while deer bones comprised 5,717 in addition to nearly four dozen other taxa (Stahl and Athens 2001: 165-168). In comparison, the assemblage analyzed in this dissertation shows a near absence of both rabbit and deer and a severe deficiency in diversity of diets as well as likely environmental stress.

While the La Chimba site is much earlier chronologically, early Spanish chroniclers in the highlands of Pichincha province described similar conditions during the sixteenth century (Salomon 1986). Frank Salomon has compiled several early ethnohistoric sources in confirming that Indigenous residents of the region enjoyed bountiful hunting grounds with quantities of “rabbits, partridges and other birds” (Salomon 1986: 82). According to one early chronicler, the situation was such that “there are so many deer, that a soldier can go out with a crossbow and bring back six or seven deer in the evening” (quoted in Salomon 1986:82). The same source noted that deer were often prepared in jerked meat style, while rabbit was often added to stews like locro with red pepper (Salomon 1986:82). Based on the faunal assemblage in this
dissertation, the preparation of stews continued, but with the substitution of meat from cow or sheep.

Salomon also notes that guinea pigs were an important component of every rural household but not solely as a source of protein. In fact, guinea pigs were mostly eaten only on rare festive occasions. Their primary utility was in the production of organic waste that could be used to fertilize household gardens as major sources of daily food (Salomon 1986: 82). The remains of guinea pig in Operations 19 and 21 suggest that this may have been an ongoing strategy to produce food at the household level in the chakras around the home. This is a practice carried on in some households in the Cangahua area today and represents a major agroecological technique that could have helped to lessen dependency (and debt) on the hacienda for grains just as it is encouraged for food sovereignty today by a variety of communities and organizations.

New multidisciplinary research at a nineteenth and twentieth century hacienda on the Galapagos island of San Cristobal has demonstrated a similar transformation of the native ecologies there. Archaeobotanical analyses indicate that the largely arboreal landscape was transformed in some portions and replaced with grassy landscapes, likely as part of clearing processes for agricultural production (Astudillo 2018; Stahl et al. 2020: 96-97). Fernando Astudillo (2018: 745) notes that a traveler to Hacienda El Progreso in 1905 expressed concern for the disappearance of native species and that there was an emerging shortage of timber and firewood. The traveler’s suggestion for the introduction of other non-native species of tree to remedy the issue in San Cristobal is reminiscent of the introduction of eucalyptus trees to Hacienda Guachalá and the entire highlands just half a century prior.

The introduction of massive pasture livestock like cows and sheep to the Cangahua area was responsible for the erosion issues that eucalyptus trees were later meant to redress, and
similar faunal transformations occurred in Galapagos as well. At Hacienda El Progreso it was
cattle and goat that made up most of the assemblage from domestic contexts, in some ways
similar to the situation at Guachalá (Stahl et al. 2020: 87-91). This shift in native fauna and flora
had major ramifications for the landscape as well as the everyday possibilities of social lifeways
like diet and labor practices. The hundreds of workers there were brought in from mainland
Ecuador and, due to the remoteness of the estate, were largely reliant on the importation of all
goods by the estate owner from whom they had to purchase goods. They were thus reliant on the
hacienda store, without any local or ancestral exchange connections.

Outside of Ecuador, Elizabeth Terese Newman’s (2014a, 2014b) analysis of excavated
remains from worker housing at Hacienda Acocotla in Yucatan, Mexico and Di Hu’s (2016)
analysis from a colonial obraje in Peru provide additional context for understanding the faunal
and ceramic assemblages from Guachalá. Newman reports a scarcity of wild animals in the
faunal assemblage there during the late nineteenth century period leading up to the Mexican
Revolution. This scarcity of self-procured native meats is similar to the results from Guachalá,
which may indicate a similar forced reliance on acquisition of meats from the hacienda, local
markets, or household provisioning of domesticates. In both cases this may be a result of
environmental stressors on the overall population of wild, native species or shifts in dietary
patterns as a result of social constraints. It also demonstrates the substitution of cattle, pigs, and
goats or sheep into the local diets in place of native species. Species diversity was higher at
Acocotla than at Guachalá but low in actual specimen numbers. Just like the conclusions from
Operations 19 and 21, Newman found that meat was primarily prepared in soups or stews.

Di Hu (2016: 381-384) came to similar conclusions regarding the faunal remains of a
colonial (pre-1820) midden at the obraje of Pomacocha in Ayacucho, Peru. She found that cow,
sheep and goat dominated the assemblage even during this earlier seventeenth and eighteenth-century occupation. At the obraje, most bones reflected preparation as dried meats or stews rather than roasting, similar to Guachalá. She did find greater evidence of workers there supplementing their diet with wild animals, however, as compared to the obraje at Guachalá. The contexts at Acocotla, Pomacocha, and Guachalá therefore all suggest an adaptation of protein source to a customary preparation and serving methods consonant with local foodways even during colonization and generations after the end of formal colonization.

It is also helpful to compare the ceramic assemblages across sites to better contextualize the household ceramics described in Chapter 6. Ross Jamieson’s work around Cuenca, Ecuador in the Southern highlands was among the first systematic investigations of the material culture at Spanish colonial sites in the rural Andes (Jamieson 2000). His excavations at two rural sites are particularly helpful here. The Hacienda Yanuncay Grande appears to have been an elite colonial rural residence and the site called Cachaulo was a rural estancia, which was likely a mixed grain and sheep farm. Any laborers who worked at Cachaulo were likely mitayos, indigenous Andeans who traveled to the property from their home villages. While rural, the excavations in these contexts are different from those conducted at Guachalá as the contexts likely reflect the material lives of elite residents rather than laborers, and include material from the earlier seventeenth and eighteenth centuries.

Despite those differences, the ceramic assemblage from Cachaulo is an interesting counterpoint to Guachalá based on the proportions of decorated wares. At Cachaulo, 50% of the ceramic assemblage was made up of Andean-made majolica (by minimum number of vessel (MNV) counts), a higher status decorated ceramic that was rare at Guachalá. Imported British pearlware and whitewares were present but very rare. Artifacts from Yanuncay Grande were
roughly similar, including Andean-made majolica as 60% of the assemblage, and the rest comprised of locally-made coarse earthenwares. Imported British ceramics were also present but rare. Both sites recovered higher proportions of glass bottle fragments than found at Guachalá (Jamieson 2000).

At both Cachaulo and Yanuncay Grande, then, the residents chose to use significantly higher proportions of higher-status, locally-made majolica ceramics (and glass) than what was used by or available to the huasipunguero families of Guachalá. This is a helpful insight, because it does mean that, at least in the southern highlands, rural sites did have access to Andean majolicas from urban centers. The lower numbers in worker domestic contexts at Guachalá therefore indicate that it was either a preference for a different vessel form or the choice not to purchase more expensive goods from more distant urban markets. Instead, they seem to have chosen to remain engaged in local production networks, perhaps maintaining close ties to exchange partners from neighboring communities.

In contrast to these rural elite homes in Cuenca, Daniela Balanzátegui (2017) investigated the domestic remains of enslaved Africans at the Jesuit Hacienda La Concepción, in the Chota-Mira Valley north of Cayambe. Balanzátegui excavated the remains of an eighteenth-century midden and found nearly 97% of the ceramic assemblage by total sherd count to be comprised of plain, coarse earthenwares, significantly higher than the contexts excavated in the orbit of Hacienda Guachalá. The earlier period of occupation may account for the smaller quantity of decorated ceramics at La Concepción, as acquisition of goods produced in urban centers like Ibarra and Quito still would have been more difficult in rural areas compared to the nineteenth century. There are some similarities in the decorative palettes at the two sites, however, including polychrome brown and green-on-buff wares and the multiple uses of green lead glazed
ceramics, likely for both cooking and serving based on the presence of soot and their diverse forms (Balanzátegui 2017).

The morphological analysis of vessels at La Concepción showed primarily large jars/pots and rounded bowls. Balanzátegui notes that this rounded bowl form has been associated with enslaved African-descendant populations in the Caribbean and the form is understood to be part of West African food preparation traditions. In any case, there is clear evidence both at La Concepción and Guachalá for the preference of cooking and serving wares consonant with their respective foodways traditions.

The highland contexts of Guachalá and La Concepción stand in contrast to the ceramic assemblage recovered from Hacienda El Progreso in San Cristobal, Galapagos. Two contexts from the Cobos hacienda that date to the second half of the nineteenth century and first few decades of the twentieth century provide helpful comparative contexts: the worker village excavations and the estate house and outbuildings midden (Stahl et al. 2020: 103-106). Both presented significantly higher amounts of glass beverage containers, which made up 29% of the worker village assemblage and 24% of the estate house midden. Ceramic tablewares and cooking or storage wares together made up just 14% of the worker village assemblage and about 12% of the landowner house assemblage (Stahl et al. 2020: 103-106). This composition of artifacts is a stark contrast to the Guachalá worker contexts, which were dominated by mostly locally-made ceramics with scarce glass artifacts. Additionally, at the worker village, 3% of the assemblage included pharmaceutical containers by count, suggesting greater access to manufactured medicine than what was available or desired by the resident laborers of Guachalá.

First-hand accounts from visitors to Hacienda El Progreso mentioned high alcohol consumption at the estate, including imported alcohol consumed by the estate owner, Cobo,
himself (Stahl et al. 2020: 112-113). The hacienda store also had wine and liquor for workers to purchase. This is in stark contrast to the ethic of alcohol consumption at Guachalá, which was likely tempered by the Conservative movement against the “evils” of drunkenness, which would have been particularly strong at Guachalá where the leader of the Conservative movement, Gabriel García Moreno, was in charge for five years beginning in 1868. This is not to say that alcohol was not consumed at Guachalá. In fact, it is likely that huasipunguero families produced their own alcohol from the agave (penco) plant (guarango alcohol) or from corn and even barley (chicha). Ethnohistoric records suggest that guarango was often consumed during agricultural labor while maize chicha was consumed on festive occasions.

According to Stahl et al. (2020) the ceramic assemblage also showed an affinity for European products. They note that coarse earthenwares never made up more than 5% of the recovered ceramics from any context (Stahl et al. 2020: 117-118). Refined white earthenwares recovered from El Progreso included vessels that could be traced to specific potters in Staffordshire, England, as well as significant numbers from France and Belgium. This mixture of European-made ceramics shows significant global connections on the part of the hacendado himself and his deep connections to French consumer tastes. It is likely that he was responsible for ordering the goods that would have been made available on the remote island and hacienda, which would account for the unique ceramic assemblage recovered there.

In contrast to Guachalá and late nineteenth-century contexts in Latin America generally, workers and other residents at El Progreso used much higher amounts of French ceramics in addition to British products. Workers at El Progreso were thus cut off from the mainland, from their communities, and from the exchange networks that they otherwise would have engaged in
to procure the plain earthenwares that make up the vast majority of contemporaneous contexts in Latin America, and especially at Hacienda Guachalá.

The presence of two examples of “Murray and Lanman” Florida Water bottles at El Progreso, like the single example found at Guachalá, is among the only similarities between the material lives of workers at the two estates. The assemblage from Guachalá demonstrates that huasipungueros relied on local exchange networks as much as possible to acquire the goods they needed, likely in an attempt to avoid any further debt to the hacienda. The goods they did acquire were also central to the foregrounding of social practices of collective identities and obligations, a manner of tightening social ties, perhaps as a way to manage amid the infrastructures of dependency and debt forced upon workers by the huasipungo system.

Placing the material lives of nineteenth and early twentieth century families in coerced labor arrangements with Hacienda Guachalá in context with these other regional sites highlights a few important takeaways. The residents at Guachalá and Pingulmí actively engaged with local exchange networks to acquire goods that they needed to carry out their everyday lives. This implies ongoing social relations with neighboring communities, through mechanisms similar to the mindalae exchange system characteristic of the region prior to colonization. There was a clear preference for the goods that mediated collective identities and obligations based on the dominance of large pots and jars, tiesto griddles, and lack of matched or individualized serving wares. This is important not just for the performance of local identities but for strengthening the bonds of community and support networks. This would have been particularly significant in a context in which the development of rural agrarian capitalism over a couple of centuries had created the historical conditions for resource and food insecurity.
The ongoing use of the above ceramic wares for food preparation does not simply indicate a conservative maintenance of timeless foodways practices, however. In fact, new grains like barley became essential nutritional components of local diets and were creatively incorporated into existing repertoires, according to the records of socorros from the nineteenth century further reviewed below. Along with maize, the tiestos would have been used to toast barley for meals like barley porridge (*machica*) that remain typical Indigenous meals in highland zones like that of the upper communities of Cangahua. Ross Jamieson came to similar interpretations of botanical remains from excavations of an eighteenth-century neighborhood in Riobamba, Ecuador where barley became an important part of Indigenous diets (Jamieson 2010). He noted that “the acceptance of new crops seems…to be based on the familiarity of the properties of the crop, its ability to improve yields, and the ways that it fits into existing food-processing systems and cuisines” (Jamieson 2010: 209). The results from Guachalá reinforce the point that such foods cannot simply be held as dichotomous New or Old-World grains symbolic of either Indigenous or European identity. Rather, the process by which communities incorporate certain foods in diverse ways speaks to the complexities of navigating changing circumstances, constraints, and needs.

Sources of meat protein may be similarly complex. The faunal remains clearly show that just a couple of hundred years after the beginning of colonization, Old World domesticates had transformed the entire landscape of Cangahua. Ethnohistorical records note that the region suffered from severe erosion as a result of over-grazing by these animals. The degradation of land resulted in the expansion into new and higher altitude lands and the granting of the degraded land to the huasipungueros who were left with an inability to produce adequate amounts of their
own food. As a result, they were left reliant on purchase from the hacienda, which left them increasingly indebted.

The faunal remains and estate accounting books suggest that there was access to animal protein in the diet of huasipunguero families but this was not the whole story. The residents adapted these new protein sources into their foodways repertoires of soups and stews and largely had access to a diverse variety of cuts of meat, not simply low utility cuts or inexpensive ones. Yet documents also record that likely unsanitary meat was repeatedly sold to the families. Documents in 1881 show that cattle were dying of hunger (a result of over grazing) and disease en masse (ANE, Caja 19, V1, 1881). This was the meat sold to huasipunguero families.

In dealing with infrastructures of food and resource insecurity, the families relied on their cultural knowledge and practices and adapted them to the contemporary conditions. Unable to acquire pharmaceuticals, they relied on alternative medicinal plants and tinctures that they could procure in the surrounding landscape. They strengthened regional exchange networks to get the material objects they needed to cook, eat and fortify their domestic lives. A few examples of beads and personal spindle whorls show that they valued the performance of local identity through clothing and personal adornments. While the landscapes and local ecologies were degraded and changing, and the hacienda transformed the relations between households, communities, and the non-human natural world, the households in and around Guachalá forged flexible means of navigating those complex forces. They did so as a way in which to accomplish adaptive and creative strategies to weather the scarcity of access to dependable, nutritious, and culturally appropriate foods and other effects of the hacienda system.

The archaeological evidence thus speaks directly to the research questions of this dissertation by revealing how social, political, economic and ecological changes of the hacienda
system impacted the everyday material lives of resident families. Site comparisons show that such impacts vary by region based on a constellation of factors that can affect individual communities and families differently, as well as the cultural and historical conditions that shape how people navigate broader forces. The material evidence illuminates variations in access to goods, market networks, adaptations in diet based on changing ecologies, and the ways in which material goods foregrounded forms of association between families and individuals.

7.2 Discussion of Archival Evidence

The archival evidence discussed in Chapter 4 revealed additional details that help to respond to the main research questions. One of the central goals of the archival analysis was to understand the major moments of socio-ecological transformation in the Cangahua countryside, from the time of European colonization to ongoing iterations today. Most important among these was the introduction of European sheep, cattle, barley, wheat and later, eucalyptus. Colonists unleashed these beings on local landscapes in order to recreate European countrysides, cuisines, and cultural aesthetics in these new territories. In doing so, however, they also weaponized these plants and animals toward the displacement of local ecologies, the ability of Indigenous leaders to maintain economic influence and control over native goods, and degraded the physical soils to which they would relegate Indigenous families’ homes and domestic plots.

Around Hacienda Guachalá, this had a major impact on the social organization of the landscape across its multiple ecological zones from the valley floor to the high-altitude páramo grasslands. The proliferation of sheep and cattle disrupted existing socio-economic circuits of the meat from native rabbit, deer, and guinea pig. Sheep wool also replaced native cotton as the material of choice for cloth. The fertile valleys became pasture lands for this new livestock and the staging ground for large-scale cultivation of wheat and barley, pushing Indigenous families
ever further into higher altitude zones that became subject to more intensive use. The consequences of these trajectories are ongoing (López-Sandoval and Maldonado 2019).

These ecological transformations thus also forced new relations of labor and servitude and challenged the social systems of local communities and kin groups. By the end of the seventeenth century nearly 80% of the Indigenous population of Cayambe was ensnared in labor relations with hacienda estates (Ramón 1987: 177). Many of them were responsible for shepherding flocks of sheep and herding cattle that were used to supply urban markets in Quito or the southern highlands. But by the early 1700s, the obraje textile sector was transitioning from the south to the northern highlands, including at Guachalá where a license was granted in 1700 (AHE, SG0002.10, 1646-1723). This sector also introduced outsider laborers to the estate, likely brought north as experienced textile experts. Nevertheless, these new populations of outsider status were able to integrate into existing kin networks, according to analyses of patronyms over the seventeenth and eighteenth centuries (Ramón 1987: 227-229). Additionally, the most powerful kin groups within the ranks of hacienda laborers, based on last names, took the higher worker ranks on the estate and endured as more powerful brokers. This information suggests that while the ecological transformations went hand in hand with abusive relations of servitude, these residents also adapted by articulating kin networks that would provide a means of support and that generated changing forms of power and hierarchy among laborers.

By examining the records of the *libro de socorros* and *suplidos*, it was possible to see the goods provided to the huasipunguero families (and deducted from their salaries), thus offering complementary data to archaeological insights on food remains. Examples from 1889, covering the period of March to July, showed they were given primarily barley as well as potatoes, cloth to make their own clothing, and a few pounds of meat for Easter (ANE, C150, Exp1). Barley had
taken over as the dominant foodstuff in the diet of residents. Meat was provided for special occasions on Catholic holidays. Chapter 4 also described the numerous examples of laborers requesting additional rations for special ritual occasions, most often sheep or cow for meat in addition to maize or potatoes. This is significant, because although barley became the dominant foodstuff, on special occasions these families indebted themselves further to procure native goods like maize and potatoes. This fact highlights that although barley was incorporated heavily into diets, foodstuffs still carry significant symbolic force. The native grains and tubers expressed more appropriately the expected rites on festive occasions.

The repeated examples of requests for additional foods and money for ritual occasions highlights the importance of ritual practices as part of the process of forging community ties. Documents from the late nineteenth century showed the explosion of requests in the weeks leading up to special festive occasions like San Pedro in June. Other examples included funeral rites, vigils, weddings, and births. Such occasions are important expressions of cultural identity and sites of belonging.

Documents also highlighted precarious interdependencies between humans and livestock. Accounting records from 1881, discussed in Chapter 4, revealed the frequency with which cattle died in pastures both in the valley and in the páramo (ANE, Caja 19, V1, 1881). They most often died of malnutrition, where they were described in the records as “skinny” or “sick.” Regimens of care for these animals were apparently not prioritized, as their mass raising excluded more personal attachments and treatment. But these “downed” cattle were also subsequently given to the hacienda laborers as meat, skin or lard – specifically to the workers of the obraje or to the groups of minga collective work parties. The mistreatment of both humans and other animals as a result of this economic regime coalesced in this dangerous transfer of protein. These are
important interconnections between human well-being and the health of other animal and plant species that Kregg Hetherington (2020) has referred to “agribiopolitics.” Noa Corcoran-Tadd and Guido Pezzarossi (2018) have also highlighted these precarious interdependencies in post-conquest Guatemala and Southern Peru, respectively. In their case, focus is paid specifically to the changes in forms of work and physical stress placed on both human and non-human animal communities to create infrastructures of labor like animal transport regimes feeding into colonial mining centers.

These shifts in bio-political ecologies demonstrate how new economic systems can fundamentally alter relations between humans and other beings. Analyses of labor thus benefit from considering the interconnections of changing ecologies and multi-species relations. In fact, colonial period transformations laid the groundwork for ever intensifying precarity of human and non-human interdependencies characteristic of today’s industrial models of food production (Besky and Blanchette 2019). In this way, historical records from Guachalá revealed important information regarding the growth of livestock and new cereal grains, and later eucalyptus forests, that transformed the landscape and the rhythms of daily agrarian life. Such archival evidence shows how these new plant and animal species became incorporated into local foodways and medicinal practices, and how the huasipungo labor system attempted to dislodge social relations through labor and create infrastructures of dependence and precarity of hacienda laborers on the estate. On the other hand, historical records also present evidence of the enduring importance of kin obligations, marriage and ritual practices and how the new food items (like beef) were appropriated to honor those traditions in forging community relations.
7.3 Historical Echoes

Together, archaeological and archival analyses provided valuable insights to examine the connection between socio-ecological change and the everyday lives of residents in the orbit of Guachalá. Studies of labor and land tenure can benefit from considering bio-political ecologies in analyses that have traditionally been framed through a political economy lens. The changes to local ecologies ushered in through European colonization fundamentally altered the ecological relations between humans and non-human nature with consequences that are still ongoing and intensifying today. The way that families and communities deal with those realities is diverse and shaped by cultural and historical factors.

As we have seen, communities are not homogenous collectives that act as counterbalances to outside forces like capitalism. Rather, the archaeological and archival evidence in this dissertation has revealed community formations as frames of social action, forged in various contexts and often re-made through novel reformulations across changing social, political, ecological and economic circumstances. This process of forging community can be seen through the honoring of ritual obligations and kinship, through networks of economic or market ties (that are simultaneously social and political), and in shared daily practices.

The following chapter continues this story by integrating the testimonies of former huasipungueros and analyses of agrarian tensions today that have manifested between new forms of industrial agriculture and alternative agroecological movements. Tracing forward these histories highlights an enduring story of struggle, adaptation and resistance in Cayambe, once led by the Indigenous women leaders from the haciendas and now by their descendants in communities across Cayambe and the highlands.
CHAPTER 8: HISTORICAL ROOTS OF ANTHROPOCENIC TENSIONS

This final chapter considers the ways in which the histories and everyday lives of huasipungueros described in the previous chapters continues to echo through life in the region today. One of the key research questions of this dissertation is to understand how the history of the hacienda system shapes life today, both through ongoing processes of dispossession and violence, as well as through enduring movements for alternative social, environmental and economic futures. I ask how people carry forward these histories “into their aspirations for the future” (Colloredo-Mansfeld 2016: 166)? Previous chapters examined the archival and archaeological lenses on the impact of the hacienda system on the lives of residents. The following traces these insights forward in time to connect with the personal testimonies of former huasipungueros and their families, as well as the ongoing tensions between many local residents and the omnipresent flower industry.

In many ways, this tension colors everyday life in the former lands of Hacienda Guachalá. Where sheep, cattle, barley and wheat remade the region over 400 years ago, today it is industrial flowers that have again transformed the landscape and agrarian labor. Large landowners have again monopolized large tracts of land after the agrarian reforms of 1964 and 1973. Motorbikes and buses transport the descendants of huasipungueros, some from the high-altitude páramo communities, to process these flowers through neoliberal, market-driven wage labor. The monocropping of flowers for global export exhausts the soils, requiring resource intensive fertilizers, pesticides, and even the extraction of soils from nearby communities to replenish lost sediments and nutrients. Many local communities today worry about the degradation of land, the input of dangerous chemicals, changes to family structures, and the ongoing cultural shifts at odds with ancestral lifeways.
And yet, in the midst of these changes and dangers, residents have forged novel forms of economic activity and social life as alternatives to the powerful orbit of the floral industry. Youth promote local cultural identity and heritage as a sustainable economic and social path forward. Bilingual education and Indigenous cosmologies form the basis of political movements and academic training. Women form collectives to produce crops through organic agroecological techniques and ancestral knowledge, all while providing mutual economic independence and support networks. In some senses, the force of global capital has inspired a groundswell of alternatives, based in local lifeways, ecologies, and knowledge. These are some of the enduring manifestations of the nearly five centuries of hacienda history in the region.

It is in this context that I conducted interviews with former huasipungueros, spoke and worked with agricultural collectives, collaborated with a youth cultural group, and participated in an agroecology course designed by a local Kayambi cultural and political federation. This chapter begins with a brief introduction to the expansion of the flower industry in the Cayambe region to situate the ongoing tensions. The chapter then shifts to the hypnotic music, dance and drink of the annual San Pedro celebrations to frame the main concerns of this chapter and illuminate the intersections of the key arguments of this dissertation. Finally, as with most other aspects of life since March 2020, the ongoing COVID-19 pandemic has revealed additional insights that are important to consider in light of this study on the political ecology of the hacienda system. The chapter thus ends with the remarkable efforts of local residents to persevere through the framework of collective action and ancestral knowledge.

8.1 A Rosy Future?

Across centuries, the physical and social landscape of Cayambe was transformed with the introduction of new plant and animal taxa, and this process continues. As described in Chapter 4,
barley, wheat, sheep and cattle transformed the local landscape and the ecological relations within which native residents were entangled. By the end of the nineteenth century, Australian eucalyptus trees began to spread through parts the highlands, with an early push from cultivation at Hacienda Guachalá (Kincaid 2013). These plants and animals continue to dominate local economies and subsistence, including an important dairy sector bolstered in the early twentieth century by the introduction of Holstein Friesian cows (Mena-Vásconez et al. 2020). A strong dairy sector continues in the area with the presence of transnational companies like Nestle. But starting at the end of the 1970s, a neoliberal turn ripened conditions for the creation of a new agribusiness based in the cultivation of non-native flower species like roses. Between cattle farms and eucalyptus forests, greenhouses erupted across the landscape.

The neoliberal environment shifted options for investment and production in the area and made the cantons of Cayambe and Pedro Moncayo among the most important flower production centers in the world, along with Colombia, the Netherlands, and Kenya. New policies deregulated markets and spurred exports, all of which encouraged the investment in a new non-traditional agricultural product. The investments were particularly attractive with the abundance of local, cheap labor that could be employed as wage laborers on new rose farms that required more hands per acre than other local dairy farms (Korovkin and San Miguel-Valderrama 2007; Lyall 2010; Soper 2013). The biophysical environment also favors the production of roses there, nurtured by consistent daylight hours, exposure to sun directly overhead along the equatorial line, and cool temperatures in the mountainous region controlled with the aid of greenhouse infrastructure.

With the first flower plantation established in Cayambe by 1983, the industry grew quickly (Lyall 2010: 17). The volume of cut-flower exports rose from around 8,000 tons in 1990
to around 139,000 tons in 2014, making flowers one of Ecuador’s most important exports behind petroleum, shrimp, and bananas (Mena-Vásconez et al. 2020). Recent numbers indicate that despite a major drop in exports during the early pandemic period in 2020, the industry has recovered and seen massive growth of over 200% from the previous year (OEC 2021). The industry also comprises both large exporters averaging over 11 hectares of land, as well as increasing smallholder growers (Mena-Vásconez et al. 2020). Many local families in Cangahua have opted for the latter route, utilizing their experience in the industry to open their own small greenhouses in their communities and selling stems to larger exporters. These small operations can often be sources of tension within small, mostly Indigenous communities who have diverse perspectives on the effects of flower farms on their own domestic chacras (domestic growing plots).

While the floriculture sector has provided vast new sources of employment in Cayambe and Cangahua specifically, the industry has divided residents on the tradeoffs seen in the tensions over water access, land access, pollution, health, and other social conflicts. Land distributed to former huasipungueros after agrarian reforms in 1964 generally did not provide adequate, fertile land sufficient for viable livelihoods. This was true particularly after these plots were sub-divided to new generations within families (Soper 2013: 131). Intensified local dairy farming in the valley did not require high numbers of laborers in general, and the result was that many of the younger generations during the 1970s opted to migrate from places like the Cayambe countryside to urban centers to find work. That trend ended with the employment opportunities of the flower industry, with many remaining in their communities and even attracting migration from the Ecuadorian coast and places like Colombia and Venezuela most recently.
Yet at the same time, the flower industry presented threats to human health and local ecology. By forming unions and watch groups, local community groups after 2000 began to more intensively push for industry regulation to require environmental impact statements and regulate the use of toxic chemicals in pesticides and fertilizers, waste disposal, and contamination of waterways, soils and air (Lyall 2010, 2014; Soper 2013: 137-138). Enforcing those regulations became an added challenge to local politicians and community organizations, however.

What has resulted is an eerily familiar form of socio-ecological transformation in the parish of Cangahua and the entire region. The floriculture greenhouses embody the “modular simplification” of plantation agriculture, which has several complementary effects (Tsing et al. 2019). Following Tsing, Mathews, and Bubandt’s (2019) recent theorization of anthropocene landscapes, “modularity” refers to the social discipline of plantation agriculture while “simplification” highlights the monocropping crucial to capitalist economic output. The modular simplification of the landscape formerly owned by Hacienda Guachalá for centuries thus renews many of the historical transformations of labor and ecologies long familiar to local residents. Spatially, the plantations surround themselves with imposing, tall walls and guard towers and gates, through which workers must identify themselves upon entering. The social discipline of hourly wage work and the demanding harvest quotas required of floriculture employees calls forth the former labor accounting practices of the huasipunguero libro de raya, in which each day of work was recorded with a tic mark and all debt carefully annotated.

The rows upon rows of various roses and other flowers inside the greenhouses invoke an uncomfortable ecological flourishing – uncomfortable precisely because it is also an ecological “simplification” (Figure 8.1). As Tsing et al. (2019: 189) explain, “plantations create monocrops
to make it possible for coerced and alienated labor – and more recently, machines – to tend crops without the care that farming otherwise requires...Plantations attempt to reduce the number of living things in an area to just one kind; everything but that which is required for the reproduction of the economic product should be eliminated.” Such ecological simplifications, and the social discipline undergirding their productivity, were also the fundamental mechanisms and substrate upon which European colonization re-configured entire physical and social landscapes since the sixteenth century.

For this reason, it is important to consider these broader ecologies in assessments of colonialism, capitalist development, and the enduring displacements that they provoke. Earlier flourishings of introduced sheep and cattle, wheat and barley – all of which are still vital to the region – altered the everyday relations that textured residents’ lives. These created new labor tasks: lives spent herding sheep, milking cows, producing cheese, and dyeing wool. The new ecologies altered foodways in entirely unpredictable ways, with local residents incorporating the new products into their familiar repertoire of meals and everyday social practices. These ecologies also dispossessed local residents of access to land and the ability to produce their own food and subsistence, forcing economic precarity and depriving them of the right to “food sovereignty.”

Today, the same process is ongoing in new and familiar ways. The flowers structure residents’ lives and influence their engagement with their own families and communities (Korovkin 2003). Workers carefully manage the growth of each plant, the cut of each stem, and the packaging of each bunch of roses. Just as the sheep’s wool was carefully dyed in the obraje of Hacienda Guachalá according to the particular cloth, so too are many roses dyed according to the tastes of consumers in Asia, while others are bred and patented to accentuate the preferred
natural colors of consumers in the United States and elsewhere (Figure 8.2). In this process, workers must often choose between the wages of the flower plantation or committing to community responsibilities and must balance the rigors of work with family responsibilities and their own chacras.

The development of this new socio-ecological transformation in Cayambe thus follows, and was enabled, by the centuries of hacienda re-configurations of lives and ecologies in the region. The question that remains is how these histories of social struggle and adaptation shape responses to the floriculture industry today. This is a task to expose the ongoing displacements of the hacienda system but also the resilient alternatives that descendants fight for, often through the framework of “community” formations and ethics of collective responsibility.

![Figure 8.1 Rows of roses flourish at a local flower plantation in Cayambe, Ecuador. (Photo by the author.)](image1)

![Figure 8.2 Flower plantations create distinct color schemes, some natural and some dyed, for the diverse aesthetic tastes of global consumers. These flowers were waiting to be packed at a flower plantation in Cayambe, Ecuador. (Photo by the author.)](image2)
8.2 Celebrating “Humble” Things

Each year at the time of the June solstice and start of the maize harvest season, Cangahua and all of its more than 50 communities come alive with the energy of “San Pedro.” In Cangahua, San Pedro generally refers to weeks of celebrations resulting from the mixture of Indigenous rites in honor of agricultural abundance and Spanish Catholic feast days of San Juan (June 24), San Pedro (June 29), and San Pablo (June 30). Referred to by some also as Inti Raymi, the celebrations today are important “performances” of cultural identities and heritage and also reflect changing attributes that are linked with specific historical moments (Pantazatos and Silverman 2020; Silverman 2013). The celebrations include a variety of activities, agroecological markets, a running race (a 5-kilometer heart stopper along the hilly Cangahua landscape at 3,200 meters above sea level), Catholic masses, and parades. But the most intense celebrations occur during three day-long “taking of the plaza” celebrations and a series of bullfights that now take place in the Cangahua town bullring. Previously, these fiestas took place at Hacienda Guachalá where the hacendado would host the annual celebrations in upholding the local moral “pact” of reciprocity between landowner and laborers (Figure 8.3) (Guerrero 1991). After agrarian reforms, the celebrations shifted to the parish center at the town of Cangahua. A description of these events from 2017 provides an informative backdrop with which to review the main lines of inquiry explored in this dissertation and frame some of the primary social and cultural tensions of the region today.
The month of June in the parish of Cangahua begins to come alive with renewed excitement as the fiesta season approaches in the otherwise sleepy parish center. Artisans in local workshops labor extra hours to finish preparing the traditional *zamarro*, heavy chaps made of goat skin and fur lined with sonorous bells. Crews begin to setup large stages and equipment in the main plaza. Local *bodegas*, or everyday provision shops, stock up on extra crates of beer and bottles of liquor. Households make preparations to earn extra cash selling food and homemade alcohol to partygoers. Artisan merchants from places like Otavalo arrive loaded with merchandise to sell to the thousands of people that will soon converge on the town.

By June 23, the town of Cangahua is abuzz with activity and, in 2017 and 2018, the festivities that day kicked off with a series of competitions intended to honor the agricultural heritage of the parish. That morning began with an agroecological fair in the central plaza,

**Figure 8.3** Photo of the San Pedro Festival in the main patio of Hacienda Guachalá, ca. 1929. Notice likely landowner Neptalí Bonifaz distributing alcohol to the Indigenous participants who gather for drink, music and dance. The rituals were also historically gendered, with women excluded from the activities on the main patio. (AHE, 84.F0031.1.)
followed each hour by a competition over the best local products: the top *cuy* (guinea pig), best dairy cow, top harvested onion (another major local product), and the best “autochthonous” drink in the categories of *guarango* (fermented Andean agave) and *chicha* (maize beer). The competitions thus celebrate a diverse assemblage of native and introduced flora and fauna and their importance to local cultural and economic life.

For three consecutive days beginning on the Saint’s Day in honor of San Pedro on June 29, members of communities, schools, unions, and other local civic organizations from throughout the parish dance, sing, and drink their way to the central plaza of Cangahua. These are referred to as the “gran toma de la plaza” in which the groups ritually “take” the plaza. On the third and final of these processions in 2017, some of the major themes of this dissertation coalesced in the community-organized processions that danced past me toward the plaza. Most of the participants had begun their journey within their own community lands moving across the upper and middle-altitude landscape toward the center of Cangahua. Some descended with the beat of their own instruments and *coplas* (songs often sung on San Pedro with lyrics inspired by each group). Others danced behind large trucks mounted with towers of speakers blaring the tunes of traditional songs or *música nacional* (genre of Ecuadorian music). Each community or organization represented itself with their name on large signs, through dress, different musical lyrics, material props and some with presentations similar to parade “floats.”

In 2017, two separate floats highlighted the complex intertwining of local cultural practices with distinct ecologies (Figure 8.4). One presented a large mannequin of an Indigenous woman represented with traditional local dress, though with white-mestizo complexion. Her clothing was partially made with roses of all colors, grown at local flower plantations, which also decorated a majority of the rest of the float. Another float was made on the bed of a pick-up
truck, decorated lavishly with a broad assemblage of mostly native plants commonly used in local diets and medicines. The truck was lavishly embellished with stalks of plants, including maize, potatoes, quinoa, wheat and other herbs and medicinal plants. On the truck bed, an older woman was hard at work grinding Andean maize into flour with a stone mortar and pestle. Next to her sat a medium sized ceramic jar, glazed on the inside but plain and unelaborate on the exterior and typical of jars excavated from huasipungo household contexts in this dissertation project. The vessel, grains and woman formed an assemblage evocative of local social identity and historical memory. The two floats offered onlookers two distinct representations of life in the region and the complex socio-ecological transformations and adaptations that have manifested over the last several centuries.

Another group of participants, dressed in white and red colors typical of the area historically, danced and sang toward the plaza on foot. Each brandished oversized models of everyday implements, including a wooden chicha spoon, large wooden plate (batea), a hand plow and pick, and ceramic jars carried on the back (Figure 8.5). These simple objects stood out among the elaborate costumes and atmosphere of the day. Throughout the festivities, these yanga cosas, or “humble things” (Colloredo-Mansfeld 1999), became key constituents in community displays as they proudly danced their way to the central plaza.
Figure 8.4 Two “floats” at the 2017 San Pedro festival in Cangahua, Ecuador. (Photos by the author.)

Figure 8.5 A community dances toward the main plaza of Cangahua during the San Pedro festivities in June, 2017. Note the objects that they have chosen to display. These are examples of the objects described as yanga cosas in this dissertation. (Photo by the author.)
These examples from the San Pedro fiestas highlight the intersections of several key themes examined in this dissertation. First, the processional performances emphasize the importance of considering the ecological changes that accompany major socio-political transformations like colonization, plantation-style agriculture, and capital intensifications. These are truly socio-ecological transformations, with direct impacts on the everyday lives, economies, and social practices of residents. Second, the role of everyday objects, or yanga cosas, as central protagonists in the San Pedro celebrations remind us that they are also central mediators in everyday social relations. Of little economic value, they nevertheless persist as significant in the memory and lives of local residents because they are central to the formation of cultural identities and social collectivities. Finally, these vignettes demonstrate the uneven ways in which histories, like the hacienda past, echo through contemporary social formations and memories. Tensions in conducting agrarian life, how to avoid economic precarity, and achieve the “good life” are visible in the seemingly innocuous parade floats just as they are in community meetings, newspapers, and everyday conversations.

The importance of these material goods was not simply a confirmation of archaeological hypotheses about their social importance in the past. Rather, the goods are important parts of expressive performances that make public already simmering tensions in this current moment. Their presence in San Pedro festivities in 2017 and 2018 is a key re-framing of ethnic identity within the current neoliberal moment. And they openly express how people differentially carry forward histories of the region in their desires for the future. The following sections consider the above three themes in further detail by integrating the archaeological and archival discussions of previous chapters with the memories and ongoing debates of former huasipungueros and their descendants today.
8.3 Tracing Socio-Ecological Transformations

The approach to this dissertation foregrounds the important relationship between environmental change and everyday lives, economies, inequalities and social practices. Pushing beyond the study of large-scale land tenure systems through a strictly political or economic phenomenon instead opens up analysis to broader human and non-human relations that texture our social worlds. Highlighting this point, the San Pedro parade floats described above re-insert key non-human actors into this story. They highlight the intimate connections and forms of attachments and dependencies that develop between humans, plants, and animals in these large-scale ecological transformations.

The testimonies of former huasipungueros and accounts of other descendants provoked additional reflections on the importance of local ecologies to their lives within these histories. Three interviewees ranging in age from 72 to 97 narrated accounts of life before, during, and after agrarian reforms in which plants and animals were enormously important. One woman who currently lives with her kids and grandkids in the valley by the Pisque River, narrated her earlier life as interconnected with the plants and animals described throughout this dissertation. Her father was a *mayoral* of the obraje well into the 1940s and her mother was an agricultural laborer who she described as responsible for sowing seeds. Both were intimately familiar with the landscape, its physical properties, and the ecological dependencies of the region. She proudly described her memory of the crops, exclaiming that the fields had everything: “lindo papa, lindo maíz, frejol, chulpi, morocho, todo!” (“beautiful potato, beautiful maize, beans, toasted corn kernels, hominy, everything!”). Her own life was structured by the milking schedules of the dairy cows as she walked to the stables at La Josefina each morning. She noted that when she had young children she had to simply carry on with the child on her back and milk the cows.
Though the work was difficult, even leading to talk of a strike between her fellow milk maid laborers, she lamented that there are now machines to milk the cows and the task has changed.

Another elder woman from the descendant community of Buena Esperanza just across the street from Hacienda Guachalá narrated similar accounts, and coincidentally also worked milking cows at the cheese workshop in the valley. Her daily life was regimented by the schedule of the dairy cows, waking up early to milk the cows, then make breakfast for her family, work a full day making cheese, milk the cows again, and finally return home late to make another meal. Her father was a carrier or driver who traveled up to the middle-altitude and páramo communities around Pambamarca, Quinchucajas, and Pitaná Alto to load fava beans, maize, potatoes, and morocho (another variety of maize) for transport to Quito for selling. She described their diet as “puro grano” (nothing but grains) but also confirmed that even when she was young in the 1940s and 1950s the administrators gave them cattle that had died. She recalled using the lard, especially, to cook “tostado” (toasted maize kernels). Around her house she proudly described having small numbers of sheep, chickens and other animals.

Both she and her son described how they used local plants for everything. They used to use the *penco* (agave plant) as a soap for bathing and to wash their clothes, to eat as a sweetener, and to make guarango alcohol. She recalled when she was young that the *capataz* (work task leader) would often come around before sunrise to announce the daily work task, shouting “Vamos a la tarea de arriba. Llevarán guarango!” (“Let’s go work up the mountain. Bring your guarango!”). Guarango was considered an alcohol to consume while carrying out tough agricultural tasks while maize *chicha* was generally reserved for special occasions. She proudly brews guarango to this day and, as the San Pedro festivals demonstrated, this drink has become more widely appreciated and consumed even on special occasions. She also described how she
gathered natural herbs to make medicines, including for gastrointestinal problems. She continues to raise guinea pigs and uses them as part of “cleansing” rituals and confidently brags that even medical doctors who are “so well studied” do not know how to practice this medicine.

This pride for the use of local grains and herbs is often contrasted with the diets of other residents full of processed foods, and new dry goods like rice and pasta. Rachel Corr has discussed a similar process in the highland community of Salasaca, Ecuador, where this distinction is tied to ethnic identity (Corr 2002: 6). She shows that residents often refer to the diets of elders who eat maize, potatoes, other tubers, beans, and barley, as a diet that “leads to strong bodies and thus prolongs life” (Corr 2002: 6). Those foods are referred to generally as “granos,” according to Corr, just as the interviewee above in Buena Esperanza described her diet as “puro grano.” These grains are not solely native plants, however, as barley has become one of the most important local foodstuffs, intimately tied to Indigenous foodways. This is similar to the role that barley played in Weismantel’s classic ethnography of life in Zumbagua, Ecuador, where it became a central symbol of the hearth, home and community (Weismantel 1988). This process of incorporating introduced grains into local cuisines is an important adaptive act that was also intimately tied to the ecological transformation of the Cangahua landscape.

Both of these women emphasized the intimate connections they had to various plants, both cultivated and wild, as well as the animals that literally structured their workdays. Their memories highlight these plant and animal assemblages as constitutive of their everyday lives, their diet, their medicine, their paid work, and domestic tasks. Their lives were oriented around these local ecologies as they still are today. The San Pedro float celebrated this relationship as a meaningful dimension of local cultural identity – one that is flexible and adaptive, but central to social life.
8.4 Yanga Cosas and the Materiality of Community

What was so extraordinary about the persistent presence of farm tools, clay cooking pots, and grinding stones featured by communities in the San Pedro celebrations? Their importance emerged from their very ordinariness at the otherwise boisterous and celebratory fiestas. These were objects seemingly out of place. Taken away from the chacras, the interiors of homes and the warm hearths, or the house patios where they would normally be used, the objects were instead hoisted in the main square of the parish center. They were used by a woman on the bed of a pickup truck descending to the plaza. They were carried on the backs and proudly wielded by families dancing in circles across the Cangahua landscape on this special occasion. They clearly had special significance to those communities who decided to include them in the partying, and this point also emerged as a central focus of this dissertation.

The objects are what Rudi Colloredo-Mansfeld (1999) has highlighted as yanga cosas, or “humble things.” For his informants in the rural highlands just north of Cayambe, these goods shaped life in important ways because they are used not just for household or daily tasks but in ways that “foreground collective obligations and identities” (Colloredo-Mansfeld 1999: 114). Economically worthless, they were central to the ways that individuals, families, and communities came together and understood their obligations and collective responsibilities to each other. In this way, material practices mediate social networks. The social power of honoring webs of mutual obligations and social ties is important to consider in understanding how people respond to broader social, environmental, political or economic changes. Importantly, there is a material dimension to this process – a materiality of community – as I approach it in this dissertation.
When asked to describe the homes of their childhood, all the interviewees for this project described the physical materials with which it was made, the animals that lived in and around the homes, and the tulpa (hearth) used to heat the house and cook the meals. They each noted that the walls of their huasipungos were made from the cangahua earth and the roofs made from the tall grasses brought from the páramos. The tulpa was placed in the corner of the house and each emphasized that only firewood was used to cook, and it had to be collected each morning to begin the meals. The excavations on Molino Loma (OP19) and the structure at Santa Marianita de Pingulmí (OP78) each revealed a tulpa in association with large grinding stone surfaces and in situ cooking pots. In the area of the “casa de obraje” (OP21) an additional large metate was recovered (Figure 8.6).

![Large metate](image)

**Figure 8.6** Large metate recovered from Op21, BD3, BS1, Unit 2 – the casa de obraje.

These material assemblages of home continue to serve as historical and cultural referents for the former huasipungueros. In our conversation, the 97-year-old woman from the valley made clear her distaste for the changing ways of preparing meals, for example. Recounting her own experiences, she described the tasks for cooking: “Ni molino no había para cocinar. Solo en
Piedra de moler sabían cocinar…tostando cebada en tiesto de barro” (“There was not even a hand mill to grind the grains. They only used the grinding stone…toasting the barley in the flat griddles made from clay”). After continuing, she expressed her resentment for how the grinding stone and tulpa were left behind: “Después resultó el molino. Dejaron la piedra de moler. Después resultó la cocina, y ya dejaron tulpa. La tulpa botada. Ahora más apuran, y ya no muelen. Solo molido compran.” (“Afterwards the hand mill came along. They stopped using the grinding stone. Later came the gas range, and they stopped using the tulpa. The tulpa was just thrown out. Now it is a big hurry and they don’t grind the grains. They just buy them already ground.”). In her accounts, the tulpa and grinding stone were more than mere tools. They were part of the social practices of everyday life and central to her own sense of self. These routines of rural life speak to broader social forces, however.

In Ecuador, anthropologists have described the multiple ways that food can convey cultural meanings and play roles in the performance of local identities, both in everyday and ritual contexts (Corr 2002; Harrison 1989; Weismantel 1989). This relates to the food itself as well as the practice of preparing it. Rachel Corr (2002: 4) has described how skills like peeling potatoes efficiently are cultural expectations of women in the Salasacan community of the southern highlands. In this sense, these physical acts of food preparation are similar in importance to the physical acts of preparing food slowly with the grinding stone over the wood-fueled tulpa as an important aspect of identity. Based on the results of the archaeological investigations and the oral history narratives, it is helpful to consider these yanga cosas as a material network of the hearth, following Mary Weismantel in her ethnographic study of Zumbagua, Ecuador. As Weismantel declared, “In Zumbagua, the hearth defines the home” (1989: 66).
Both Weismantel and Corr also highlight the importance of food and the hearth to rethinking the household as process and its interconnections to extended social networks. For Weismantel, “it is the sharing of cooked food that defines Zumbagua social groups, from the household to the community” (1989: 67). Similarly, Corr has observed that “food flows through the community via social networks and ritual symbols, giving concrete form to social relationships between people in the community” (2002: 6). From an archaeological perspective, everyday objects are key mediators of those relations.

The two older women that were interviewed both reported that most of the goods that they had when they were younger came from Otavaleños who periodically came to trade goods. One specified that Otavaleños used to travel around selling salt, lard, and ceramic pots. The pots came from Otavalo and, later on, some pottery came from Latacunga as well (an urban center to the south). The oldest woman recalled that Otavaleños often went to the hacienda to purchase wool and would also exchange other items. A third interviewee for this dissertation was an older shopkeeper in Cangahua whose family is from Otavalo but has called Cangahua home for decades. As a boy, and for decades afterwards, he traveled with his father from Otavalo to the communities around Cangahua to peddle goods just as the two women had described. He remembered traveling by foot between the communities selling meats, salt (“sal en grano”), tostado, and used clothing. Sometimes he had to stay overnight in someone’s house if it got too late to return to Otavalo. He was proud of the way his business connected him to people in so many different communities across the landscape and he became aware of the issues that people were facing and the events of the day.

Through both the use of yanga cosas in everyday interactions and their exchange in local networks, these objects came to mediate broad webs of social interactions within and beyond the
hacienda. Chapter 4 also highlighted the common act of requesting additional suplidos of maize, potatoes, and meat from the hacienda on special occasions. The most common instances included for holidays (recorded generally as “fiestas”), for weddings, funerals and wakes, and for providing a pregnant wife extra rations of protein. While indebting themselves further, the huasipungueros placed greater priority on strengthening social ties and obligations to immediate and extended kin. These sorts of practices and the dense network of social ties become salient frames of community action.

The aim in this dissertation is to understand how community is forged in various moments as a generative and adaptive social form. A political ecology of the hacienda system asks how human communities, and their non-human companions, respond when faced with ecological change. In a place like Cayambe, it also means asking how the hacienda past has shaped agrarian life in the region and how residents carry these histories into making choices about their futures. Communities are never simply found and they never stay the same. Communities disagree, transform and “fight” (Colloredo-Mansfeld 2009). As Andrew Orta has argued, like metalwork, communities are forged in ways that create “strength and resiliency as local compressive forces reshape the grains of the metal” (Orta 2013: 112). Today, new compressive forces present morphing challenges to life in the shadows of Hacienda Guachalá.

8.5 Historical Roots and Anthropocenic Futures

In many ways the San Pedro celebrations are a clash of communities, traditions, perspectives, and experiences. Historically, these are ritual competitions in which individual communities travel to a physical center and compete to take the plaza. It is therefore little surprise that major contemporary tensions should be visible in the celebrations, even if unmentioned. The contrast between San Pedro parade floats by different communities
celebrating local edible and medicinal plants on the one hand, and the vibrant colors of plantation roses on the other, highlighted one of these fundamental tensions. What has emerged in Cangahua, as it has in locales across the globe, is a disagreement on the proper path forward to achieve prosperity and well-being in agrarian landscapes altered by large-scale agriculture. These anthropocenic choices – meaning decisions that are now made increasingly often in the anthropocene – generally pit a struggle for food sovereignty and agroecology against international development, industrial agriculture and jobs.

Several scholars have examined the emergence of floriculture in Cayambe and identified similar and related tensions. The period after agrarian reform in 1964 was largely unsuccessful in democratizing land access and empowerment in the Ecuadorian highlands. However, Rachel Soper (2013) has noted that the period thereafter created an “organizational explosion” in the formation of formal communities and community associations. At that point many groups began to take advantage of the 1937 Ley de Comunas (Law of Communes) to advance local autonomy of social practices, community norms or ethics, and protection of land. Following this, the number of community associations also grew as “organizaciones de segundo grado” (second-tier Indigenous organizations) that would organize individual comunas to demand political reforms and development projects. Soper identifies this as the political-organizational landscape within which tensions play out today.

In her work in Cayambe, Tanya Korovkin (2003) suggested that the flower industry essentially holds the power to undermine those community institutions. She argues that this is because of the competing values or morals that marked the difference between life as a flower worker versus community norms. Often, the rigors of hourly wage work make participation in community meetings or minga work parties difficult or impossible (also Krupa 2010). Soper
(2013) has disagreed with the broader conclusion that this has also weakened Indigenous social movements in Cayambe more broadly, however. She argues that the strength of the industry has pushed the emergence of new community organizations in response. These organizations have not developed to reject the flower industry outright, but rather to reclaim the development on their own terms. Other organizations have emerged specifically to regain control over irrigation distribution, environmental regulation and the amount of land that can be used for flower production.

Angus Lyall (2010) found similar dynamics in his ethnographic research among flower industry workers, former workers, and residents of communities across Cangahua as well as with plantation administrators and trade unions. At a discursive level, a dichotomy is visible in the distinct perspectives of an industry trade union (ExpoFlores) that sells itself as offering “modernization” versus a civic community federation like Pueblo Kayambi that situates its fight within centuries of Kayambi “resistance.” Lyall (2010) finds, however, that differences in the historical experiences of communities and other individual differences like age and gender also create more complicated perspectives on the industry. Some residents have also opted to become small flower farmers themselves to avoid the abuses of plantation work while at least leveraging some of the economic benefits of the global trade.

Other important studies have highlighted the specific issues of water access and the conservation of páramo landscapes. Attending to what they call “hydrosocial territories” in Cayambe, Mena-Vásconez et al. (2020) reveal the conflicts that have emerged over access to and control of irrigation water. After flower plantations used disproportionate amounts to the detriment of farmers farther from the main irrigation line, an inter-community users’ organization took control of water governance. Furthermore, new legal changes declaring that
the State must guarantee communities and peoples food sovereignty, through adequate access to healthy, nutritious and culturally appropriate foods, has aided those organizations seeking to prioritize water for food-producing farms rather than non-edible export flowers.

The páramo ecosystems are essential sources of the water that eventually feeds those irrigation canals and have also recently come under increasing local conservation efforts. María López-Sandoval and Paola Maldonado (2019) have described the efforts of a collective management organization called Comité de Páramo Ñukanchik Urku (CPNU), which was formed in 1995 to manage the páramo for improved water availability. The territory covered by these agreements is located in lands formerly of Hacienda Guachalá and the environmental degradation they describe is likely directly tied to the intensive hacienda use of the land. Forcing intensive agriculture farther up toward the páramo zone in addition to massive flocks of livestock has left large parts of the area eroded. After agrarian reforms in the 1960s much of this land-use continued. The authors cite one individual who noted that the residents assumed that they should simply continue the land use patterns practiced for centuries by the hacienda. As a result, they continued increased grazing and controlled burnings of the páramo. Eventually, outside environmental NGOs collaborated with communities around the páramo to institute communal governing structures and limit the agricultural frontier spread and burnings. These accounts highlight that one effect of centuries of hacienda control is the potential for those same unsustainable land-use practices to continue. This is counter to popular expectations that local Indigenous communities always know and practice sustainable agro-pastoralism. In this case, centuries of work regimens had engrained other labor practices and a local NGO was a unique factor in rallying the communities behind new ways of maintaining their lands.
Following these analyses and having studied the long expansion of livestock pasturing, textile production, and agricultural production at Hacienda Guachalá, I was particularly interested in understanding the movement toward agroecology in the region. For example, were there historical referents for the development of agroecology? What did it mean for small family farmers practicing it, and how was it taught? To explore these questions, I participated in an agroecology course developed by Fundación Kawsay, formed in 2001, and associated with the Confederación del Pueblo Kayambi. This “fieldwork” was conducted virtually in 2020 as the COVID-19 pandemic forced new forms of community (and anthropological) adaptation. As a result, the context of the pandemic produced a unique moment in which to ask these questions. From a political ecology perspective, it was also instructive to see the ways in which the organization was responding to the new non-human, viral disruptions.

By the start of the course, the flower industry was largely sinking. Contacts in Cangahua described massive amounts of flowers being thrown out to compost as transportation disruptions brought global trade to a halt. Demand for flowers was at historic lows, endangering the employment of thousands of workers. In light of the public health situation, the foundation altered the structure of the course to include additional lessons on ancestral medicines that could be used to prevent COVID-19.

The course began with a lesson on “identity and community organization.” The lecture framed the topic as identity connected to agroecological production in four dimensions (Pilataxi 2020). First, identity was tied to a territory, or to the land in which production is carried out. The territorial dimension included both the need to control autonomous cultural practices as well as the ability to respond to environmental dangers that could affect residents down the line. The second dimension corresponds with the “social relations that are woven through the agricultural
work that they do.” These are relations founded upon notions of reciprocity, minga and collective responsibility, and ethical relations with Mother Earth. The third dimension extends those relations to the physical seeds that they use to grow crops. The conservation of Andean seeds here is stressed for the purpose of maintaining genetic biodiversity, as well as understanding the seeds as part of their identity. Finally, the fourth dimension considers the markets and exchanges of their products in creating more just markets and sustainable communities.

Another two weeks were spent teaching ancestral medicinal knowledge and applying it toward the prevention of COVID-19. The lessons included medical information on the virus in addition to recipes to produce disinfectant gel at home. Interestingly, in addition to ethyl alcohol and glycerin, two other main ingredients were eucalyptus leaves and penco (agave). These ingredients were part of several other recipes for wellness taught in the course. The use of eucalyptus in the ancestral recipes was an important reminder of the adaptive process of incorporating new products into established practices and knowledge. Similar to the addition of barley into Indigenous foodways practices and cuisines, eucalyptus has similarly been incorporated to take advantage of the benefits that it offers, despite other environmental consequences of the trees.

The rest of the 16-week course covered a variety of topics that were formulated using a mixture of agronomic sciences and ancestral knowledge. Agroecology was explained by developing a definition of the chacra. In the course, the chacra was defined as “family agricultural plots that foster food sovereignty, the conservation of biodiversity, and the materialization of Indigenous ancestral knowledges unique to the Pueblo Kayambi” (Parreño 2020). The plots should grow a mixture of crops and utilize only natural forms of organic additives like animal manure and compost. Instructions for making home-made compost,
fertilizers, natural pest control, and properly feeding animals were covered in subsequent weeks. In addition, the course covered the conservation and communal control of páramos and the importance of caring for the páramo as a source of water and life itself for their communities and humanity as a whole. Finally, the course concluded with a presentation on gender-based violence and violence against women. It described the concept of gender as a cultural construct, the various forms that violence could take, and strategies for identifying and eliminating violence against women in our society.

Besides learning a variety of agroecological techniques, from my own perspective this course provided a lens on some of the efforts of community organizations to carry forward historical lessons and experiences to contemporary realities. These are conscious efforts to generate food sovereignty and provide alternative livelihoods to the industrial flower model. These efforts are collaborative endeavors, products of relationships with an international NGO, community historians, and local agronomists with expertise in agroecological production. Embedded within post-hacienda landscapes and the challenge of a new agrarian regime of flower monocropping, these efforts are powerful testimonies to a growing movement in Cayambe. The growth of agroecological fairs (farmer’s markets) in the region has been further spurred by politicians like Guillermo Churuchumbi, the current, and first Indigenous, mayor of the canton of Cayambe. Politically, the movement is also situated within the pervasive local discourse of working toward sumak kawsay (“the good life”) (Quick and Spartz 2018; Rousseau 2017).

The particularities of this story to the peoples of Cangahua and Cayambe are clear. Agrarian labor histories shape the lives of contemporary communities across the Andes in diverse ways. And yet, the more general debate for how to adequately ensure the wellbeing of all peoples around the world in an age of increasing agribusiness is now a world-wide engagement.
The Indigenous leader and former huasipunguero from Cayambe, Dolores Cacuango, famously declared her vision for such a world-wide movement: “Somos como la paja, más que el viento nos mueve de un lado para otro no podrá arrancarnos. Somos como la paja del páramo que se arranca y vuelve a crecer y de paja del páramo cubriremos el mundo” (“We are like the paramo grasses, for as much as the winds move us from one side to the other it will not uproot us. We are like the paramo grasses that shoot up and grow again and as these paramo grasses we will cover the world”) (Rodas 2007: 73). Cacuango’s declaration in her organizing efforts of the first half of the twentieth century reveal a deep sense of ethnic resilience, as resilient as the páramo grasslands. They also showed her commitment to carrying forward the historical roots of her struggle to forge a global movement for cultural autonomy and equitable agrarian futures.

New ecologies of power have arisen in the region over the last 40 years. The use of land for export flower monoculture has introduced familiar forms of inequalities, land dispossession, and altered relations between humans and non-human nature. Today the remains of colonial and Republican period hacienda homes still stand amongst the endless rows of flower greenhouses. In some cases, families own these historic properties alongside new flower plantations where the connections of power across centuries is all the more palpable. The rose petals floating peacefully in the fountain in front of a former Jesuit estate house near Cayambe in Figure 8.7 illustrate this deep historical connection. The juxtaposition of the rose petals and the historic estate in the photo highlights a global struggle that we face in the anthropocene between distinct models of economic futures and the profoundly historical roots of changing bio-political configurations.
The political ecology framework developed in this dissertation has attempted to trace these historical roots through time and to contextualize our anthropocenic futures. Synthesizing perspectives from archaeological excavations, archival records, oral histories, and ethnographic participation, the aim was to contribute to a larger literature attending to the enduring consequences of land tenure systems that accompanied colonial expansion in Ecuador, and across the world. Ecological transformations are central to those colonial projects and have deep historical roots from which uneven and messy futures are being imagined across the globe. These investigations expose the processes through which forms of exploitation, land dispossession, and resource precarities were instituted. Tracing these histories forward in time reveals these connections and their enduring forms of displacement. Yet amidst histories of violence are also compelling stories of resilience and those legacies are part of a global movement to rethink our collective futures.

Figure 8.7 Rose petals float in the fountain in front of an estate house in Cayambe on what was previously a major Jesuit hacienda. (Photo by the author.)
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# Table A.1. OP19 Total Artifact Table:

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<td>Coarse Earthenwares - Plain</td>
<td>643.0</td>
<td>19.0%</td>
<td>10527.0</td>
<td>12.1%</td>
</tr>
<tr>
<td>Coarse Earthenwares - Slip</td>
<td>98.0</td>
<td>2.9%</td>
<td>1101.5</td>
<td>1.3%</td>
</tr>
<tr>
<td>Refined Earthenwares</td>
<td>36.0</td>
<td>1.1%</td>
<td>995.0</td>
<td>1.1%</td>
</tr>
<tr>
<td>Porcelain</td>
<td>1.0</td>
<td>0.0%</td>
<td>2.0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Building Materials - Roof</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tiles/Bricks</td>
<td>1244.0</td>
<td>36.7%</td>
<td>59052.0</td>
<td>67.9%</td>
</tr>
<tr>
<td>Faunal (NISP)</td>
<td>322.0</td>
<td>9.5%</td>
<td>4439.8</td>
<td>5.1%</td>
</tr>
<tr>
<td>Lithics</td>
<td>212.0</td>
<td>6.3%</td>
<td>6878.0</td>
<td>7.9%</td>
</tr>
<tr>
<td>Glass</td>
<td>185.0</td>
<td>5.5%</td>
<td>515.0</td>
<td>0.6%</td>
</tr>
<tr>
<td>Metal</td>
<td>117.0</td>
<td>3.5%</td>
<td>1554.0</td>
<td>1.8%</td>
</tr>
<tr>
<td>Personal Items</td>
<td>2.0</td>
<td>0.1%</td>
<td>3.0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Totals:</td>
<td>3388.0</td>
<td>100.0%</td>
<td>87031.3</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Table A.3. OP78 Total Artifact Table:

<table>
<thead>
<tr>
<th>Artifact Type</th>
<th>Sum of Count</th>
<th>% of Count</th>
<th>Sum of Weight (g)</th>
<th>% of Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coarse Earthenwares - Glazed</td>
<td>88</td>
<td>26.6%</td>
<td>884</td>
<td>8.0%</td>
</tr>
<tr>
<td>Coarse Earthenwares - Plain</td>
<td>120</td>
<td>36.3%</td>
<td>5537</td>
<td>50.3%</td>
</tr>
<tr>
<td>Coarse Earthenwares - Slip</td>
<td>22</td>
<td>6.6%</td>
<td>189</td>
<td>1.7%</td>
</tr>
<tr>
<td>Refined Earthenwares</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Roof Tiles</td>
<td>84</td>
<td>25.4%</td>
<td>4355</td>
<td>39.6%</td>
</tr>
<tr>
<td>Faunal (NISP)</td>
<td>10</td>
<td>3.0%</td>
<td>23</td>
<td>0.2%</td>
</tr>
<tr>
<td>Lithics</td>
<td>3</td>
<td>0.9%</td>
<td>5</td>
<td>0.0%</td>
</tr>
<tr>
<td>Glass</td>
<td>2</td>
<td>0.6%</td>
<td>12</td>
<td>0.1%</td>
</tr>
<tr>
<td>Metal</td>
<td>1</td>
<td>0.3%</td>
<td>1</td>
<td>0.0%</td>
</tr>
<tr>
<td>Personal Items</td>
<td>1</td>
<td>0.3%</td>
<td>1</td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>Totals:</strong></td>
<td><strong>331</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>11007</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>
APPENDIX B: CERAMIC RIM PROFILES

The following pages include rim profile drawings from Operations 19, 21 and 78 corresponding to the domestic area on Molino Loma, the Casa de Obraje, and Santa Marianita de Pingulmí house lot. In general, the vessel forms were divided into three main classifications: restricted, unrestricted, and tiestos.
Restricted Everted

Operations 19 and 21 Hacienda Guachalá

50+ cm

21C17.755.4

40 cm

21C17.689.42
Restricted Straight

48 cm

21C17.689.43

50+ cm

21C17.689.41

50 cm

21 C17.755.5

0 3 6 cm
Restricted Everted

20 cm

27C05.19.1

20 cm

21C17.687.20

20 cm

21C17.680.19
Restricted Everted

15 cm

27C05.18.1

18 cm

21C17.689.31

20 cm

21C17.660.22
Restricted Everted

23 cm
21C17.659.17

25 cm
21C17.660.17

35 cm
21C17.672.18
Unrestricted (Bowl)
Unrestricted

35 cm

21C17.662.25

Unrestricted (Plate)

35 cm

21C17.672.17

30 cm

21C17.667.12

Unrestricted (Deep Plate)

25 cm

21C17.662.28

0  2  4 cm
Operation 78 Santa Marianita de Pingulmí

Unrestricted (Bowl)

14 cm

78C18.41.1

Unrestricted

24 cm

78C18.6.5
Restricted Inverted

15 cm

78C18.40.3
Restricted Everted (Jar)

14 cm

78C18.40.10

0 1 2 cm