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Ethnicity and Ceramics in Rivas, Nicaragua, AD 800–1550

by

Larry Leonard Steinbrenner

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

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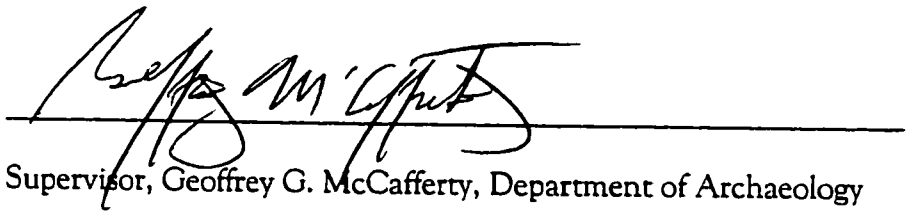
The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Ethnicity and Ceramics in Rivas, Nicaragua, AD 800–1550" submitted by Larry Leonard Steinbrenner in partial fulfillment of the requirements for the degree of Master of Arts.



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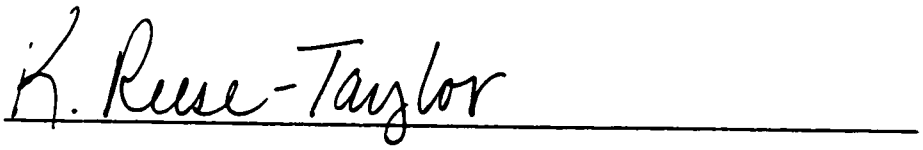

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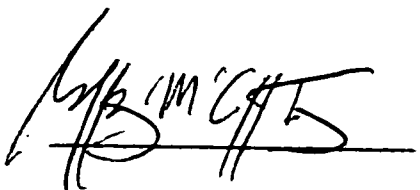

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ABSTRACT

Patterns of variation in ceramic form may reflect habitus-based preferences for such things as vessel shapes, orifice sizes and wall thicknesses, and may therefore provide a useful means of identifying groups with different habitus, and by extension, different ethnic groups. Although habitus should not be directly equated with ethnicity, which is situational and only becomes salient under specific historical circumstances, habitus may be useful in identifying ethnohistorically documented ethnic groups because it can potentially provide the commonality that typically is the nucleus of an ethnic group. Using ceramic material from the Santa Isabel site in Rivas, Nicaragua, this thesis argues that patterns of variation in form in different ceramic types may reflect the presence of at least two groups with different habitus, and discusses the potential relationships of these groups to the Chorotega and the Nicarao, two historically documented ethnic groups of Mexican origin.

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Two graduate students currently doing dissertation work on Nicaraguan topics were extremely important influences in the writing of this thesis. During my first visit to Nicaragua, Karen Niemel of SUNY-Buffalo acted as our expert on local archaeology and taught me the standard ceramic typology. Karen has always been willing to share data and answer my e-mailed questions on Rivas archaeology in great detail; I doubt that this thesis could have been completed without her input. During my second visit to Nicaragua, Manuel Román Lacayo of the University of Pittsburgh not only introduced me to several important archaeological sites but also acted as a guide to the country itself. Manuel and his father Eduardo Román Tiffer were also my hosts for much of my second visit to Nicaragua, and I owe them a tremendous debt for their gracious hospitality.

Two University of Calgary graduate students also played pivotal roles in this thesis. Deepika Fernandez, a member of the first year team, provided the preliminary faunal analysis discussed in chapter 6, and Rejane Boudreau Rojas, while not working on the Rivas project, stepped in to save the day during an extremely hectic final week in Nicaragua in 2001 when a series of minor disasters threatened to scuttle my own research.

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Chapter 1
INTRODUCTION

This thesis compares specimens of ceramic material recovered during preliminary excavations at the Santa Isabel site (N-RI-44-00) in Rivas, Nicaragua, in order to determine if patterns of variation in ceramic form can be linked to the Chorotega and the Nicarao, two historically documented ethnic groups of Mexican origin (Figure 1.1). This approach represents a departure from traditional archaeological approaches which have generally focussed on using decorative variation rather than variation in form to identify Nicaraguan ethnic groups (e.g., Coe 1962; Day 1984a; Healy 1980; Lothrop 1926). In particular, this thesis will consider the way in which apparent preferences for particular vessel shapes, orifice sizes and wall thicknesses may reveal the presence of different potting traditions which might in turn be connected to these ethnic groups.

Spanish conquistadors and other ethnohistoric sources relate that the Chorotega, speakers of an Oto-manguean language, and the Nicarao, a Nahua group like Central Mexico's Aztecs, both migrated to the Greater Nicoya area–a region roughly encompassing Nicaragua's Pacific Coast and Costa Rica's Nicoya peninsula and Guanacaste province (Lange 1994:1)–during Mesoamerica's Postclassic period (Abel-Vidor 1980a). While the various accounts of these migrations are often vague and even contradictory with regard to specific details–disagreeing on such key points as the exact Mexican origins of the groups, the routes and nature of the migrations, and even the time frame (Fowler 1989)–the consensus of modern scholars is that the Chorotega arrived first during Greater Nicoya's Sapóa Period (AD 800–1350) and that the Nicarao arrived several hundred years later during the Ometepe Period (AD 1350–Spanish Conquest) (Lange et al.1992; Salgado 1996). At the time of the Conquest the Chorotega appear to have controlled most of the Pacific Coast of Nicaragua as well as Costa Rica's Nicoya Peninsula and Guanacaste Province, while the Nicarao population was primarily concentrated in the Isthmus of Rivas, with smaller territories in other parts of the region (Figure 1.2).

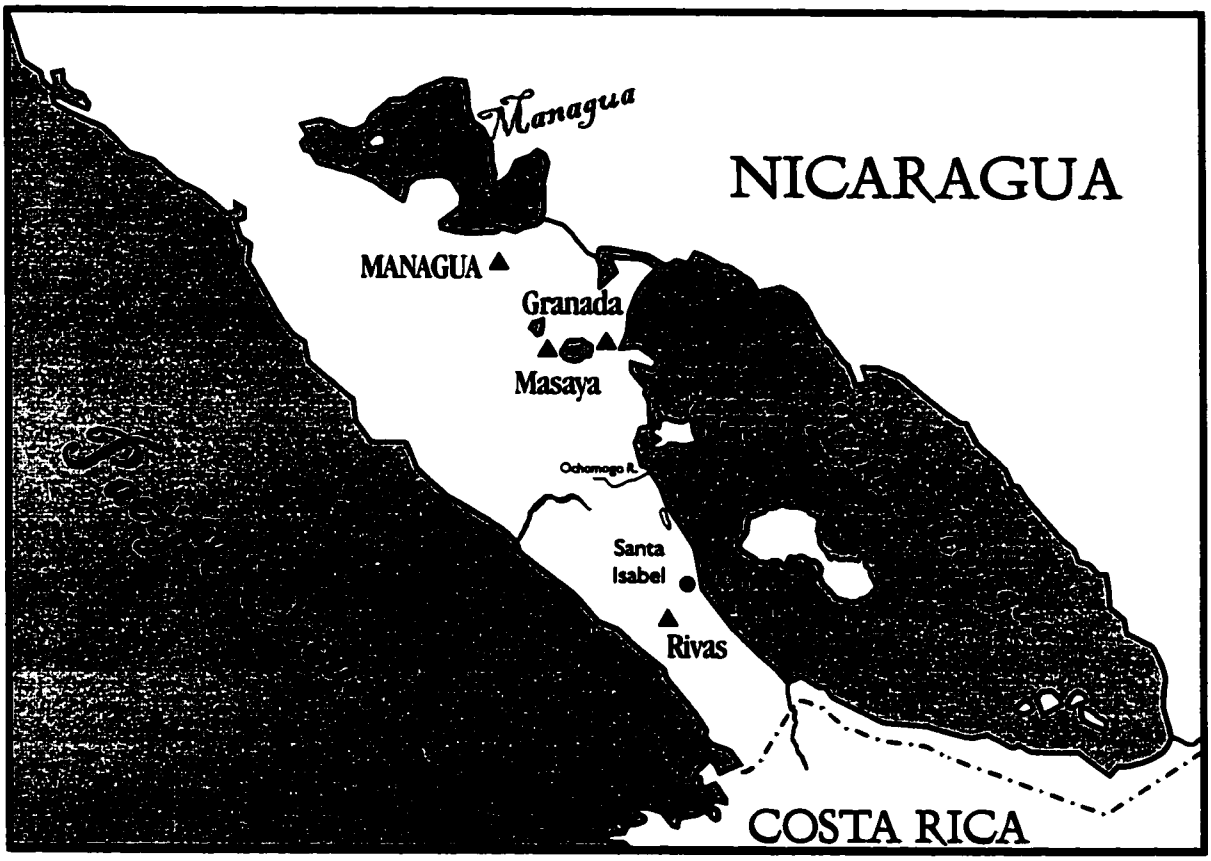

Figure 1.1: Pacific Nicaragua and the Isthmus of Rivas

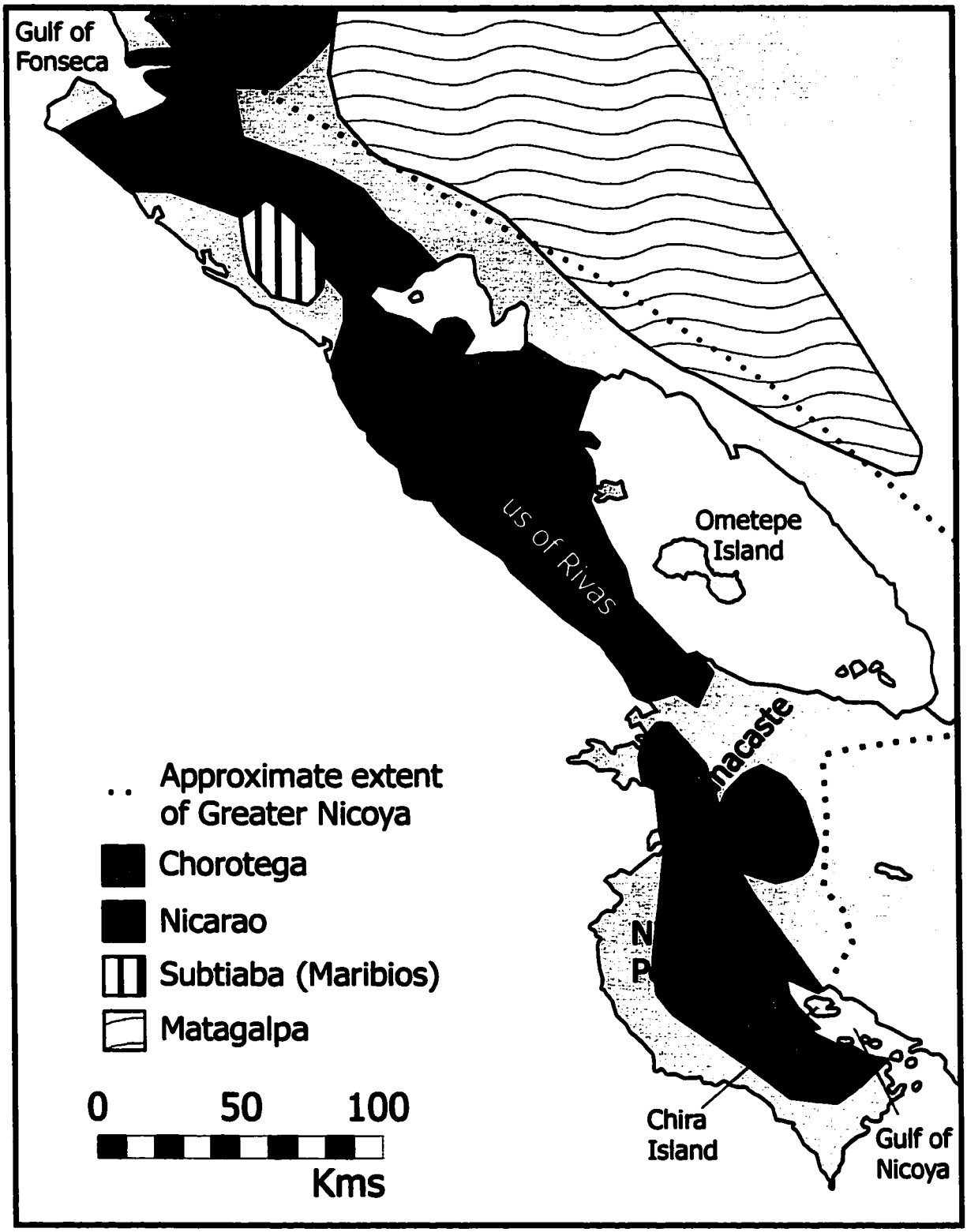

Figure 1.2: Known ethnic groups in Greater Nicoya, circa 1522 (Salgado 1996)

While ethnohistoric sources provide more information about the Nicarao than they do about the Chorotega, they clearly portray these groups as culturally distinct rivals characterised by different languages, customs, religions and social and political organisations (Chapman 1974; Lothrop 1926). However, to date these differences have failed to translate into clear differences in material culture that can be used to distinguish between these groups archaeologically. The problem stems at least in part from the facts that Nicarao communities seem to have always been founded on sites previously occupied by the Chorotega, and that the assemblages recovered from these sites, which are constituted primarily of ceramic material, seem very similar to those recovered from sites in areas known to have been dominated by the Chorotega. Attempts to differentiate between the two groups have therefore typically concentrated on ceramics, based on the assumption that early-appearing ceramic types can be used as "ethnic markers" for the Chorotega and that later-appearing types can be similarly used as markers for the Nicarao, despite an almost complete lack of information regarding ceramic production or use by either of these groups.

While this thesis also takes an interest in the possibility of using aspects of ceramic variation as ethnic markers, the ability of archaeology to identify past ethnicity on the basis of material culture alone is by no means taken as a given. As we shall see in later chapters, *ethnicity* and *ethnic group* are concepts that have been variously understood by different researchers with different interests. This thesis favours the definitions of these terms provided by Jones:

> *Ethnic groups are culturally ascribed identity groups, which are based on the expression of a real or assumed shared culture and common descent* (usually through the objectification of cultural, linguistic, religious, historical and/or physical characteristics). As a *process* ethnicity involves a consciousness of difference, which, to varying degrees, entails the reproduction and transformation of basic classificatory distinctions between groups of people who perceive themselves to be in some respect culturally distinct. (Jones 1997:84; her italics)

The approach to connecting material culture and ethnicity adopted here involves the application of a theory of practice, which assumes that habitual dispositions, or *habitus*, shape social practice and guide–but do not dictate–the choices made by individual agents at every

stage in the production of artifacts, both consciously as well as unconsciously (Bentley 1987; Bourdieu 1977). These dispositions often provide the resources that are used to construct ethnic identities inasmuch as they can provide the "something in common" that seems to be at the heart of every ethnic group (Bentley 1987:27), but they are not directly identifiable with ethnicity itself: to assume that they are is to assume that ethnicity is always salient everywhere (Jones 1997:93). Rather, ethnicity emerges when interaction with other groups leads a group to *differentiate* itself from those others, and this process of differentiation, depending upon the particular context of interaction in which it occurs, can dramatically transform the behaviours produced by habitus (Jones 1997:94). Yet while we should therefore be cautious about inferring distinct *ethnic* groups simply on the basis of archaeological evidence of patterns suggesting groups with distinct habitus, it may be possible to connect ethnic groups with habitus in cases where there is also documentary evidence of ethnic groups (Jones 1997:119). Ancient Nicaragua potentially provides such a case.

Because habitus influences every step in the process of producing material culture, it can be seen as the source of the variation in material culture that is normally thought of as *style* (Gosselain 1992:560; Stark 1998:6). It follows that the work of potters with a common habitus–that is, the work of potters who have been raised and trained within a common social environment that conditions both conscious and unconscious actions–will tend to demonstrate similarities in style (notwithstanding that the freedom of individuals to make different choices at various stages in the production process will allow for the expression of personal style within the larger tradition [Bentley 1987:29]). Such similarities can be expected to be reflected in all aspects of material culture variation, including those that have been selected as the focus of this particular study. More specifically, we can expect the effects of habitus to be expressed in formal variation–in such things as preferences for specific vessel forms or ideas about the correct orifice size or wall thickness for a given type of pot–as well as in decorative variation. For this reason, it is to be expected that the pottery produced by potters with a common habitus will be distinct in many ways from that produced by other potters with a different habitus–in form as well as decoration, since while function obviously places some constraints upon vessel shape (e.g., Orton et al. 1993:220-22; Rice 1987:227;

Smith 1985:273, 281) that will influence the work of all habitus groups, there is no one "right" way to make a pot.

Ceramics are therefore potentially very good markers of groups with different habitus, and by extension are also potentially good markers of ethnic groups in situations where there is evidence that suggests that ethnicity was salient, as there is in the case of ancient Nicaragua. However, previous attempts to link Nicaraguan ceramics to Mexican groups (e.g., Day 1984a; Lothrop 1926) have focussed almost exclusively on decorative variation rather than variations in form. Types that are typically "Mesoamerican" or "Mexican" in appearance are assumed to be markers of Mexican migrant groups. This focus on decoration is reflected in the standard ceramic typology presently used by archaeologists working in the Greater Nicoya area, which is based primarily on decoration and does not include formal criteria in its definition of types (Bonilla L. et al. 1990; Healy 1980). Implicit in approaches that connect types based on decorative variation to ethnicity seems to be the assumption that decorative variation invariably reflects a conscious effort to assert cultural identity (e.g., Wobst 1977), while formal variation only reflects functional constraints. This assumption has been challenged by various critics, who have observed that ceramic decoration may serve a variety of purposes having little to do with ethnic identity (e.g., Cordell and Yannie 1991:98; David and Kramer 2001:180-82; Emberling 1997:311; Gosselain 1998:82; Jones 1997:111; Sterner 1989:458).

This is not to deny that decoration *may* be used to assert ethnic identities. However, while it may seem reasonable to associate ceramic types that look "Mexican" with known Mexican groups, in Nicaragua this association is complicated by the fact that several late-appearing types which are usually associated with the Nicarao are very similar in form to earlier Nicaraguan ceramics types, which we might not expect to be the case if they were the products of a newly imported potting tradition. This suggests that the "Nicarao" markers may therefore have been produced by the same potting tradition or traditions that supplied the Chorotega with ceramics, a possibility that in turn suggests some interesting questions pertinent to the study of ancient Nicaraguan ethnicity. For example, if the Nicarao relied on other groups for their pottery, what might this imply about the size of their migrant

population and their relations with other ethnic groups already in Nicaragua when they arrived? Conversely, if these "markers" were made by Chorotegan artisans, could they instead represent a local response to the Nicarao incursion–perhaps an attempt by the Chorotega to reaffirm their own Mexican roots in the face of a threat posed by newcomers who could claim similar origins? Obviously, before we can pursue such questions we need to first determine if the perceived similarities between "Nicarao" types and earlier types are in fact the products of a common habitus, and this possibility cannot be explored by looking solely at decoration. It requires an examination of variation in form.

While I do not expect to provide an answer to the riddle of ancient Nicaraguan ethnicity in the context of this thesis, the identification of different patterns of habitus underlying the ceramic material recovered from Santa Isabel would seem to represent a good start. Towards this end, in the following chapter (chapter 2) I begin with a summary of the ethnohistorical sources that have given us reason to believe that ethnicity was salient in pre-Columbian Nicaragua (since, as we have already noted, we should be cautious about inferring the presence of ethnic groups in the past based on archaeological evidence alone), followed by a review of previous archaeological work in Nicaragua and Greater Nicoya relevant to the current problem. Chapters 3 through 5 provide the theoretical context for this thesis: chapter 3 will discuss prominent theories about the nature of ethnicity developed by researchers in anthropology, sociology and other social sciences as a preliminary step to chapter 4's discussion of archaeological approaches to identifying ethnicity through material culture, while chapter 5 will build on the previous two chapters in outlining the practice theory approach and discussing its implications for identifying ethnicity in the archaeological record of Nicaragua. Chapter 6 will summarise the Santa Isabel project to provide a context for the analysis of the ceramic database in chapter 7. Chapter 8, the final chapter, will discuss the implications of this study and suggest some possibilities for future research.

Chapter 2
ETHNOHISTORY AND PREVIOUS ARCHAEOLOGICAL RESEARCH IN GREATER NICOYA

ETHNOHISTORICAL SOURCES

The Nicarao, Chorotega and other indigenous peoples living along the Pacific coast of Nicaragua and Costa Rica entered the pages of Western history in 1522, following an exploratory expedition from Panama led by the Spanish adventurer Gil González Dávila. González made landfall in Costa Rica's Gulf of Nicoya, travelled up the Tempisque River valley, passed through Guanacaste, and entered into Pacific Nicaragua via the Isthmus of Rivas. Andrés de Cereceda, the expedition's accountant, documented the trip in a business-like manner, listing the various settlements, caciques and riches encountered by the Spanish, and González provided his own account in a 1524 letter to King Charles V of Spain, in which he noted great differences between the settlements in Costa Rica and those in the region around Nicaragua's two great inland lakes, Lake Nicaragua (Cocibolca) and Lake Managua (Xolotlan) (Abel-Vidor 1981:85). The area was quickly brought under Spanish control, and its relative isolation facilitated a level of exploitation that was extreme even by Conquest standards: within less than a generation, the countryside had been thoroughly sacked, and most of the indigenous population that survived the wars against the Spanish and their exotic diseases had been illegally enslaved and transported to other parts of the Americas (especially Peru) (Abel-Vidor 1981:90; Newson 1987:337; Salgado 1996:30). The population was reduced by as much as 95 per cent, from around a half million at the time of contact to between 30 and 40 thousand according to estimates made less than 25 years later (Abel-Vidor 1981:90; Newson 1987:336).

The horrendous loss in population and accompanying social disruption–so extensive that neither the Chorotega nor the Nicarao ultimately survived as ethnic entities into modern times–was accompanied by an equally great loss of native lore and tradition, which was very poorly preserved compared to the pre-contact knowledge preserved by peoples in areas like

Mexico or Guatemala (Lange et al. 1992:15). No native-produced documents have survived, although accounts allege that the Nicarao, at very least, recorded genealogical and map information in deerskin codices that must have been very similar to those known from Mesoamerica (Chapman 1974:65). The closest thing to such a record are reported illustrations of the misnamed "Xirón Codex", a colonial-era sketch of part of a wooden "calendar" that "allegedly had glyphs for ruler's names, tribute commodities and aboriginal conquests" (Fowler 1989:15). Neither are there detailed accounts of indigenous practices recorded in native languages by Spanish clergy or by European-trained indigenes, as in Mexico: there was no Sahagún for Nicaragua. Nevertheless, ancient Nicaraguan lifeways were not left completely undocumented, and if the ethnohistorical accounts that tell of them are less complete than those from other parts of the Americas, there is still much that can be gleaned from them.

Ethnohistorical Sources and Syntheses

While most of the early literature on Greater Nicoya has not been published in forms that make it readily available to scholars (modern reprints are rare and poorly distributed; cf. Abel-Vidor 1981), excellent summaries of sixteenth and seventeenth century materials relevant to archaeology are provided by Lothrop (1926), Stone (1966) and Chapman (1974)[1]. Squier (1852, 1853) and Lothrop (1926) provide compilations of most of the records pertinent to the Conquest, and Joyce (1971; originally published in 1916) is also useful, though it fails to provide citations for most of its source material. While his area of interest is more specifically El Salvador than Nicaragua or Costa Rica, Fowler's mammoth dissertation (1981) and subsequent book (1989) on the Pipil-Nicarao represent particularly good resources for specific information about the sources themselves and provide the most essential studies of the migrations of Mexican groups into Central America. Various articles by Abel-Vidor (1980a, 1981, 1986) provide useful guides to the ethnohistoric literature: her

[1]Ferrero (1977) and Ibarra's master's thesis (1995) also provide useful summaries (Abel-Vidor (1981:88); both of these were published in Costa Rica and were not available for this study.

1980a bibliographical essay in particular is invaluable as a starting point for further investigation into these sources. Most of the following discussion derives from these summaries.

The earliest documents providing "ethnographic" information about the indigenous peoples of Greater Nicoya include chronicles, letters and legal documents written by eyewitnesses like González and Cereceda that often draw heavily on second and third-hand sources. The most important chronicler for lower Central America is acknowledged to be Gonzalo Fernández de Oviedo y Valdés, an inspector of mines in Panama who visited Greater Nicoya between 1527 and 1529 and included an account as part of his *Historia general y natural de las Indias, islas y tierra-firme del mar oceáno* (1851-55), published in 19 volumes in 1535. Other contemporary or near-contemporary chroniclers of Oviedo include Pascula de Andagoya, Girolamo Benzoni, Peter Martyr de Anglería, Fray Bartolomé de Las Casas, Fray Toribio de Motolinía de Benevente and Juan López de Velasco (Abel-Vidor 1981:88). An important secondary source of information on the Nicarao in particular was Francisco López de Gómara, personal secretary and chaplain to Cortés (Fowler 1989:22). Fray Antonio de Ciudad Real, Juan de Torquemada and Antonio de Herrera y Tordesillas provide additional information from the late 1500s to the early 1600s, as does Thomas Gage, an English missionary in Mexico and Central America from 1625 to 1637 (Abel-Vidor 1981:88). These relatively early sources can be supplemented somewhat with ethnographic information provided by even later accounts which suggests a certain degree of cultural continuity despite the disastrous effects of the Conquest, such as Squier's *Nicaragua: Its People, Scenery, Monuments and the Proposed Interoceanic Canal* (1852, 1853) and Belt's *The Naturalist in Nicaragua* (1874), though of course it cannot be assumed that all of the cultural practices observed in the nineteenth century necessarily possessed pre-Columbian antecedents.

Ethnic Groups and Migration

Ethnohistoric sources paint Greater Nicoya as a bewildering mosaic of more than two dozen distinct groups that occupied contiguous territories, spoke as many as seven different languages, possessed various types of political organisation and alternately warred against and

traded with each other (Abel-Vidor 1980a; Fowler 1981; Lange et al. 1992:13; Lothrop 1926). Groups are typically defined by their languages, and specific groups are often difficult to distinguish because authors like Oviedo and Ciudad Real do not use the same terms to describe linguistic groups, are not always consistent in their *own* usage of terms, and often discuss cultural practices generically without specifying the groups to which they belong (Lothrop 1926:45). For example, Oviedo uses the terms "Nicaragua" and "Chorotega" to name the languages modern scholars would call Nahuat and Chorotega, while Ciudad Real refers to the same languages as "corrupt Mexican" and "Mangue"; Oviedo also refers to Chorotega and Orosí as distinct languages in one instance but then uses these terms to describe two groups possessing the same language in another (Abel-Vidor 1981:88). This rather uncritical equation of cultural and linguistic groups in the ethnohistorical sources presents a potential problem for scholars studying societies in Lower Central America (Abel-Vidor 1980a:161), particularly because it perpetuates the view that different groups sharing a common tongue are necessarily culturally homogenous. This is almost certainly the way that the Spanish themselves saw these groups, since they typically generalise about "Nicarao" and "Chorotegan" practices even though each of these terms subsumes distinct groups that were often separated by considerable tracts of territory populated by groups speaking other languages (see Lothrop 1926:8-9 for a summary list), and which might therefore have evolved in dramatically different directions. Yet while archaeologists should be wary about unquestioningly correlating language with ethnicity, and must also be willing to consider the possibility that groups speaking a common tongue may have formed distinct ethnic units–or even the possibility that some ethnic units may have comprised members speaking more than one language–the documentary accounts of competition between groups that spoke different languages cannot be easily dismissed. Until more information is available, therefore, we might cautiously work from the assumption that, in this particular case, ethnic divisions probably fell along linguistic lines just as the ethnohistoric sources say that they did.

Despite the inconsistencies between the various ethnohistoric accounts, they seem to be in general agreement that there were three large ethnic groups with Mesoamerican origins in the Greater Nicoya area at the time of European contact:

1) the *Chorotega* or Mangue, speakers of an Oto-manguean language or languages comprising groups located in central Pacific Nicaragua (the Mangue proper), northwestern Costa Rica (the Orotiña, the Nicoya and the Orosí), and southern Honduras (the Choluteca);
2) the *Nicarao*, Nahuat-speakers whose greatest territories were in the Isthmus of Rivas in southern Nicaragua (the Nicarao proper), but who were also settled around the Gulf of Fonseca in the north (the Nahuatlatos) and in central Guanacaste (the Bagaces), as well as in other scattered communities as far south as Panama;
3) the *Maribios* or Subtiaba, a much smaller group focussed in the modern Department of León, north of Lake Managua. (Healy 1980:20-21; Lothrop 1926; Salgado 1996:21)

Little is known about the Maribios, another Oto-manguean group with apparent ties to the Tlapanec region of Oaxaca (Lothrop 1926:11; Salgado 1996:28), and they are not discussed in this study. A summary of ethnohistoric accounts of Chorotega and Nicarao culture can be found in chapter 5.

The ethnohistoric sources provide a great deal of information about the arrival of these Mexican groups into Greater Nicoya. The various accounts–especially those by Motolinía, Torquemada and Fray Francisco de Bobadilla (cited by Oviedo)–are often confusing and occasionally contradictory, providing dates which range (based on comparisons by later scholars with linguistic and archaeological evidence) from about the fifth century to less than 80 years before the arrival of the Spanish (Fowler 1989:32). Bobadilla's account, "the only material with a clear source that we have today" (Salgado 1996:23), is based on oral traditions gathered from Nicarao nobles, priests and elders, who related that they had migrated from Ticomega and Maguatega, which were connected by Lehmann (1920) to towns named "Ticoman/Ticomantlan" and "Miahuatlan" near Cholula in Central Mexico (Fowler 1989:32; Healy 1980:22)[2]. Unfortunately, Bobadilla's sources could no longer recall when this migration had occurred. Torquemada, who provides the "most informative historical account" of the migrations (Fowler 1989:34), alternatively suggests Pacific Coast

[2]Geoffrey McCafferty (personal communication 2002) is unaware of any such towns near Cholula.

origins for the Nicarao. Torquemada relates that the Nicarao and Chorotega anciently lived in Soconusco together before fleeing secretly from oppressive "Olmeca" masters (possibly the Olmeca-Xicallanca) and moving south to Choluteca in Honduras (Chapman 1974:94). The Chorotega eventually left this area to follow a prophecy that led them to Greater Nicoya, and when the Nicarao (following a prophecy of their own) arrived later, they displaced the Chorotega from the Rivas area (Chapman 1974:94). Torquemada's sources are unknown, though they probably derive from Motolinía (Abel-Vidor 1980a:162; Fowler 1989:24). Another version of the story by Motolinía tells of a migration by sea during a time of great drought that took place as late as AD 1441, but this account is usually considered to relate to the Maribios rather than the Chorotega and/or the Nicarao (Fowler 1989:33; Lothrop 1926:3).

Studies that have attempted to connect the migrations to the fall of Teotihuacan, the expansion of the Toltec empire and other events in Central Mexico during the Mesoamerican Postclassic (e.g., Chapman 1974:75-76; Fowler 1989:38-49; Healy 1980:22; Hoopes and McCafferty 1989), have not been conclusive in "solving" the migration problem. Neither have linguistic studies (summarised by Salgado 1996:26-27) that suggest that the Nicarao did not split from the Nahua Pipil of El Salvador during the migrations, as Fowler (1981, 1989) has argued, but are rather a distinct group that migrated much later and therefore require a unique origin tale. The same studies also suggest that the Chorotega *also* originated in Cholula, based in part on the assumption that "Chorotega" is bad Nahuat for "people from Cholula" (Salgado 1996:26). This argument is supported by the presence of a "Choluteca" group right across the border in Honduras, though it is undermined by the facts that "Chorotega" was the name of the first cacique encountered by the Spanish in Costa Rica, and the Spanish typically named groups after their caciques (Lothrop 1926:21). With this kind of disagreement amongst scholars, archaeology would seem to have a lot of potential to help sort out the truth of the migrations from the myths.

Nicaragua was by no means "empty" when the Mexican groups arrived–there is evidence of occupation going as far back as 2000 BC (Haberland 1986; Niemel 2000; Salgado 1996)–and there are different views on who these groups might have encountered and/or

displaced upon their arrival. The most widely accepted theory is that groups living on the periphery of Greater Nicoya at the time of the Conquest were the autochthonous inhabitants of the area. Speakers of Matagalpa (the likely "Chontales" identified by Oviedo and other sixteenth century chroniclers) are perhaps the best candidates: at contact the Matagalpa lived in chiefdoms in the highlands of central Nicaragua adjacent to the Pacific coast and fought and traded with the Nicarao (Salgado 1996:28-30; Van Broekhoven 2002). They may also have been the source of gold for the Pacific groups: Ibarra suggests that the Nicarao and Chorotega, following the Mesoamerica tradition of recruiting craftspeople from other ethnic groups, may have welcomed Matagalpan goldsmiths into their communities (1994:242; Salgado 1996:29), and it does seem that goldworkers held a special status in at least Nicarao communities (e.g., Chapman 1974:36). Matagalpa seems to belong to the Chibchan language family, and linguistic and genetic evidence has been used to identify a "Chibchoidean Tradition" in lower Central America and northern South America with roots reaching as far back as the Holocene (Fonseca 1994; Hoopes 2002; Ibarra 1994; Salgado 1996:49-53). Chibchan-speaking populations were also likely the original inhabitants of those parts of Costa Rica under Chorotegan control at the time of contact, and in fact appear to have retaken the Orotiña territories on the east coast of the Gulf of Nicoya shortly before the Conquest (Healy 1980:21). Alternatively, Incer (1993:291) suggests that the autochthonous residents of at least part of Pacific Nicaragua may have been the Miskitos, a non-Chibchan group whose own oral traditions tell of migrating to the Atlantic Coast (where their modern descendants live) after being expelled from Pacific Nicaragua in the ninth century.

Rivas in Ethnohistory

The archaeological site of Santa Isabel is located in the Nicaraguan Department of Rivas, which, as noted above, was the centre of the Nicarao occupation, though the Chorotega are presumed to have inhabited the territory previously. The ethnohistoric sources relate that the Rivas area was the most populous and fertile region of Greater Nicoya, especially in contrast to the southern sector, which was drier and only sparsely inhabited by comparison (Abel-Vidor 1986:391-92). The Nicarao "capital" was the community of Quauhcapolca,

settlement of the cacique Nicaragua, whose name also came to be used (in typical Spanish fashion) in reference to the town itself and, ultimately, the entire country (Fowler 1989:68; Lothrop 1926:6). Ethnohistoric sources indicate that the settlement lay on the shore of Lake Nicaragua but was very dispersed (Fowler 1989:68). Abel-Vidor suggests the town probably stretched from the modern town of Rivas to the lakeside town of San Jorge (1986:392; Lothrop 1926:33-34), but data collected in a recent settlement pattern survey of Rivas by Niemel (2002) would seem to suggest that the community perhaps did not extend quite so far inland as the modern town (which is located more than 5 km from the lake), and that archaeological sites near modern Rivas and San Jorge, as well as the Santa Isabel site itself, might each separately be identifiable with one of the six communities identified by the Spanish. This being the case, Santa Isabel, which featured the largest concentration of mounds identified by Niemel's survey project and appeared to be the most important site in the area, is a good candidate for Quauhcapolca, though the destruction of the mounds of San Jorge by modern development (Niemel 2002) makes it difficult to completely discount this community as an alternative candidate. According to Peter Martyr, Quauhcapolca featured stepped mounds and temples constructed of adobe brick, open plazas and markets, and goldworks (Abel-Vidor 1986:393-94). A single road passing through the area may have facilitated or controlled trade between the northern and southern sectors of Greater Nicoya (Abel-Vidor 1986:392).

Despite its importance, the Rivas area was *not* initially settled by the Spanish, apparently because policy dictated that settlements be founded in areas where it was necessary to consolidate existing populations, which seems not to have been necessary in the case in Rivas (Abel-Vidor 1986:395). Information on the area is scant after the Conquest: Abel-Vidor (1986:398) suggests that it may have been almost completely depopulated within five years of contact, based on the fact that Oviedo, who visited the new colony from 1527 to 1529, makes no mention of the great population reported by Cereceda and González and notably found no town in the Rivas area in which to stop and rest while returning to Costa Rica with an injured foot. However, Oviedo elsewhere named "Nicaragua" as a major Nicarao town (Healy 1980:25) and two communities with identical or similar names appear to be among

the largest listed in a tax list compiled by López de Velasco near the end of the sixteenth century (they may in fact be the same community, since the list appears to include redundant entries) (López de Velasco 1975:184-85), so whether or not the area was any more thoroughly depopulated at this time than the rest of the country seems to remain a mystery.

While its size, strategic location on the trade corridor linking Pacific Nicaragua and northwestern Costa Rica, and the presence of craft industries like the aforementioned goldworks might have made Quauhcapolca a likely centre for the production of the ceramics that are the focus of this thesis, there is no ethnohistoric information available to confirm this, although there is a report of ceramic production in the area at a much later date (specifically, at San Jorge in 1877) (Bransford 1881:71). In fact, there is hardly any ethnohistoric information available on ceramic production or use *anywhere* in Greater Nicoya, let alone Rivas. The only known production centre (mentioned by Oviedo, Castañeda, Torquemada and López de Velasco) was the island of Chira in the Gulf of Nicoya, which appears to have possessed a highly developed commercial industry and to have traded its products well beyond the local area (Abel-Vidor 1980a:161; Creamer 1986:212; Lothrop 1926:113). Ironically, Chira may not even have been a part of Greater Nicoya: the pottery produced on the island was reputedly of a fine polished black type that is relatively rare in Greater Nicoya in comparison to the brilliant polychromes for which the region is more famous, and Creamer suggests that this fact supports an argument that "the gulf region may have been culturally distinguishable from the rest of Greater Nicoya" by the time of the Spanish arrival (1986:212).

The nature of the ethnohistoric accounts available to modern scholarship has had a dramatic influence on the direction of subsequent archaeological research in Greater Nicoya (Abel-Vidor 1981:88). González reported Nicaragua as "another Yucatan", and this perception that the area was somehow "the same" as Mesoamerica to the north was shared by many of his fellow chroniclers, who perhaps overemphasized linguistic and cultural commonalities to the detriment of differences (Abel-Vidor 1981:88), a point to which we will return later. As the following survey shows, archaeological work in the area, like our own Santa Isabel project, has often taken its lead from ethnohistory and focussed on the

Mesoamerican connection, though more recent work has attempted to balance this focus with an appreciation for "the uniquely innovative character of the archaeological and protohistoric cultures of Greater Nicoya" (Abel-Vidor 1981:89).

PREVIOUS ARCHAEOLOGICAL RESEARCH

Useful summaries of previous archaeological work in Nicaragua can be found in several sources. Stone (1984) and Drennan (1996) provide relevant syntheses for all of Lower Central America, while Lange (1984) more specifically discusses the archaeology of Greater Nicoya. Summaries of Nicaraguan archaeology in particular can be found in Healy (1980), Gorin (1992), Lange et al. (1992) and Salgado (1996). The following discussion of the early archaeology of Nicaragua draws in part on these sources.

Early Research

The pioneer of lower Central American archaeology was Ephraim Squier (1852, 1853) an American journalist and diplomat who provided the first accounts and illustrations of the stone monuments of Zapatera and other islands in Lake Nicaragua in publications in the mid-nineteenth century. Squier's popular books spurred an interest in Nicaraguan archaeology not unlike the interest generated by Stephens and Catherwood's travelogues of Mesoamerica. His work was soon followed by publications by Boyle (1868), who worked in Chontales and on the lake islands and discerned that the stone monuments found in these areas belonged to different traditions; Bransford (1881), an American navy doctor who excavated in Pacific Nicaragua and the Nicoya Peninsula in the late 1800s and named Luna and Palmar Wares; Flint (1884), who identified Tola pottery and generated a flurry of popular interest in the area by reporting on the human footprints preserved at Acahualinca in Managua; and Bovallius (1886) a Swedish botanist who published drawings from Zapatera Island and described Punta del Zapote, a site later ruined by looting (Healy 1980:32; Stone 1984:25-26). Other important early work in Central America with some pertinence to Nicaragua was carried out by Walter Lehmann (1920) who traced northern intrusions into Central

America, reported sites in Costa Rica, and argued for a Chorotega homeland in Chiapas, and Herbert Spinden (1925), who argued for a "cultural unity throughout the greater part of Central America" but erroneously conceived of the Chorotega as originating in South America (Stone 1984:17).

The initial bout of activity represented by these early scholars was followed by a sort of lull in Nicaragua archaeology until the publication of important works on the ceramics and monumental stone sculptures of Nicaragua by Samuel Lothrop. Lothrop's two-volume *Pottery of Costa Rica and Nicaragua* (1926), which was based primarily on his study of U.S. museum and private collections, included an important compilation of Conquest ethnohistory (as already noted) and presented a systematic overview of an enormous range of pottery types that is still useful to archaeologists. Lothrop pointed out apparent similarities between design motifs and Mexican iconography and associated specific types with specific ethnic groups. While later work has substantially refined the ceramic typology, his terminology and types can still be found in common use. Lothrop's study unfortunately did not end the lull in Nicaraguan archaeology, and no significant work was accomplished in the country until mid-century.

The Beginnings of Modern Archaeology

In the late 1950s, archaeology in Greater Nicoya began to benefit from a general increase in interest in the "Intermediate Area", a term first applied by Haberland (1957) and defined by Willey as "the lands between western Honduras and northern Peru, in effect lower Central America and the north Andes" (1959:184, cited Healy 1980:4). The most important work in terms of immediate impact was that of Baudez and Coe, whose stratigraphic excavations in the Nicoya Peninsula (Baudez 1967; Baudez and Coe 1962; Coe and Baudez 1961) represented the beginning of scientific archaeology in the area and produced the first archaeological sequence for Greater Nicoya based on radiocarbon dates and ceramic typologies (Snarskis 1981:22). Coe and Baudez defined four chronological periods: the Zoned Bichrome Period (AD 1-300), Early Polychrome Period (AD 300-750), Middle Polychrome Period (AD 750-1000), and Late Polychrome Period (AD 1000-Conquest) (1961:505).

These four periods, which roughly equated with the Maya sequence of Late Formative, Early–Late Classic, Late Classic–Early Postclassic and Late Postclassic, remained in standard use (with modifications) until the early 1990s. While Coe and Baudez identified the Zoned Bichrome Period as "the earliest pottery-making culture known thus far in this part of lower Central America" (1961:514), they explained the material recovered in their excavations in terms of Mesoamerican and/or Andean influences. Coe in particular described Costa Rica and the Intermediate Area as "a cul-de-sac open at both ends" rather than as a meeting place for the cultures of North and South America, and argued that Costa Rica was identifiably "Mesoamerican" as far back as the Zoned Bichrome Period (1962:181, 176).

Contemporaneous with Coe and Baudez's work was that of Willey and Norweb in Nicaragua between 1959 and 1961 under the auspices of the Harvard Peabody Museum of Archaeology Project (Healy 1980:33) and Haberland and Schmidt on Ometepe Island in 1962 (Haberland 1986, 1992). It was Norweb who first defined Greater Nicoya as an archaeological subarea (1961, 1964). The Peabody project investigated numerous sites in the Department of Rivas (Healy 1980:27) as well as in the Managua–Masaya–Granada area (Lange et al. 1992:19; Niemel et al. 1998:678), while Haberland and Schmidt identified Dinarte phase ceramics dating as far back as 2000 BC (Lange et al. 1992:23). The potential impact of this work was considerably diminished as a result of only limited publication in poorly distributed preliminary articles (e.g., Haberland 1963a, 1963b, 1966; Norweb 1961, 1964; Schmidt 1963, 1966). The Rivas material was not adequately published until it was studied by Healy (1974, 1980), and detailed overviews of the Ometepe material did not appear until the 1980s (Haberland 1986). Other material collected by the Peabody Project from outside the Rivas area appears to have *never* been properly studied, though it was examined by Salgado for her dissertation (1996; Niemel et al. 1998:678).

Frederick Lange (1971), who worked in the Sapóa Valley of Costa Rica near the Nicaraguan border, can be credited with introducing processualist techniques to Greater Nicoyan archaeology. Perhaps the most influential archaeologist to work in both countries between the 1970s and the present (as his very long list of publications and edited volumes attest), Lange's initial research focussed on settlement and subsistence patterns, the role of

Guanacaste in mediating northern and southern influences, and comparing cultural adaptations in different locations along the Pacific coast (1978:103). His interests later broadened to include Nicaragua (e.g., Lange et al. 1992) and the Intermediate Area in general (e.g., Lange. ed. 1992, 1996a). While Lange has been a pivotal figure in refining Greater Nicoyan ceramic typologies (e.g., Bonilla L. et al. 1990; Lange et al. 1984), he was also one of the first workers in the area to question the taken-for-granted notion that ceramics can serve as group markers, or that ceramics are necessarily more informative than other classes of material culture. As he observes, "events in the ceramic sphere may not be inextricably correlated with events in other areas of behavior. The shift from non-molluscan-based subsistence was as important, if not more important to the majority of people, as was the shift from monochrome to polychrome pottery" (1978:114-15). Lange also expressed doubts about the relative importance of Mesoamerican influence in Greater Nicoya, and was the leading voice championing a new approach treating Greater Nicoya as a "cultural frontier–buffer zone" characterised by intricate relationships between external forces and local traditions (1978:115). This new trend seems to be reflected, for example, in the work of Sweeney (1975, 1976), who reanalysed ceramics, lithics and faunal material originally excavated by Coe in Guanacaste and came to the conclusion that Coe's inclusion of Nicoya in Mesoamerica was unwarranted (Sweeney 1976:39, cited in Stone 1984:29).

While a great deal of work was accomplished in Costa Rica following the initial efforts of Baudez and Coe, only limited archaeological research was carried out in Nicaragua in the 1960s and 1970s, owing in great part to the disruption caused by the Managua earthquake in 1972, the imposition of martial law by the corrupt Somoza regime in 1974, and the subsequent Sandinista revolution (Hughes 1980:38-39, cited in Lange et al. 1992:26; Plunkett 1999:16-19). Magnus produced the first and only archaeological study of the Atlantic Miskito coast (1974) and excavated in Chontales, though the latter work was never completed or published (Gorin 1992:23). Bruhns (1974) reported on fieldwork at Punto de las Figuras and Punto Zapote on Zapatera Island (though her work was also interrupted), and Reynolds (n.d.) identified Punto de las Figuras as a Middle Polychrome Period Chorotega site based on excavated ceramics (Stone 1984:26). Wyckoff (1974, 1976) studied Nicaraguan

ceramics in the Museum of American Indian collection and investigated migration from Mexico in a brief survey in the Department of León, while Hughes (1980) excavated urn burials in the Managua area. The discovery of the site of El Bosque in northwestern Nicaragua by Nicaraguan archaeologist Jorge Espinosa generated brief international interest when possible stone tools and a possible hearth were found near by mammoth and eremotherium remains and suggested a human presence at approximately 30,000 BP (Gruhn 1978; Page 1978), but the discovery has since been discounted (Jason Gillespie, personal communication 2002).

Ironically, the most important work on Nicaraguan archaeology completed in the 1970s was done by an archaeologist who never excavated in the country. Paul Healy's doctoral dissertation (1974) and subsequent book, *Archaeology of the Rivas Region, Nicaragua* (1980) was based on the unstudied material excavated from the Rivas area and Ometepe by the Harvard University–Peabody Museum Nicaragua Project in 1959 and 1961. Healy developed a descriptive catalogue of the different ceramic types characteristic of the Zoned Bichrome and Early, Middle and Late Polychrome Periods in the Rivas area, and the ceramic sequence and typologies he provides set a new standard for Greater Nicoyan archaeology that continues to be used (with modifications) to the present.

While Healy believes in the local development of the Greater Nicoyan polychrome ceramic tradition, unlike Lange he strongly favours the idea of Mesoamerica influence in Nicaragua throughout prehistory and argues that even the very earliest cultures in the Rivas area tend to be more Mesoamerican in character than anything else (1980:331). Healy finds numerous connections between Rivas ceramics and those of northern areas–including Honduras, El Salvador and Copán–from the Zoned Bichrome Period right through until the Late Polychrome Period (1980:321-24). This evidence of "influence" is backed by evidence of actual trade: Healy notes, for example, that sherds of Papagayo Polychrome (the distinctive white-slipped ceramic most associated with Greater Nicoya) have been recovered at Tazumal, El Salvador, in association with Plumbate and "Mixtec" incensarios as well as other material (1980:322) and that there is "an unusual and repeated occurrence of Plumbate ware with Papagayo polychromes throughout many regions of Middle America"

that suggests that both types were important trade wares in the Middle Polychrome Period, to which Healy assigns a later date than Coe and Baudez, i.e., AD 900-1200 (1980:324). Regarding the known migrant groups, Healy associates the Chorotega with the innovations of the Middle Polychrome Period–including new distinctive polychromes and utilitarian wares, different figurines, the introduction of Central Mexican design motifs, and an increased use of molluscs–and the Nicarao with the Late Polychrome Period, which demonstrates even greater Mexican influence (including "Mixteca-Puebla" designs) and diminished contact with Guanacaste (1980:326, 334-35). In contrast to the Mesoamerican influence, Healy sees only limited contact between Pacific Nicaragua and other parts of Nicaragua, Costa Rica and areas even further south, and in summary suggests that "a line might well be drawn just to the south of Rivas to demarcate the maximum extent of the Mesoamerican culture area" (1980:317, 320).

Developments in the 1980s

Very little archaeological work was accomplished in Nicaragua during the first years of Sandinista power, and information on the work that was completed is difficult to obtain. National Museum staff primarily concentrated on rescue projects (Gorin 1992:24). Wyss (1983) excavated San Cristóbal, a large site near the Managua airport (Lange et al. 1992:25-26), and Baker and Smith (1987) completed a partial survey of Zapatera Island (established as a national park in 1983) and found previously unrecorded sites as well as describing the ceremonial sites of Punta de las Figuras and Punta del Sapote/Sonzapote (Lange et al. 1992:28). (Baker continues to be active in cataloguing sites in the Lake Nicaragua area, most recently on Ometepe [e.g., 2002].) In 1983, Lange and Sheets completed a surface collection survey that gathered lithics and ceramics from 26 sites across the country with the intention of contributing "broadly patterned data about the geographical distribution of diagnostic cultural materials (settlement patterns, ceramic types and lithic technologies) along the Pacific isthmus of Nicaragua" (Lange et al. 1992:35), but the results of this work were not published in detail for almost a decade. French archaeologists Rigat and Gorin teamed with Nicaraguan archaeologists to survey sites in Chontales between 1985 and 1987, identifying

71 sites and exploring four in greater detail (Espinoza Pérez and Rigat 1994; Gorin 1992:23; Rigat and González Rivas 1996). Research was also apparently done by Japanese archaeologists at this time, but no details seem to be available (Lange et al. 1992:29). The lack of comparative data from Nicaragua–especially the Isthmus of Rivas–was keenly felt and commented on by Greater Nicoya researchers whose conclusions were most often based on Costa Rican work (e.g., Lange 1984, Lange et al. 1984).

Archaeological research in the Costa Rican half of Greater Nicoya was considerably more productive during this time. Notable work focussed on the Gulf of Nicoya (e.g., Creamer 1983, 1986); the Vidor and Nacascolo sites in the Bay of Culebra (e.g., Abel-Vidor 1980b; Benson 1981; Lange, Ryder and M. Accola 1986; Moreau 1983; 1984) and the Tempisque valley (e.g., Day (1984a, 1984b, 1984c). Much of this work is outlined in *Prehistoric Settlement Patterns in Costa Rica* (Lange and Norr 1986), a collection that also includes a brief section on Nicaraguan archaeology summarizing the Lange and Sheets survey and Haberland's Ometepe project from the 1960s (Haberland 1986; Lange, Sheets and Martínez 1986). *Between Continents/Between Seas: Precolumbian Art of Costa Rica* (Benson 1981), a catalogue which includes scholarly articles on the archaeology and cultural history of Costa Rica and Greater Nicoya, also provides an additional useful synthesis of research up to this time. Somewhat outside the area usually defined as Greater Nicoya but relevant to the subject was Hoopes's important study focussing on the Arenal region of Guanacaste, which takes a strongly anti-diffusionistic stance with regard to the development of agriculture, ceramic technology and village life in Costa Rica and Central America in general (1987).

A significant development in the 1980s was a series of conferences held in the United States and Costa Rica between 1980 and 1985 that brought together scholars working in Greater Nicoya primarily to clarify ceramic descriptions and chronology. The first of these meetings concentrated on chronological issues and generated a companion volume, *The Archaeology of Lower Central America* (Lange and Stone 1984). Subsequent conferences focussed specifically on clarifying dates for the four standard periods as well as on producing a unified classification system for Greater Nicoya ceramics (based primarily on Healy's work as well as on Day's [1984a, 1984b, 1984c] study of complete vessels recovered from the

Hacienda Tempisque cemetery in Guanacaste) that could be used by field archaeologists. Principal types were defined as those with either pan-regional presence (i.e., present in both Nicaragua and Costa Rica) or strong presences in either country (Lange et al. 1984:200). Types specific to what were coming to be known in the literature as the northern and southern sectors of Greater Nicoya (cf. Lange 1984:167) were also identified. The revised classification system was summarised in Lange et al. (1984) and outlined in detail in a special volume of *Vínculos*, the journal of the Museo Nacional de Costa Rica (Bonilla L. et al. 1990).

One of the trends in Greater Nicoya archaeology reflected by the conferences was the application of neutron activation analysis (NAA) to the ceramic database (Lange et al. 1984:200). NAA made it possible to distinguish between Nicaraguan and Costa Rican materials, and thereby suggested regional centres of manufacture for various types. NAA was used extensively in the early 1980s after Lange initiated the Greater Nicoya Ceramic Project Analytical Program in 1978 under the auspices of Ronald Bishop at the Brookhaven National Laboratory (Lange et al. 1992:138). More than 1200 sherds were eventually analysed by the project, which is discussed in detail in Bishop et al. (1988).

An ongoing interest in migration and in the nature of the relationships between Greater Nicoya and Mesoamerica is evident in the aforementioned work of Fowler (1981, 1989) and Hoopes and McCafferty (1989), as well as in that of Day (1984a, 1984b, 1984c). Day argued that standardized iconography on ceramics related to Postclassic Mesoamerica iconography of Central Mexico was brought to Nicaragua by migrating Chorotega or Nicarao (1984b:217), and that white-slipped polychrome vessels may in fact have been introduced along with metallurgy into Mesoamerica from Central America at around AD 800 (1984c:192); this idea turns on the assumption that white-slipped Mixteca-Puebla and Cholula polychromes begin no earlier than AD 1100, which does not appear to be the case (cf. McCafferty 1994). Hoopes and McCafferty, in contrast, argued that the new iconographic elements that appeared on Nicaraguan ceramics during the Sapoá Period were more generically Mesoamerican than specifically Central Mexican or "Mixteca-Puebla" and that Nicoyan ceramics in general are more similar to those from the Veracruz area than those from Central Mexico; this argues for a connection between the Nicarao and Chorotega and

Gulf Coast groups like the Olmeca and against the connection made by Fowler (1981, 1989) between these groups and the Central Mexican Toltecs (Hoopes and McCafferty 1989:26).

By this time, however, the database had grown sufficiently to reveal a long history of indigenous cultural development that could be explained without reference to outside influences, and this encouraged the further development of arguments stressing the greater importance of local development in comparison to the effects of Mesoamerican influence (e.g., Creamer 1989; Creamer and Haas 1985; Hoopes 1987; Lange 1984). Lange argues that while ceramic types typical of the northern sector, like Vallejo and Madeira, reflect external cultural influences, there is "no definite evidence of major Mexican population movements" (site-unit intrusions, for example) in the periods associated with Chorotega–Nicarao migrations (1984:184). Rather, Lange argues that "Mexican" ceramic motifs " passed through the cultural filtering process that would have taken place during the course of a lengthy, overland dispersal of people from Mexico southward" (1984:184). Creamer and Haas suggest that societies in the Gulf of Nicoya area immediately prior to Spanish contact were not complex enough to be included in the "Mesoamerican political sphere" (1985:749). Creamer (1989) argues that culture area approaches in general are outmoded and that other models might be more fruitfully applied to explain the relationships between Mesoamerica and lower Central American Societies, such as a world systems model or the interaction sphere model applied by Smith and Heath-Smith (1980) to explain the presumed appearance of possible Mixteca-Puebla elements in the Nicoya region prior to their appearance elsewhere in the Mixteca-Puebla interaction sphere (though this latter idea, as already noted above with regard to Day's [1984a, 1984b, 1984c] work, is based on faulty chronology).

Nicaraguan Archaeology at the Turn of the Century

The 1990s were marked by a veritable explosion in publications about the archaeology of Nicaragua, Costa Rica and the Intermediate Area in general. Important volumes include *Wealth and Hierarchy in the Intermediate Area* (Lange. ed. 1992), based on a 1987 symposium and reflecting the trend in research focussing on the achievements rather than the "historically perceived shortcomings" of the Intermediate Area (Lange 1992a:12);

Reinterpreting Prehistory of Central America (Graham 1993), which although focussing on parts of Central America other than Greater Nicoya provides a useful context for interpreting that area; and *The Archaeology of Pacific Nicaragua* (Lange et al. 1992), which reports on the 1983 survey by Lange and Sheets as well as on Haberland's Ometepe Island work from the early 1960s, and which also provides some of the first available information on the analysis of obsidian samples from Nicaraguan contexts. Virtually all of Lange and Sheets's obsidian samples were identified with Mesoamerican sources in Honduras and Guatemala; surprisingly, no tools were created using material from sources within Nicaragua itself (1992:131-34). *30 Ānos de Arqueologia en Nicaragua* (Arellano 1993), published by Nicaragua's National Museum, collects articles previously published elsewhere. Perhaps the most important recent collections, however, are *Paths to Central American Prehistory* (Lange 1996a) and a special edition of *Vínculos* dedicated to the "*Taller sobre el futuro de las investigaciones arqueológicas y etnohistóricas en Gran Nicoya*" (Vázquez L. 1994). The former volume provides a state-of-the-union address for Central American archaeology comparable to that provided by Lange and Stone (1984) and features a useful summary chapter by Lange identifying areas for future research. The *Vínculos* volume represents the proceedings of a conference held in Guanacaste in 1993 that introduced a new chronological sequence nomenclature replacing the old Zoned Bichrome–Early/Middle/Late Polychrome Period system (Table 2.1). The impetus behind the change was a study by Costa Rican archaeologists of ceramic styles, absolute dates, settlement patterns and mortuary customs which suggested that what was formerly called the "Early Polychrome Period" actually began circa AD 300, rather than AD 500 (Guerrero M. et al. 1994:92). This chronology is in present use, though more recent studies (e.g., Niemel 2000) push the start of the Orosí Period back to 2000 BC.

Table 2.1 Revised regional chronological sequence for Greater Nicoya

Period	*Date*
Orosí	1000–500 BC
Tempisque	500 BC–AD 300
Bagaces	AD 300–800
Sapóa	AD 800–1350
Ometepe	AD 1350–Spanish Conquest

Research in Nicaragua finally began to take off in the 1990s with the initiation of several significant new archaeological survey projects. A second collaborative project between Rigat and Nicaraguan archaeologists followed up the 1980s Chontales study with a survey of the Lake Managua basin; one of the joint conclusions derived from these projects was that the boundaries of Greater Nicoya could be extended into these areas during certain portions of their histories (Espinoza Pérez and Rigat 1994; Espinoza Pérez et al. 1994; Rigat and González Rivas 1996). This work has since been followed up with ongoing surveys by Nicaraguan archaeologists in Chontales, and is also complemented by Van Broekhoven's (2002) ethnohistoric-oriented study of the Matagalpa and their interactions with the rest of Nicaragua. Another large-scale survey that revealed major new sites was initiated by Fletcher along the Honduran border in northcentral Nicaragua (Fletcher et al. 1994). Fletcher located and surveyed 90 sites (including regional centres with numerous mounds) dating to approximately AD 300-1000 along the Rio Coco in the "buffer zone" between Mesoamerica and Greater Nicoya (Salgado Gonzalez et al. n.d.:6-7). The sites were considered to be more typically "Honduran" than "Nicaraguan", and the area appears to have been abandoned around AD 1000. Again, Nicaraguan archaeologists have continued to follow up this research with additional survey work (e.g., Espinoza Pérez et al. 2000). Lange returned to head a joint project involving American and Nicaraguan archaeologists that surveyed the urban area of Managua, especially areas under threat of development. A novel feature of this project was an ambitious plan to publish the reports (as well as other hard to obtain documents pertinent to Nicaraguan archaeology) on the Internet as well as in print; unfortunately, the Internet project was only partially completed and only the reports of the first two seasons of the three-year project have appeared in print (Lange 1995, 1996b). Project successes included the establishment of a new local chronology that indicated occupation as early as the Orosí (or Formative) Period and the excavation of house foundations–still a rarity in Nicaraguan archaeology–and the largest collection of funerary urns ever scientifically collected in Nicaraguan archaeology.

Silvia Salgado González (1996), a Costa Rican archaeologist who had previously worked at Nacascolo and participated in the ceramic conferences of the 1980s, surveyed the Granada

area and discovered and/or documented 37 sites–two of which, the major sites of Tepetate and Ayala, had been originally tested by Norweb (Salgado 1996:55). Tepetate appears to have been the principal settlement in the area from its foundation after AD 950 until contact (Niemel et al. 1998:677; Salgado 1996:141), and is interpreted as a Chorotegan site (Salgado 1996:303). Already partially destroyed by the encroaching suburbs of Granada at the time of the survey and a later reconnaissance (i.e., Niemel et al. 1998), Tepetate extended at least 200 hectares and featured at least 14 low mounds covered with slabs of stone–a rare find in Pacific Nicaraguan archaeological sites–as well as a plaza (Niemel et al. 1998:677-78). A great number of Papagayo figurine moulds recovered from the site provide the first direct indication of specialised production of ceramics at a site in Nicaragua (Niemel et al. 1998:678). Ayala, Tepetate's apparent predecessor as the major site in the area (and the actual focus of Salgado's research, though less relevant than Tepetate to this thesis's focus on later periods), provided "the largest collection of provenienced lithic artifacts ever recovered in Nicaragua" (Salgado et al. n.d.:9).

Salgado's study argued that major changes at the end of the Bagaces Period could be connected to the migration of Mesoamerican groups and that the local developments in Greater Nicoya could not be understood without examining the area in terms of its interaction within a larger world system. She also argued that her Granada chronology suggests that the Chorotega likely settled first in Rivas (where the first Papagayo ceramics appeared circa AD 900) before moving north to Granada (Salgado 1996:303-4). Supporting evidence for Nicaragua's interaction within a larger system was provided by an analysis of obsidian artifacts collected from Ayala as well as from Fletcher's Rio Coco sites which indicated that the vast majority of these lithics could be sourced to Güinope in Honduras (just across the border from Fletcher's sites, and also the primary source for Lange and Sheets's material [Lange et al. 1992]), while an additional 15 per cent of the sample could be traced to three Mesoamerican sources: Ixtepeque and El Chayal in Guatemala and Zacualtipán in Hidalgo (Salgado et al. n.d.:11). As with the lithics reported in Lange et al. (1992), all of the worked obsidian material came from outside of the country. Later work based primarily on Salgado's study revised the standard chronological sequence for Rivas

archaeology established by Healy (1980) and suggested that regional differences can be identified in the material culture of Pacific Nicaragua, which had previously been assumed to be relatively homogenous, at least within the individual northern and southern sectors (Niemel et al. 1998:677-79). Salgado also led a similar, survey of the Masaya area, currently the focus of ongoing dissertation research by Nicaraguan archaeologist Manuel Román Lacayo (2002; cf. Salgado et al. 1998).

In an unpublished manuscript co-authored with Braswell and Glascock, Salgado and Fletcher draw upon their surveys to argue that the emergence of the Nicaraguan social order "cannot be understood solely in terms of factors autochthonous to Greater Nicoya" (Salgado et al. n.d.:2), and suggest that theories focussing on local cultural development "underestimate the impact of macroregional interaction", such as economic interaction between the border area sites with Honduran polities in the southeastern Maya periphery and later with El Salvador and Guatemala (n.d.:5, 16, 20-21). Yet rather than returning to the old paradigm of explaining everything in terms of Mesoamerica diffusion, they propose a generalised interaction model based on world systems theories that acknowledges the importance of both internal and external factors in cultural development (n.d.:5), and argue that Nicaraguan sociopolitical evolution is the product of elites actively using their resources for status-raising exchanges with elites in other regions, parallelling sociopolitical processes occurring on a larger scale in the Classic-period southeastern Mesoamerica periphery (n.d.:32-33). The prehistory of Nicaragua, they conclude, can best be explained in terms of "the skilful manipulation of macroregional interactions by conscious actors, rather than passive diffusion" (n.d.:37).

The Archaeology of Pacific Nicaragua demonstrates the kind of emphasis on local development that is criticised by Salgado and company. Lange and his co-authors continue to argue that there is little archaeological evidence supporting the Mesoamericanisation of any part of Pacific Nicaragua, that small immigrant populations may not have been as "dominant" as ethnohistoric documents suggest, and that Mexican groups like the Nicarao more likely "adapted to local indigenous patterns more than the local people were influenced by Mesoamerican practices" (1992:269-72). While Lange and his co-authors do express an

interest in exploring the question of how local populations actively managed external influences and sustained local autonomy (1992:277)–a question very similar to the one that Salgado and her co-authors are attempting to answer in their paper–they are less willing to grant an important role to elite interaction. Instead, they observe that Central American cultures were much more successful in achieving cultural stability than those in Mesoamerica, and suggest that complexity may even have been intentionally *avoided* in favour of this kind of long-term stability (Lange et al. 1992:278). This leads them to the interesting possibility that the sophisticated craft traditions of Greater Nicoya and Central America in general "were more likely due to the self-satisfaction and service of the artisan and local consumer than the need to satisfy any internally or externally imposed elite demand" (Lange 1992b:438-39). While this theory finds some support in a certain lack of evidence for emergent complexity in many parts of Central America and is certainly worthy of further consideration, it does seem to give short shrift to ethnohistoric records that suggest that elites (and Nicarao elites in particular) *did* exercise considerable authority in Greater Nicoya (cf. Fowler 1989:201), a topic to which we will return in chapter 5.

A 1999 archaeological survey of the Department of Rivas by Karen Niemel followed the lead of Salgado and company rather than Lange and company, and is particularly relevant to this thesis's focus on the Santa Isabel site, since Niemel's findings played a significant role in the selection of the site for excavation by the University of Calgary project (Niemel 2000, 2002). Employing a similar methodology to that used by Salgado's Granada survey, Niemel focussed on prehistoric settlement and exchange patterns and sought evidence to explain the relationship between migration and the emergence of sociopolitical complexity in the area, with a particular interest in the transition between the Bagaces and Sapoá periods–the period associated with the arrival of Mesoamerican groups in the area. Her survey covered an area of 264 km^2 extending from south of the modern town of Rivas north towards Río Ochomogo, the ethnohistoric border between Nicarao and Chorotega territory (Lothrop 1926:5). 48 sites were identified (five of which had been excavated by Willey and Norweb), the earliest of which dated to the Orosí Period. Test pits were excavated at four sites, including Santa Isabel, which as already noted was the largest site in the area (in all periods, in fact) and the

only one to still feature mounds in the late 1990s.. Niemel found several similarities between Rivas and Granada, including Bagaces-Period lithics imported from the Güinope and Ixtepeque sources, imported ceramics suggesting trade with Honduras and El Salvador, and a shift in the settlement pattern in the direction of the lake during the Bagaces to Sapoá transition (though Santa Isabel remains the largest site in all periods). Niemel also found ceramic evidence disputing the early homogeneity of the Greater Nicoya, and suggests that social frontiers between Nicarao and Chorotegan settlements might be reflected in late period changes in site locations (Niemel 2000:4).

CONCLUSION

While neither the ethnohistoric nor the archaeological databases for Nicaragua and Greater Nicoya in general are as extensive as we might wish, the review of these databases clearly supports the presence of distinct, rival ethnic groups in Nicaragua in pre-Conquest times–even if chroniclers may have occasionally failed to pick up on the finer points of distinction between specific groups. And while the nature of the migration of groups from Mexico continues to be debated, the ethnohistorical literature leaves no question that these migrations occurred, and this in itself would have provided a catalyst for the kind of differentiation that causes ethnicity to become salient, a point that will be discussed in greater detail in chapter 5. While none of the archaeological work summarised here can be said to provide definitive "proof" of the presence of migrant groups (the excavation of a Chorotegan cacique with a Mexican driver's license in his wallet would be particularly helpful in this respect), it does at least provide evidence for real connections with Mesoamerica. This evidence includes not only iconographical motifs that betray Mesoamerican influence–the traditional hallmarks of Mesoamerican influence in Greater Nicoya–but also the apparent importation of virtually all obsidian material from Mesoamerican sources and the discovery of Nicaraguan artifacts in Mesoamerican contexts, like the Papagayo sherds found with other trade wares mentioned by Healy (1980). This evidence suggests the presence of trade networks or interaction spheres, and the existence of such entities would likely have been a

pre-requisite for a migration, since migrant groups rarely choose destinations of which they have no knowledge at all (Anthony 1990:895-96), and trade networks could have provided such knowledge.

As archaeological knowledge of Greater Nicoya has grown, it has revealed an increasingly complex picture of the intra-areal relationships that suggests less homogeneity between the northern and southern sectors as well as between regions within these sectors than was previously thought. While this diversity has raised questions about the usefulness of Greater Nicoya as a conceptual entity (e.g., Salgado 1996:54), it is perhaps good news for archaeologists interested in ethnicity. Whereas earlier work suggested that the material culture of Chorotega and Nicarao sites was essentially the same (as we noted in chapter 1 with particular regard to ceramic assemblages), greater regional variation, like that observed by Salgado and Niemel, would seem to increase our chances of identifying unique ethnic markers that might be associated with specific groups. Unfortunately, as we have seen, ethnohistory is silent on the topic of ceramic production and usage, and therefore attempts to use ceramics as markers will need to be justified by other means, such as the identification of patterns of habitus, as suggested in chapter 1. Before we go on to discuss this approach, however, a discussion of the nature of ethnicity itself is in order.

Chapter 3
THE NATURE OF ETHNICITY

As the preceding chapters have indicated, archaeologists interested in pre-Columbian Nicaragua do not have to start with a completely blank slate, inasmuch as there is an ethnohistoric record that can be used as a starting point for inquiries into the country's prehistory. Knowing as we do that there were ethnic groups that traced their origins back to ancient Mexico, it seems a natural next step to begin looking for archaeological evidence of these groups–to attempt to identify their material culture. But before we can do this, we need to understand the *relationship* between ethnicity and material culture–a relationship that is often simply assumed by archaeologists investigating ethnicity–and the first step towards such an understanding is to consider the nature of ethnicity itself.

THE PRIMORDIALIST-INSTRUMENTALIST DEBATE

Ethnicity research emerged as an important topic in the social sciences in the late 1960s, when anthropologists, sociologists, political scientists and other researchers began to feel that existing theories of ethnicity were inadequate in explaining a world-wide "increase in the political salience of ethnic self-consciousness" (Jones 1997:51). This led to a new interest in sub-groups rather than entire cultures (Emberling 1997:295) and generated attempts (especially in sociology) to "conceptualize ethnic groups as economic and political interest groups" (Jones 1997:54). These new conceptualizations challenged the very nature of ethnicity as it had been long understood, and led to the beginning of a long-standing debate between what came to be known as *primordialist* and *instrumentalist* approaches to ethnicity.

Primordialist and instrumentalist (also known as *circumstantialist*) theoretical perspectives currently dominate the ethnicity literature, despite a growing sense that the debate over their relative merits may be counterproductive to ethnicity studies (Banks 1996:39; Bentley 1987:25; Hutchinson and Smith 1996:8; Jones 1997:65). A purely primordialist position would argue that ethnicity is a given, innate aspect of human identity that requires

"description rather than explanation", and which has no purpose other than the purely psychological (in that it provides individuals with a sense of group membership) (Banks 1996:39). In contrast, the instrumentalist position argues that "ethnicity is an artefact, created by individuals or groups to bring together a group of people for some common purpose", and which continues to exist only to serve that purpose (Banks 1996:39). Being innate, primordialist ethnicity is essentially static, whereas instrumentalist ethnicity is dynamic and situational (Jones 1997:72).

The primordialist approach has a longer history in the study of ethnicity, and its early influential proponents, Edward Shils (1957) and Clifford Geertz (1996), used the concept descriptively rather than as an explanatory concept (Bentley 1987:25; Hutchinson and Smith 1996:8; Jones 1997:65). Geertz, for example, considered a "primordial attachment" to be one that stemmed not from social interaction but rather from the assumed givens of social existence: "immediate contiguity and kin connection mainly, but beyond them the givenness that stems from being born into a particular religious community, speaking a particular language, or even a dialect of a language, and following particular social practices" (1996:41-42). While Geertz (and Shils as well) did not necessarily see "primordiality" as being *inherent* in these givens so much as being something that was *attributed by individuals* to them (Eller and Coughlan 1996:47; Hutchinson and Smith 1996:8), he argued that these givens have nevertheless generated a sense of "natural" or even "spiritual" affinity among people in virtually every society in all times (Geertz 1996:42). However, he proposed no explanation for why this might be so, or why some givens appear to be essential to the identity of some groups while being inconsequential to others.

On the other hand, the American political scientist Harold Isaacs (1974), developed the concept of primordiality in order to *explain* the power and persistence of ethnic identity (Jones 1997:65-66). Isaacs drew on psychological theories of identity to explain the strength and endurance of ethnic sentiments and attachments; he argued that early processes of socialization provide individuals with primordial bonds, the power of which derived from the natural need of all human beings for a "sense of belongingness and self-esteem" (Jones 1997:66). While Isaacs's view of the formation of ethnic identity was simplistic–ignoring

anthropological evidence which suggests that social identity is continually renewed and remade rather than forged at an early age (Banks 1996:40; Eller and Coughlan 1996:46)–like Geertz and Shils, he used primordiality as a native category, in that he did not argue that ethnic identity was actually unchanging and enduring but rather that it was *perceived to be that way* by those who subscribed to it, whatever an etic perspective might otherwise suggest (Banks 1996:40).

The "psycho-cultural" approach of De Vos and Romanucci-Ross (1975, 1995) was also based on the argument that ethnic identity is a primordial characteristic which helps to define the self by providing a sense of continuity and belonging, though it also emphasized that ethnicity can also be used to emphasize differences with others (De Vos and Romanucci-Ross 1995:350; McCafferty 1988:20-21). Yet while they accept that primordial identity is not innate and immutable–that it can be shaped by outside influences, and not just in the earliest stages of socialization–and recognise that ethnic pasts can be deliberately created or fabricated "for emotional as well as new political motives or social-economic gain" (1995:13), they deny that ethnicity ultimately serves any primarily instrumental purpose other than the psychological. On the contrary, they consider the emotional need to belong to be so great that the psychological rewards of remaining part of the ethnic group will always outweigh the potential rewards that would result from changing one's behaviour in order to gain occupational or social advantages (De Vos and Romanucci-Ross 1975:385).

The primordial perspective has the primary advantage of drawing attention to the affective nature of ethnic attachments, an aspect that is generally dealt with poorly by instrumentalist approaches to ethnicity (Jones 1997:68). Yet there are a number of problems with the approach in general. One problem is that many primordialist theories romanticise and mystify ethnic identity by failing to provide an explanation for it (Jones 1997:68). As Eller and Coughlan observe, to claim that primordial identities simple "are" is to claim that primordial identities are "qualitatively different from other kinds of identities" because they are not based in social interaction (1996:45). This claim also denies that emotions have social origins, because if the emotional ties attached to ethnic identities are themselves not born in social interaction, then they must be also somehow "just there" (Eller and Coughlan

1996:49-50). Taken to its logical extreme, the ultimate (and somewhat disturbing) implication of this argument is that if ethnic bonds have any source at all, then it must be essential (Eller and Coughlan 1996:50). Most anthropologists find this conclusion unacceptable, though it has its advocates in sociobiologists like Pierre van den Berghe, who treat ethnicity as reflecting a biological and nepotistic predisposition toward kin selection (1996:57; cf. Bentley 1987:26).

A second problem with primordial approaches (one which builds on the assumptions implicit in the first that primordial attachments are involuntary, and thereby coercive), is that these approaches often "suggest that ethnic identity is a determining and immutable dimension of an individual's self-identity" (Jones 1997:69; cf. Eller and Coughlan 1996:45). As we have already noted, while theorists like Shils, Geertz and Isaacs implied that members of ethnic groups may themselves perceive ethnicity as being immutable and unquestionable, they did not claim that this was in fact the case; however, Eller and Coughlan argue that less careful researchers have treated ethnicity as if it *did* in fact possess these qualities (1996:48). Such an approach cannot explain many of the phenomena associated with ethnicity, such as the fluid nature of ethnic boundaries (see the following discussion), the different experiences individuals have of ethnicity, the varying importance of ethnicity in different social contexts, or the spontaneous appearance of new ethnic identities (Eller and Coughlan 1996:46; Jones 1997:69). Claims that ethnicity is immutable also contradict anthropological evidence that social identities are continually remade, as previously noted with regard to Isaacs.

A third problem is that primordialist approaches, in their simplest forms, often ignore context, treating the origin of particular ethnic groups as something that happens in a social and historical vacuum (Eller and Coughlan 1996:45; Jones 1997:70; Nanda 1994:303). The rationale for this is that if ethnicity is simply part of "human nature", then social and political contexts are irrelevant to the discussion of its origin. A related problem is that primordial approaches also fail to consider that the very concepts that are central to their argument–most notably "ethnic group" and "nation"–are themselves historically situated and culturally constructed, the legacy of a long western tradition of romanticising and naturalizing

the ethnic and national unit (Jones 1997:70-71). Because primordialist approaches by nature must accept ethnicity as a given, they are therefore poorly positioned to question whether or not the concept is valid in all times and places.

Instrumentalist approaches to ethnicity are effective in addressing most of these problems associated with primordialist approaches, primarily because they view ethnicity as dynamic rather than static. Broadly speaking, ethnicity in instrumentalist approaches is treated as being socially constructed, a "social, political and cultural resource" that different individuals or interest/status-groups can tap to build individual or group identities (Hutchinson and Smith 1996:8-9). However, instrumental approaches actually encompass a range of theoretical perspectives that differ in their relative interest in individual behaviour as opposed to social structures or cultural norms (Jones 1997:72). For example, some theories emphasise that individuals make decisions to join ethnic groups in certain circumstances in order to achieve personal goals that are primarily political or economic, such as wealth, power and status (Hutchinson and Smith 1996:8-9). Other theories, in contrast, are more group-oriented, focussing on how competing elites manipulate symbols in order to gain popular support and achieve essentially political goals (Hutchinson and Smith 1996:8-9). The work of two of the key figures in the development of the instrumentalist approach, Fredrik Barth and Abner Cohen, reflect these different theoretical orientations, with Barth focussing on individuals and Cohen focussing on groups (Jones 1997:74).

Barth's (1969a) influential introductory essay to *Ethnic Groups and Boundaries: The Social Organization of Culture* generated a great deal of interest in the study of ethnicity and ethnic phenomena among anthropologists (Despres 1975:190; Emberling 1997:295) and formed "the backbone of much anthropological teaching on ethnicity through the 1970s and into the 1980s" (Banks 1996:12). In it, Barth argued against identifying and distinguishing ethnic groups on the basis of the morphological characteristics of their cultures such as dress, foodways and language (something which archaeologists are wont to do), observing that this approach leads us to assume that differences in trait inventories equate to meaningful differences between groups and distracts from the goal of analysing ethnic organisation (1969a:11-12). He also noted that this approach creates problems for identifying subgroups

that may have adapted their culture to a dramatically different environment but which are still considered to be part of a larger ethnic group (1969a:12). Barth's solution–and main contribution to ethnicity theory (Banks 1996:12)–was to focus on the ethnic *boundary*, a social and conceptual perimeter that defines the group, rather than the "cultural stuff that it encloses" (1969a:15).

For Barth, the boundary could not be defined by objectively perceived "cultural stuff", since the only features that really matter in defining the ethnic group are "those which the actors themselves regard as significant" (1969a:14)–a point to which we will return later. Barth stressed the importance of boundaries in response to a prevalent notion that cultural diversity was maintained primarily through geographic or social isolation (1969a:9). In contrast, he noted that cultural differences often continued despite contact and interdependence between different groups, observing that "boundaries persist despite a flow of personnel across them" and

> stable, persisting, and often vitally important social relations are maintained across such boundaries, and are frequently based precisely on the dichotomized ethnic statuses. In other words, ethnic distinctions do not depend on an absence of social interaction and acceptance, but are quite to the contrary often the very foundations on which embracing social systems are built. (Barth 1969a:9-10)

But given such interaction, we might well ask why ethnic boundaries exist at all? In a nutshell, Barth argued that while ethnic groups may be interacting and interdependent, they are also in competition for environmental resources (1969a:19-20). Ethnic boundaries therefore come into being to facilitate the group's ability to compete for resources and structure its interaction with other ethnic groups (Despres 1975:191).

Ethnic Groups and Boundaries and Barth's theories provided a catalyst for subsequent instrumentalist-oriented research into boundaries (e.g., Despres. ed. 1975; Keyes. ed. 1981; McGuire 1982), and the idea that ethnicity appears as a strategy for resource exploitation became a key tenet of the instrumentalist position (e.g., Cohen 1969; Despres 1975). Barth also took an instrumentalist stance in arguing that individual actors can change their ethnic identity in circumstances where their current identity is serving them poorly–where their allegiance to "a culturally specific set of value standards" does them more harm than good

(1969a:25). On the other hand, Barth saw ethnic identity as "imperative" and "superordinate to most other statuses", and viewed the boundary as a rather monolithic entity, persisting through time and continuing to demarcate the ethnic group while the "cultural stuff" underwent continual modification (1969a:17, 38). This has led to criticism that his position is actually more primordialist than instrumentalist (e.g., Banks 1996:13; Jones 1997:75), if not actually something different (Hutchinson and Smith 1996:9).

Cohen's approach is more consistently instrumental, and his *Custom and Politics in Urban Africa* (1969) is often cited as the classic instrumentalist study (cf. Banks 1996:41). Cohen argued that ethnicity is a political rather than a cultural phenomenon (1969:190) and explicitly rejected the ideas that ethnicity is either a given or something people use to make sense of their world (Banks 1996:34). He also rejected the idea that individuals can negotiate their own ethnic identities, since these were seen rather as constraining individual actions (Jones 1997:74). The ethnic group was therefore viewed as a collective of people with common political or economic interests who have informally organised to advance and defend these interests (Cohen 1981:308). Building on the work of Glazer and Moynihan (1965), Cohen argued that modern ethnic groups, rather than being "an archaic survival arrangement carried over into the present by conservative people" (1969:190), are dynamic new social forms that may involve the "rearrangement of traditional cultural items" (or even items borrowed from other groups), in order to allow groups to "articulate their *new roles* in terms of traditional ethnic idioms" (1969:191-92, 194). Cohen was as little interested in inventories of the "traditional cultural items" that were to be rearranged as Barth was in "cultural stuff", and appears to have viewed the selection of cultural items as inconsequential, with any arrangement having the potential to serve the group's interest as well as the next. This relegation of culture to a very secondary position in the discussion of ethnicity is very typical of instrumentalist approaches (Nagata 1981:90).

Like Barth, Cohen argued that ethnicity is a response to external pressures, and that it arises not in situations of isolation, but rather when ethnic groups interact intensively (1969:198). Cohen illustrated this with the example of contemporary Hausa traders in Ibadan, Nigeria, who responded to attempts by the Yoruba to infiltrate the Hausa-controlled

trade in kola nuts and cattle by manipulating their ethnic identities–emphasizing their "Hausa-ness" in order to strengthen relations with other Hausa trade partners. The implication is that, in the absence of the interaction with the Yoruba that created an economic threat, there would have been no reason for Hausa ethnicity to have been so strongly articulated.

Denying the affective quality of ethnicity (and displaying a great faith in human beings' ability to act rationally), Cohen argued that Hausa ethnicity–and ethnicity in general–represents a more pragmatic response to threats against the group's economic and political interests. "People do not kill one another because their customs are different" (1969:200), he observed; rather, they kill each other for the (presumably) more practical reason that "their cultural differences articulate opposing economic and political interests" (1981:322). According to Cohen's instrumental scenario, mutual economic and political interests are the *only* thing that holds ethnic groups together (1969:200). In fact, these interests are presumed to be so overriding that when they are shared by *different* ethnic groups, these groups will lose their cultural differences and will eventually assimilate (Cohen 1981:322). Conflicting interests, on the other hand, will sharpen the cultural differences between groups and compel them to organise themselves more effectively as ethnic entities "in order to conduct the struggle effectively" (Cohen 1981:318).

The instrumentalist approaches to ethnicity pioneered by Barth and Cohen have helped us to better understand how ethnic groups are formed and how ethnic identity can become politicised (Jones 1997:76); they are also effective, as already noted, in dealing with many of the problems intrinsic to primordialist approaches. Yet they are not without their own flaws. Many instrumentalist approaches–especially Cohen's–are reductionist in treating ethnicity as existing only to serve the political and economic interests of special interest groups (Jones 1997:77). However, ethnicity does not always appear to serve political or economic purposes; Epstein (cited in Banks 1996:37) argues that ethnic identities often persist even in cases where stable relations between different groups suggest there is no political or economic "need" for ethnicity to be asserted, and concludes that Cohen assumed too much based on his own ethnographic studies.

Many instrumentalist-oriented studies might also be seen as being reductionist in treating ethnicity as a relatively modern phenomenon, so the focus on economic and political interests is perhaps not surprising, given the salience of these in the modern world. The primary reason for ethnicity being considered a recent phenomenon is that it is perceived as being relevant only in complex or state-level societies, on the apparent assumption that the populations of simpler societies (such as tribes or chiefdoms) are homogenous and share common political interests. Cohen, for example, argued that ethnic groups are by definition "*groups in interaction* with other groups within a common political system. There is no point in referring to isolated, independent societies, like nations within their own boundaries, as ethnic groups" (1981:317-18). This clearly defined, relatively limited vision of what constitutes an ethnic group is shared by other prominent advocates of the instrumentalist approach–many of whom are not anthropologists and are primarily interested in modern ethnicity, such as Glazer and Moynihan (1975) (Banks 1996:41)–and has also been adopted by those archaeologists who argue that ethnic groups only exist within the borders of larger complex societies (e.g., Cordell and Yannie 1991:99; Emberling 1997:304; Stark 1998:10). Yet to adopt Cohen's approach is to accept that political interests are *the* defining criteria of ethnicity, to accept that whatever unique combination of elements may be involved in the definition of an ethnic identity–common origins, kin relations, region, religion, language, social and cultural practices, and so on–it is a common political interest that makes a group an *ethnic* group. If this is the case, then ethnic groups are essentially indistinguishable from other collective self-interest groups, and discussions of ethnicity are moot (Jones 1997:79). However, since this is *not* necessarily the case (as we have just noted), there is therefore no reason not to explore the possibility that ethnicity might have been relevant in many types of past societies, whatever their degree of political complexity.

The reduction of ethnicity to economic and political relationships frequently results in a neglect of the cultural dimensions of ethnicity, another instrumentalist problem (Hutchinson and Smith 1996:9; Jones 1997:77). Jones suggests that this neglect is the result of ethnic categories being treated as empty vessels into which the various aspects of culture are simply poured (1997:77)–an approach common to the theories of both Barth and Cohen.

As a result, culture is denied an important role in the creation of ethnic identity and "ethnic identity and cultural symbols become conceptualized as detached attributes washed on the tides of economic and political relations" (Jones 1997:78). Reductionist instrumentalist studies also neglect the psychological and affective dimensions of ethnicity, primarily because they define interests in strictly material terms (Hutchinson and Smith 1996:9; Jones 1997:78). It is difficult not to connect this neglect to the general lack of interest amongst some instrumentalists (like Cohen) in individuals, who as we have already noted may find the psychological rewards of group membership to be of primary importance. While the actual power of individuals to negotiate their own ethnic identities under given circumstances may vary more than Barth imagined–Banks (1996:16) outlines several problems with Barth's argument on this subject, noting that he does not deal adequately with the problems of domination and power in discussing individual freedom–the emotional aspects of ethnicity remain a topic worthy of further study.

Instrumentalist approaches typically assume that human behaviour is essentially rational, an idea that again ignores the individual perspective on ethnicity, since it assumes that all members of the group will be able to recognise common interests as being rational, when in fact, culturally situated agents may have quite different perceptions of these interests (Jones 1997:79). And again, this approach also ignores the affective dimensions of ethnic identity, which can lead to very irrational behaviour indeed. As Connor observes (presumably in response to Cohen's claim that people only fight as a means to achieve presumably "rational" goals like economic or political power), "people do not voluntarily die for things that are rational" (1996:74-75). What rational economic or political goals are served by a suicide bomber's decision to blow up a busload of civilians? Ethnic identity may be something that group members use subjectively to make sense of their world, but that does not necessarily mean that the behaviour that derives from this identity will make sense to the supposedly objective observer.

OBJECTIVIST VS. SUBJECTIVIST PERSPECTIVES

The differences between (and relative value of) *subjective* and *objective* perspectives on ethnicity are at the centre of a second debate in ethnicity theory that cross-cuts the debate over primordialist and instrumental approaches and thereby helps to blur the distinctions between them (Jones 1997:56-57). Subjectivist views of ethnicity take an emic approach and argue that ethnicity should be defined by self-ascription–that is, by a *perception* by members of a group that they share a common descent (Emberling 1997:302). Objectivist views, on the other hand, take an etic approach and argue that ethnicity is better defined as "something that the analyst uses as a tool to describe and understand processes of which those involved may have no clear grasp" (Banks 1996:36)–in other words, what people *do* is actually more important than what they *think* (McCafferty 1988:7).

The subjectivist view goes at least as far back as Max Weber, who considered "ethnic groups" to be "those human groups that entertain a subjective belief in their common descent" regardless of whether or not an objectively-perceived blood relationship could be established (Weber 1996:35). This approach was prevalent when ethnicity began to emerge as an important theoretical issue in the 1960s and 1970s, and continues to provide the definitions of ethnicity used in most ethnographic discussions, not to mention legislation and public policy on ethnicity-related issues (Cordell and Yannie 1991:97; Jones 1997:59-60). But it was Barth who first incorporated the subjective approach into a programmatic theoretical model (Jones 1997:59) when he emphasised, as already noted, that ethnic groups are ascriptive categories defined by actors within the group. For Barth, an implication of identifying ethnicity subjectively was that it clarified the nature of ethnic unit continuity: "it depends on the maintenance of a boundary" (Barth 1969a:14). Romanucci-Ross and De Vos also consistently adopted a stance similar to Weber's, arguing that ethnicity is "a subjective sense of loyalty based on imagined origins and parentage rather than something to be measured by objectively visible present cultural criteria or historical facts", though they bring a greater level of sophistication to the argument by recognising that ethnic pasts can be

deliberately created or fabricated for a variety of (predominantly psychological) reasons (1995:13).

In contrast, the objectivist approach characterises Cohen's work, which, while it does not deny that actors may have subjective views of their ethnic identity, argues that it is the "objective and collective representations that generate the subjective experience of ethnicity, not the other way round" (1981:322). According to this stance, "the subjective factor in ethnicity is significant for sociological analysis only in its objective manifestations" (1981:322). In the wake of Barth's influential book (and perhaps influenced by Cohen) others also responded by treating ethnicity as an analytical tool and attacking the subjectivist approach that Barth introduced–for example, the papers in Despres (1975)–though they often agreed that "an exclusively objectivist, or cultural, conception of ethnicity is equally unserviceable" and that "ethnicity is both an objective and a subjective phenomenon" (Despres 1975:191, 192).

Arguing over the relative "value" of emic vs. etic perspectives on ethnicity is analogous to arguing about the relative value of biography vs. autobiography. Obviously, both perspectives have their uses (not to mention agendas), and it would be best to keep this in mind. The more recent trend in anthropology has been to accept both subjective and objective criteria as being useful in examining ethnic identity (McCafferty 1988:7, 20).

As the foregoing indicates, there are no simple correlations to be made here: even though the primordialists discussed above tend to favour subjectivist definitions of ethnicity while the instrumentalists favour objectivist, a preference for either a subjectivist or objectivist approach does not seem to dictate either a primordial or instrumentalist approach, or vice-versa. The subjectivist orientation of primordialists like Romanucci-Ross and De Vos, for example, does not prevent them from accepting instrumental uses of ethnic identity (even if they do give priority to its psychological rewards), any more than Barth's own instrumentalist leanings prevent him from adopting a subjectivist definition of ethnicity. And as we have just indicated, instrumentalists like Despres are often not exclusively objectivist. If anything, the preference for a subjectivist over an objectivist approach appears to reflect the researcher's relative interest in the "interpersonal and behavioural aspects of ethnicity"

as opposed to its "socio-structural and cultural dimensions" (Jones 1997:74-75). As already noted, the ways in which the objectivist-subjectivist debate cross-cuts the primordialist-instrumentalist debate blurs the distinctions between the two approaches, and suggests that approaches towards ethnicity that acknowledge *both* dimensions as well as the value of both subjectivist and objectivist perspectives might be more constructive.

INTEGRATING PRIMORDIALIST AND INSTRUMENTALIST APPROACHES

The fundamental opposition between the most extreme claims of the primordialist and instrumental approaches–that ethnic sentiments are either deep-seated, irrational and unchangeable or, conversely, only weak attachments that can be readily manipulated to serve rational ends–had not prevented attempts to fit them into frameworks in which both play a role (Jones 1997:80). After all, both approaches do share features that might provide common ground upon which to build integrated models: both attempt to identify the objective grounds upon which subjective identity claims are made and both accept that it is impossible to predict relationships between cultural features and identity claims (Bentley 1987:25). Such commonalities are promising for the synthesist–though perhaps not for the archaeologist looking for predictive laws that will allow ethnic markers to be identified among material culture remains.

One approach (e.g., McKay 1982) argues that primordial and instrumental factors *both* contribute to the formation of identity, though in varying degrees in different situations, while another tactic (e.g., Smith 1981) involves placing them as distinct processes on a temporal scale (Jones 1997:80-81). As we have already observed, the work of previously discussed researchers like De Vos and Romanucci-Ross already contains both primordialist and instrumentalist aspects, so it is not surprising to find that other attempts to integrate the approaches follow their lead and look at social change as a context within which to make sense of the interaction of the psychological and socio-structural aspects of ethnicity (Jones 1997:81).

Contexts of change also figure in Charles Keyes's (1981) attempt to establish a dialectal relationship between primordial and instrumental aspects of ethnicity. When social circumstances change, Keyes argued, new patterns of social adaptation evolve which stimulate a conscious or unconscious reassessment of ethnic group identities and their function, which in turn leads to the formation of new identities or the investment of old identities with new meaning (1981:15). One potential problem with integrated models like these that focus on ethnic change is that instrumental models typically identify changing political and economic contexts as critical to ethnicity while primordial models (inasmuch as they are interested in change at all) are more likely to identify changing social contexts that "disrupt conventional ways of understanding and acting in the world" as the critical factors (Bentley 1987:25-26).

Jones (1997) is critical of most attempts to reconcile primordialist and instrumentalist positions, arguing that these attempts typically "involve the assertion of some kind of primordial basis for ethnicity which is then articulated with epiphenomenal social stimuli, such as economic and political competition" (1997:82). The results are superficial diachronic models in which the primordial and socio-political aspects are not really "integrated" but rather remain discrete (1997:82). According to Jones, a fundamental difference between primordial and instrumental perspectives that prevents their integration is that they are based on conflicting notions of human agency: instrumentalists believe human behaviour to be rational while primordialists are assumed to focus on its symbolic, presumably irrational aspects (Jones 1997:82). These conflicting notions are at the heart of the problem with the integrated models focussing on ethnic change discussed above. For Jones, it is difficult to integrate the two perspectives because the instrumentalist approach ethnocentrically equates rational behaviour with the pursuit of political or economic interests, and can therefore never truly accommodate behaviours that are directed otherwise and which are therefore irrational (Jones 1997:82). Bentley, also questioning the value of integrating primordialist and instrumentalist models, observes that both models "share a critical gap in their explanatory logic" in that they provide no explanation for "how people recognise the commonalities (of interest or sentiment) underlying claims to common identity" (1987:26; cf. Jones 1997:82-

83). Primordialist models fail to explain why the symbols they identify as being important to ethnic identity have the potency that they do, while instrumentalist models typically make generalizations based on a few cases (Bentley 1987:26).

Despite their criticisms, both Jones and Bentley believe that primordial and instrumental approaches to ethnicity have the potential to be reconciled when a few new ingredients are added to the mix. As Jones notes,

> the dichotomy between primordial and instrumental approaches to ethnicity can be transcended. The cultural practices and representations that become objectified as symbols of ethnicity are derived from, and resonate with, the habitual practices and experiences of the people concerned, as well as reflecting the instrumental contingencies of a particular situation. (1997:128)

As this comment hints in its reference to practices, the key to this reconciliation lies in the application of a *theory of practice*, a topic to which we will return in chapter 5.

IMPLICATIONS FOR IDENTIFYING MATERIAL CORRELATES OF ETHNICITY

Buchignani, writing on the challenges that face archaeologists interested in ethnicity, observes that the limitations of archaeological data mean that "it is always harder for archaeologists to apply a social theory successfully than it is for sociocultural anthropologists" (1987:19). Anthropologists, Buchignani notes, have a difficult time as it is understanding ethnicity, and archaeologists do not even have the benefit of directly observing behaviour; they must make third order inferences where anthropologists make second order inferences (1987:20). We must bear these factors in mind in considering some of the implications of ethnicity theories for archaeologists interested in identifying the material correlates of ethnicity.

Archaeologists have a tendency to treat ethnicity as if it truly were primordial, and it must be admitted that a purely primordialist explanation for ethnicity would make the archaeologist's job much simpler. If ethnic identity indeed were unchanging and coercive, it would increase the chances of finding unique ethnic markers or one-to-one correlations between ethnicity and material culture (even if the specific cultural features that any given

group will use as markers remain impossible to predict). Group-specific behaviours would compel members of ethnic groups to leave a certain archaeological stamp on the record: for groups that use ceramics as markers, pots *would* equal people. On the other hand, accepting a purely primordial approach would also imply accepting that ethnic identity is simply "human nature" and therefore independent of any of the social, geographical, political or other contexts in which that identity came into being; in this scenario material culture that reflects identity would be unable to tell us anything about these contexts or the changes that might occur within then. A purely primordial approach is therefore unsatisfactory for explaining changes in material culture that might be observable in the archaeological record, since the only explanation it could offer for new assemblages would be the introduction of a new group through diffusion.

While instrumentalist approaches have the potential to offer better explanations of changes in material culture, they are no more useful than primordialist approaches in predicting the cultural differences that will be chosen by groups to be "emblematic of their ethnic differences" (Keyes 1981:7) and are in fact considerably more "hostile" to archaeology inasmuch as they downplay the value of cultural stuff in distinguishing between ethnic groups and focus instead on boundaries that are conceptual and fluid. As Barth observed, "we can assume no simple one-to-one relationship between ethnic units and cultural similarities and differences. The features that are taken into account are not the sum of 'objective' differences, but only those which the actors themselves regard as significant" (1969a:14). The instrumentalist position also argues that interest groups can and will manipulate symbols in different situations–even to the extent of appropriating symbols from other groups to serve their own ends–and that symbols will therefore have different meanings in different contexts.

The implications for archaeologists looking for ethnicity in material culture is that ethnic markers will be difficult to identify and that a proper understanding of the various contexts in which they are found is essential to their correct interpretation. But if archaeologists cannot identify ethnicity based solely on material culture, they may at least identify situations in which it may have become salient. Approaches attempting to do this might focus on assemblages of artifacts rather than individual classes–since even if we cannot predict specific

markers, clusters of different artifacts might begin to suggest areas contained by conceptual borders–or on material that might provide evidence of resource competition or resource stress, given the importance placed on these phenomena by instrumentalist arguments.

Neither the primordialist nor the instrumentalist approach, then, offers particularly encouraging news to the archaeologist exploring the relationship between ethnicity and material culture. The primordialist approach is overly simplistic and cannot explain changes in material culture, and the instrumentalist approach discourages attempts to equate material culture with ethnicity. Additionally, neither approach offers a way to predict how groups might select ethnic markers, yet this should not be seen as a weakness specific to these approaches, since it seems unlikely that there is a universal "law" that could be used to do this in all cases.

The selection of markers seems to be best dealt with on a case-by-case basis, but this raises another serious problem: accepting that both subjective and objective criteria are essential in studying ethnicity, can archaeologists really claim to study ethnicity at all by working solely with material culture and lacking the kind of insights into unique subjective perceptions of ethnic identity that ethnographic evidence provides to anthropologists? Probably not: De Vos, for example, specifically notes that it is probably impossible to reconstruct how the "psycho-cultural" approach might have worked in the past (1975:8), while Pollard argues that "the central defining feature of an ethnic group, self-identification ... is clearly beyond the resources of archaeologically derived research" (1994:79) and Cordell and Yannie conclude that "studies of ethnicity involve aspects that are best undertaken from an ethnographic perspective" (1991:107). It may be the case, then, that archaeologists looking for ethnicity but lacking some kind of emic perspective will be simply out of luck: relying only on objective criteria, it is likely impossible to distinguish "ethnicity" in the archaeological record from other kinds of social identity. For this reason, it is essential that an archaeology of ethnicity must also be a *historical* archaeology.

The nature of past ethnicity is probably impossible to infer based solely on material culture in the absence of the context that is provided by historical documentation, and often–as in the case of Nicaragua–it is the historical record itself that points the way towards

past ethnic groups and provides the motivation for investigating them (Cordell and Yannie 1991; McCafferty 1988; McGuire 1982; Shennan 1989). Historical documents may partially compensate for the lack of an ethnographic perspective not only by providing the context within which the ethnic group comes into existence but also by providing insights into the subjective experience of ethnicity, though the insights they provide may be limited by the fact that texts rarely address issues of ethnic identity directly, and will more often provide secondhand accounts of ethnic groups from biassed elite perspectives than firsthand accounts written by group members or based upon interviews with informants (Emberling 1997:315; McCafferty 1988:29). We have already seen how some of these limitations can be found in historical documents from Nicaragua. Historic documents are also far more likely to simply accept group identities as primordial and may therefore be insensitive to changes within groups (Emberling 1997:313). In these respects, the information that can be teased out of historical documents may not be as useful as a true ethnographic account, but a careful analysis can often yield surprisingly sophisticated insights. For example, working with Mexican ethnohistoric sources, Brumfiel has been able to find evidence not only of ethnic self-ascription (which she calls "ethnic affiliation") but also "ethnic attribution .... the character of the group as defined by outsiders", which she derives from stereotypical representations of certain groups presented in the art of others (1994:96). Such studies bode well for the success of the future archaeological investigations of ethnicity that integrate a historical approach.

CONCLUSION

While the primordialist and instrumentalist perspectives, as the foregoing summary suggests, are each limited in their ability to adequately explain ethnicity alone, it remains clear that the nature of ethnicity is such that the study of ethnicity in the past demands the use of historical sources and cannot be accomplished solely through the study of material culture, since the relationship between ethnicity and material culture is unpredictable and, without any knowledge of context or of the subjective experience that group members have

of their own ethnic identity, it is unlikely that we would be able to distinguish ethnic identities from other kinds of social identities. The use of such sources must therefore be a part of a practice theory-based archaeological approach to the investigation of ethnicity. But before we go on to discuss this approach in chapter 5, it will be helpful to review some of the ways in which previous archaeological investigations have approached the relationship between ethnicity and material culture. This will be the focus of the following chapter.

Chapter 4
ARCHAEOLOGY AND ETHNIC IDENTITY

The earliest attempts by archaeologists to identify ethnic groups were generally based upon the simplistic–and essentially primordialist–assumption that such groups could be directly linked to *archaeological cultures* (i.e., "geographically and temporally restricted assemblages of prehistoric archaeological material" [Trigger 1989:162]) and *culture areas* (areas characterised by a relative homogeneity of such cultures, like Greater Nicoya). This assumption that material culture *directly reflects* ethnicity was made explicit in the influential work of Gustaf Kossinna, the German archaeologist who systematized and popularised the culture-historical approach (Jones 1997:5).

CULTURE-HISTORICAL AND PROCESSUAL APPROACHES TO ETHNICITY

Kossinna argued that "in all periods, sharply delineated archaeological culture areas coincide with clearly recognizable peoples or tribes" (cited in Childe 1956:28). Cultural continuity thereby indicated ethnic continuity, and "by mapping the distributions of types of artifacts that were characteristic of specific tribal groups, it would be possible to determine where these groups had lived at different periods in prehistory" (a procedure Kossinna referred to as *settlement archaeology*) (Trigger 1989:165; cf. Jones 1997:16). Differences in culture were explained in evolutionary terms as reflecting the "innate capacities of the 'peoples' producing them" and were used to rank ethnic groups on a scale of evolutionary superiority (Shennan 1989:8), an essentially racist practice that was nevertheless widely accepted in the late nineteenth and early twentieth centuries (Shennan 1989:8). Kossinna's culture-historical ideas were further developed by V. Gordon Childe, who differed from Kossinna in downplaying the racist aspects of settlement archaeology and in focussing on material assemblages rather than individual types of artifacts (Jones 1997:17-18). Childe considered cultures to be "essentially conservative," and like most of his contemporaries, tended to explain change in terms of diffusion or migration; homogeneity between two

cultures was assumed to mean regular contact, while discontinuity implied social differences (Jones 1997:24-25). Early Americanist archaeologists took a somewhat different approach to the culture area concept, focussing more on description and defining territories than on chronology and the reconstruction of past life ways (Jones 1997:21; cf. Hodder 1982:4). This focus seems to have reflected the stereotypical (and ethnocentric) view of indigenous American cultures as stagnant and unchanging.

Archaeologists working within the paradigm of culture history retreated from overtly associating archaeological cultures with ethnic groups (traditionally conflated with "races") following the second world war and the disastrous use of Kossinna's work to justify Nazi[3] Germany's expansion and genocide (Jones 1997:3). Yet it was still taken for granted that "peoples must be lurking behind such archaeological groupings" (Jones 1997:3), and this assumption continues to underlie the culture-historical approaches that characterise most of the archaeological work done in the modern world (Jones 1997:5; Trigger 1989:205), including much of that done by local archaeologists in Nicaragua.

It is clear that the culture-historical approach is based on a number of simplistic and naive assumptions about the nature of ethnicity that have been challenged by the literature summarised in the previous chapter. Accepting that ethnic identities are primordial and more or less unchanging, and that ethnic groups or tribes are themselves bounded and monolithic entities, the culture-historical approach simply assumes that these entities can be correlated with similarly bounded, monolithic assemblages of artifacts (Jones 1997:106). As we have seen, this correlation is denied by Barth and other instrumentalists. Neither ethnic groups nor archaeological cultures seem to be the kind of discrete, bounded entities that primordialist approaches make them out to be (Jones 1997:109-10), and it is simply wrong to equate the two (Emberling 1997:297; Hodder 1982:6; Shennan 1989:6).

The primordialist orientation of the culture-historical approach also assumes that cultural diversity is maintained through isolation and that change is therefore best explained through models stressing migration and diffusion. This idea has also been debunked by Barth's work.

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[3]"I hate those guys" (Jones 1938).

Culture history takes no interest in the ways in which ethnicity might be manipulated to serve various ends, and it is difficult not to connect this to the fact that ethnic groups demarcated by fluid boundaries could not be expected to leave the kind of clear archaeological footprint that facilitates the identification of an archaeological culture.

Accepting ethnicity's instrumental aspects challenges the very existence of archaeological cultures. But perhaps the most significant problem with the culture-historical approach is that it tends to assume that ethnic groups can be identified simply by looking at objectively defined traits of material culture, and therefore fails to give any consideration to either the context in which the group comes into existence or subjective perceptions of ethnic identity. The approach therefore denies the need for historical documentation of ethnicity that we have identified as being crucial to the study of ethnicity in the past.

The new processualist approaches that began to appear in the 1950s rejected the culture-history paradigm. Inspired by the theories of Leslie White and Julian Steward, these approaches shifted attention to culture's adaptive role in different environmental contexts (Hodder 1982:5). While this would seem to suggest that processualist archaeology might have adopted instrumentalist explanations of ethnicity as a strategy for resource exploitation, these explanations would not be developed for another decade or so; in the meantime, therefore, many if not most processualists dismissed ethnicity as a subject appropriate to archaeological enquiries because they rejected the culture-historical equation of ethnic groups with archaeological cultures (Jones 1997:5). An exception was processualist-style historical archaeology, where documented accounts of specific past ethnic groups in the past led to attempts to correlate these, not with archaeological cultures, but rather with particular *forms* and *styles* of material culture (Jones 1997:27). This processual shift from identifying ethnic groups with archaeological cultures to identifying ethnic groups with specific elements of material culture (Jones 1997:107-08; Shennan 1989:18) initiated an extended debate in the archaeological literature on the relationships between style, function and ethnicity.

STYLE, FUNCTION AND ETHNICITY

Archaeologists generally agree that style can be conceived as "a way of doing something" that involves a choice among various alternatives (Hegmon 1992:517-18). Style must therefore exist as an aspect of an activity, and all activities of course generate style (Renfrew and Bahn 1996:395). Another way to think of style is as a sort of formal statement outlining the particular ways in which different artifacts are similar (Conkey and Hastorf 1990:2). These definitions are not mutually exclusive: the *formal statement* simply describes those aspects of material culture that are the product of the *way of doing*.

Style and function are both aspects of material culture, and as the definitions of style given above suggest, they are intrinsically linked: if all activities generate style, then those activities that are specifically "functional"–and what activities might *not* be considered "functional", from some point of view?–must necessarily generate style as well. Processualist approaches, however, often attempted to dichotomize the relationship between function and style in artifacts, which were perceived as adaptive components produced by cultural and behavioural systems (Conkey 1990:8). These components were assumed to possess two dichotomous types of formal variation: *functional*, which served a narrowly defined discernable adaptive purpose (in this respect the processual understanding of "functional" is as limited as the instrumentalist understanding of "rational"), and *stylistic*, which did not. There were opposing views regarding the implications of stylistic variation serving no adaptive purpose. Evolutionary processualists like Dunnell argued that stylistic variation was simply random, reflecting nothing though being useful for establishing chronologies (Dunnell 1978:199). This approach represents a dead end to theorists interested in exploring the *meaning* of style or its relationship to ethnicity, since it leaves style as peripheral and inconsequential (Hodder 1982:205). On the other hand, some processualists (e.g., Binford 1965) continued to acknowledge a connection between style and ethnicity, regarding stylistic variation as a "passive product of the enculturative milieu" that ultimately reflects ethnic differences (Jones 1997:111). This approach is actually not far removed from the culture-historical approach in that it continues to equate ethnic entities with received normative

tradition; as Jones observes, the difference lies only in the assumption that the normative tradition is located only in *certain dimensions* of artifact variability–that is, in non-functional, stylistic variation (1997:111). This assumption led archaeological research into ethnicity to focus on those particular aspects of material culture that were assumed to be "non-functional" (such as stylistic variation in pottery decoration), to the detriment of those aspects assumed to be "functional" (such as vessel form), apparently on the principle that functional considerations will override all others (1997:111).

Despite their rejection of the culture-historical paradigm, these processualist approaches were really no better in explaining the connections between ethnicity and material culture, in that they offered no insight into why stylistic variation should passively reflect ethnicity. In this respect, these approaches simply transposed the culture-historical problem of equating ethnicity and culture to a peripheral domain (Jones 1997:113). Processualist approaches also perpetuated many of the assumptions that were central to the culture-historical approach. Ethnicity continued to be understood in essentially primordial terms–it served no adaptive purpose, it simply "was"–and ethnic groups continued to be defined through objectively identified traits with little consideration of the subjective dimensions of ethnicity or the contexts in which it emerged. Historical archaeology (e.g., McGuire 1982; Schuyler 1980) did, however, recognise the value of documentary evidence in ethnic studies, which was a step in the right direction.

The dichotomous view of style and function has not prevailed in most archaeological research. Neither has the conceptualization of stylistic variation as being necessarily passive. More commonly, style is viewed as possessing a sort of covert function, and stylistic patterns (such as painted designs on ceramics, or the shapes of stone tools) are treated as "coded information about variability in and the functioning of past cultural systems" that can be decoded by the astute archaeologist (Conkey 1990:9). This approach was elaborated during the 1970s, when style began to be understood as playing a more active role and came to be seen "as communication, as social marking, as cultural signals at work in certain social contexts" (Conkey 1990:10). The figure most identified with this new direction is Martin Wobst, whose information-exchange theory of style has had a profound and lasting impact

on style studies in archaeology (Hegmon 1992:520). In a seminal paper, Wobst argued that material culture plays a role in exchanges of matter, energy and information between humans and their environment (which also includes other human populations) (1977:319-21). Visible attributes of artifacts are used to consciously send messages about cultural identity as a strategy for asserting this identity (Gosselain 1998:82). These messages are generally of a simple and recurrent nature, such as messages of emotional state, identification, authorship and ownership, pre- and proscription, and religious and political objectification (Wobst 1977:323). The formal variability in material culture that is generated by this message-conveying role is what Wobst calls *style* (1977:321).

Wobst's approach begins to move away from primordialist views of ethnicity (though his paper reveals no particular familiarity with the relevant literature available at the time of his writing) by suggesting that material culture has a role to play in the construction of identity and by implying that members of ethnic groups can manipulate the expression of their identity and thereby use it instrumentally to serve their interests. However, his original paper demonstrates one of the flaws commonly associated with instrumentalist approaches: in stressing that stylistic information exchange is primarily used because it represents an "efficient" means of asserting identity (Hegmon 1992:520), he defines efficiency rather ethnocentrically in "neoclassical economic" terms and ignores other ways in which it might be efficient (David and Kramer 2001:220; cf. Dietler and Herbich 1998:240). This places unnecessary limits on the scope of his information theory approach, since it denies that ethnicity might be manipulated for "inefficient" (i.e., "irrational" or "psychological") reasons and that style might be used to convey much more complex messages. Wobst also misjudges the range of likely recipients of these messages inasmuch as he fails to consider that "the marking of community or ethnic boundaries" might also require that messages be directed internally to reinforce the identities of members of the ethnic community itself (David and Kramer 2001:180-82). And lastly, Wobst's work is weakened by his focus on the visible and decorative aspects of material culture–a legacy, as we have seen, from earlier processualist approaches to style (though it would be inaccurate to accuse Wobst of viewing style and function as dichotomous). This leads him to go too far in assuming that all decoration is

intended to convey messages about identity and that intentionally sent messages are the only means by which information about identity is conveyed. While this approach seems to have merit in that it argues in favour of making direct correlations between style and ethnic identity (which would thereby lessen the need for documented accounts of ethnicity), it ignores the possibility that identity might be unconsciously expressed in those aspects of material culture that have been traditionally considered as "functional".

Some of the problems with Wobst's approach are addressed in the work of James Sackett, who in stressing the importance of the dualistic nature of all classes of objects–as he put it, "any given segment of formal variation alternatively assumes stylistic and functional significance as we view it at different levels of specificity and in different contexts" (1990:41)–also became the primary proponent of the idea that ethnicity is more often expressed *passively* through practices than actively and intentionally through decoration (Dietler and Herbich 1998:240). Sackett takes up where earlier processualist arguments on this subject left off. His key concept in explaining style is *isochrestic* variation, the spectrum of viable options that might be pursued by a member of a group in order to complete any task, from manufacturing a pot to building a house to cooking a meal (1990:33). The circumscription of these options by various factors (such as the individual's knowledge, technical skill and upbringing) generates a style of practice that will be unwittingly but consistently expressed by given groups at given times and which, Sackett argues, can be considered to be diagnostic of ethnicity (1990:33). According to this view, ethnicity might therefore be found in practices that cross-cut conventional typology–for example, in preferences for ways of doing things. As Sackett puts it, "ethnicity lies as much in the manner in which a Chinese cook butchers a chicken as in a Mao jacket or a Ming vase" (1990:42; cf. McGuire 1982:162).

Sackett disagrees that most style is actively created and intentionally used by artisans as ethnic "messaging" to mediate boundaries, arguing instead that passively generated style carries latent iconic information to which meanings are only later assigned because people "automatically react symbolically" (1990:37). "Ethnic messages," he observes, "are far more often read than deliberately sent" (1990:37). This goes for archaeologists as well: Sackett is

explicit that "style which informs upon ethnicity is an etic perception of the observer"–that is, it is imposed upon the material culture of the archaeological record as the result of our own symbolic reactions to something that has been passively generated (1990:37). The exception to the rule is provided by decoration, or *adjunct form*, which Sackett sees as the product of active *iconological* style. In contrast to the information exchange approach, Sackett regards iconographic signalling as "a special case" that appears only occasionally against the much more pervasive background of ethnic style that flows from isochrestic behaviour (1985:157).

The most immediately obvious implication of Sackett's model of isochrestic variation is that it changes where we look for style–and, by extension, ethnicity–in the archaeological record. Rather than searching for style simply in decoration, we can look for it virtually anywhere–an especially attractive prospect given that "the overwhelming bulk of material culture consists of utilitarian functional forms bearing little or no decoration" (Sackett 1990:33-34). In Sackett's view, the total stylistic potential of an artifact's formal variation is considerable, since it may reflect what he considers to be ethnic choices regarding things like clay, temper, shape, manufacturing techniques, and so forth (1990:33-34). But while Sackett's approach opens up a range of exciting possibilities for the archaeologist, a consideration of some of its underlying assumptions suggests that it might not be able to tell us as much about past ethnicity as Sackett likely believed. Sackett's approach makes one-to-one correlations between unconscious, habitual practices and ethnic identities–in other words, he argues that isochrestic variation *is* ethnicity–and his emphasis on passive over active style suggests that ethnic identities tend to be more static than fluid. Although Sackett did acknowledge that practices were subject to change (1985:158), these factors reflect a view of ethnic identity as primarily primordial and coercive (e.g., *because* he cuts a chicken *this* way, Bo *is* Chinese) that we should by now recognise as problematic. There is no need to throw out Sackett's baby with the bath, however; habitual practices might still be profitably approached as the foundations upon which ethnic identities are likely to be built under certain circumstances (e.g., *because* he cuts a chicken *this* way, Bo might *consider himself to be* Chinese in the right context). Put another way, it could be said that isochrestic

variation "provides the resources for ethnic identity" (Shennan 1989:20; cf. Jones 1997:122). Patterns of passive stylistic variation in the archaeological record might therefore suggest scenarios in which ethnic identities had the *potential* to become salient, though they cannot prove that such identities *were* salient, as Sackett seems to argue. As we have argued in this and the preceding chapter, proving the salience of ethnicity requires more insight into the subjective experiences of group members than Sackett's approach can provide alone.

While Sackett explored passive style, most of his contemporaries followed Wobst's lead in focussing on active style. In the late 1970s and 1980s there was a new emphasis on material culture not as a product or output that *reflects* social entities at any or all levels, but as "an active constitutive element of social practice" (Conkey 1990:13). The study of style was seen as a way to understand "the contexts in which groups, or other sociocultural phenomena, are brought into existence" (Conkey 1990:13). Polly Wiessner, one of the major contributors to the literature during this period, expresses an active view of style which emphasizes the role of material culture in both creating and communicating information about identity. Wiessner's view is based on psychological theories that both individual and group identity are based on cognitive processes of comparison that provided the "mechanism underlying stylistic development and change" (David and Kramer 2001:183). Style provides a wellspring of information about such things as social boundaries and interaction, relationships between the individual and society, and status and power (Wiessner 1990:110).

Wiessner distinguishes between two types of active style: *emblemic style*, which is used to send a clear signal to a defined target population about the individual's conscious affiliation with a clear referent (usually a social group, though not necessarily an ethnic one), and *assertive style*, which is used to create a strong self-image and "carries information supporting individual identity" (Wiessner 1983:257-78). Wearing a uniform to identify oneself as military personnel is an example of emblemic style; wearing combat boots in order to look "cool" is an example of assertive style. While (as the example suggests) the categories may blur, Wiessner suggests that emblemic style will generate spatial patterns in material culture that provide information about boundaries; ethnic boundaries in particular are especially likely to emerge in cases involving access to resources (David and Kramer 2001:187).

Material culture associated with assertive style, on the other hand, will be randomly distributed and might therefore provide a "measure of degree of contact across boundaries" (Wiessner 1983:259). Emblemic and assertive styles are analogous to Sackett's iconological variation rather than isochrestic variation. While Wiessner agrees with Sackett that some formal variation in material culture is the result of isochrestic behaviour (1985:160), she considers isochrestic behaviour to be distinct from "stylistic" behaviour and seems to suggest that it cannot contribute to the formation of social identities because it is static; e.g., "while isochrestic behavior functions to make life predictable and orderly, stylistic behavior presents information about similarities and differences that can help reproduce, alter, disrupt, or create social relationships" (Wiessner 1985:161). However, as we have already noted, isochrestic behaviour is *not* necessary static, and might therefore have more potential to contribute to the formation of social identities than Wiessner suggests.

Jones observes that Wiessner's work, like that of her contemporary Ian Hodder (who will be discussed below), is especially important to archaeological studies of ethnicity not only because it treats ethnic groups "as self-conscious identity groups constructed through the process of social and cultural comparison *vis-à-vis* others, rather than as a passive reflection of cultural tradition as in normative archaeology," but also because this work recognises that ethnicity is likely to be intentionally expressed only in a select range of stylistic attributes which may be actively manipulated in the negotiation of social relations (1997:115-16). From a slightly different perspective, we can say that Wiessner's work is significant because she is one of the first style theorists to explore ethnicity from an instrumentalist perspective while also acknowledging the potential importance of psychological motivations in the individual's conscious manipulation of identity–an important improvement over Wobst's original approach. Jones's second observation regarding Wiessner's confinement of ethnic expression to a limited range of attributes might, at first glance, seem to be irreconcilable with Sackett's conclusion that we can look for style everywhere, but we must recall that two different kinds of variation are being considered here and that they are not mutually exclusive. In other words, material culture is full of messages to be read if we choose to do so (the products of isochrestic variation), and these messages might reveal the basis for ethnic identities in

habitual practices; however, consciously sent messages (products of emblemic-assertive/iconological variation) that might be associated with the emergence of such identities will only be found in some attributes.

Because Wiessner sees subjective perceptions of style and ethnicity as being critical, she is willing–unlike some of the other theorists discussed here–to acknowledge that archaeology alone may be insufficient to the study of ethnicity. She notes that "the choice of attributes in which to invest style" does not follow coherent principles but is rather determined by historical events (1983:273); the usefulness of an account of these events is therefore obvious, though Wiessner notes that "even in an ethnographic study with full information on history and context available" it will be difficult to discover style's symbolic meanings (1990:111). Wiessner therefore recognises that ethnographic or historical research is essential to the task of relating material culture to ethnic entities (David and Kramer 2001:189), as we have already established.

Around the same time Wiessner was developing her theories of emblemic and assertive style, Ian Hodder was also exploring the use of material culture and style in the creation of social identities. In a widely-cited *American Antiquity* paper (Hodder 1979) and in his groundbreaking *Symbols in Action* (1982), Hodder attacks conventional archaeological explanations of material culture patterning, adopts an instrumentalist approach stressing the manipulation of ethnicity to serve group interests in resource competition, and argues that material culture is best understood as a symbolic system that plays a role in constituting social practice.

Based on his own ethnoarchaeological fieldwork in Kenya's Baringo district, Hodder criticises the dominant attitude in archaeology that "material culture patterning is a distorted but predictable reflection of human behaviour" and goes on to demonstrate how some of the conclusions that this approach has generated are untenable (1982:11). As an example, with regard to the widely-applied "interaction theory of style" which suggests that greater interaction leads to similar stylistic patterning/blurring of boundaries (David and Kramer 2001:168), Hodder observes that his own work suggests that, if anything, intensity of interaction leads to more *marked* cultural differences (1979:447; 1982:65). Hodder also finds

that dispersed manufacture does not necessarily lead to greater localization in styles than centralised manufacture, as is commonly supposed; in fact, his example using Baringo metalsmiths produced almost completely opposite results (1979:447; 1982:62-63). In sum, Hodder rejects the tendency to make overly simplistic associations of material culture with ethnic groups, observing that "as a result of long-term historical processes, different ethnic groups may have very similar material culture, while the same ethnic group may have a varied material culture in an ecologically varied area" (Hodder 1979:452). Hodder does not deny that material culture may become differentiated in order to serve as ethnic markers (especially when resource stress leads to strong boundaries between groups); rather, like Wiessner he argues that only *some* artifacts or traits of artifacts will become intentionally differentiated (in part because even competing groups are typically not completely isolated from each other), and that it is impossible to *predict* the selection of these (Hodder 1982:187, 217). In his own fieldwork, for example, he found that some categories of pots were used as ethnic markers and produced "distinct spatial patterns" that left "a distinctive and recognisable trace in the archaeological record" while other categories of pots and a completely different artifact class, stools, were, not ethnically salient (for no predictable reason) and left completely different archaeological signatures (Hodder 1982:41, 51).

If the conventional assumptions about patterning that Hodder attacks do not hold true, then how might material culture differences be explained? Hodder's answer is to take an explicitly instrumentalist approach which accepts that material culture symbolic of ethnic identity serves a purpose in resource competition, and is "used by groups to communicate within-group corporateness in reference to outsiders. The greater the competition between groups for resources, the greater the likelihood that material culture will play a part in the maintenance of internal cohesion" (1979:446). According to this approach, lack of competition will typically lead to general similarities in material culture (even over very wide areas), while greater economic stress will often generate greater within-group conformity, greater conflict between groups, and therefore potentially greater differences in material culture which may be archaeologically visible (Hodder 1979:447; 1982:26). However, it is important to note that Hodder only applies these conclusions to these particular

circumstances and is therefore not concluding that material culture will always "reflect" behaviour in this fashion. As David and Kramer note, "Hodder is not prepared to argue that greater between-group stress will always be expressed in marked material boundaries" (2001:193). Hodder specifically notes that relationships between resource competition and ethnic distinctions in material culture cannot be predicted without reference to social organisation, and that "the particular relationship identified in Baringo could not be used as a model for societies which are organised in different ways" (Hodder 1982:73). Models attempting to predict relationships between ethnicity and material culture must therefore take into account the "social and ideological dimensions" of "links between material culture and human behaviour"; they must be "both complex and broad" (Hodder 1982:85).

Hodder argues that "material culture differences between tribes can only be understood if material culture is seen as a language, expressing within-group cohesion in competition over scarce resources" (1979:447). For Hodder, this symbolic quality is what allows material culture to participate in the constitution of social practice. As Hodder notes in explaining the title of his book, symbols are in action because "symbols do not 'reflect' but ... play an active part in forming and giving meaning to social behaviour" (1982:12). Hodder's views are similar to Wiessner's in this respect, though as Jones notes, he differs from Wiessner in taking a broader view that symbolic structures permeate "*all* aspects of cultural practice and social relations in the differentiation of ethnic groups" (1997:116).

Hodder would therefore be less dismissive than Wiessner regarding the value of isochrestic behaviour to contribute to the formation of social identities, and is in fact quite overt in noting that ethnic identity can also be unintentionally expressed in items that are not produced for emblemic or assertive purposes–that is, "in mundane utilitarian items as well as in decorative items" (Jones 1997:115). Hodder's prime example of this involves Baringo hearths, the positioning of which, he discovered, was apparently more constrained in situations of greater socio-economic stress where the group itself is "under greater tension and demands greater conformity" (1982:55). As he observes, "the internal world, as well as the external world, is more ordered and clearly categorised.... There is an internal desire for 'everything to be in its place'" (1982:55). Hodder notes that this contrasts with Wobst's

earlier hypothesis stressing the importance of visibility in artifacts intended to express identity differences (1982:55; cf. Sterner 1989)–not to mention Wobst's limited view regarding the potential audience for the messages communicated through material culture, as we have already noted.

Hodder's work, in part because it draws to a greater extent on contemporary ethnicity theories than that of most of the other archaeologists discussed here (Wiessner appearing to be something of exception) demonstrates that studying ethnicity through archaeology is a far more complex task than most of his predecessors had assumed. His conclusion is that while archaeologists will never be able to identify all past ethnic groups (since many will have likely used competitive strategies that did not involve using material culture to signal their affiliation and which might only be explained within a historical context), they will be able to identify *ethnicity* "if by this is meant ... the mechanism by which interest groups use culture to symbolize their within-group organisation in opposition to and in competition with other interest groups" (Hodder 1979:452; cf. 1982:187). For Hodder, this is more useful than identifying specific groups anyway. "To identify categories of society," he writes, "does not lead to an understanding of causal relationships between these dimensions or to comprehension of the reasons for societal change, since evolution is reduced to something that takes place between stages" (Hodder 1979:452). Hodder's work, then, represents perhaps the most sophisticated attempt to understand the relationship between ethnicity and material culture that we have yet seen, though it does not account for the production and transformation of ethnic identity (Jones 1997:116) and focusses almost exclusively on material culture as product while paying little attention to the processes that bring material culture into existence.

These processes are central to the anthropology of technical systems, an approach to studying material culture that has become increasingly important over the last two decades and which differs from traditional material culture studies in that it focusses on the techniques used to produce material culture (such as those used by Sackett's hypothetical Chinese cook) rather than their material effects or "the circumstances and social consequences of their application" (Lemonnier 1986:147). This approach, which was

originally advocated as part of the French tradition of *technologie* by archaeologists like Pierre Lemonnier, derives from the theories of André Leroi-Gourhan, whose own work was in turn based on that of Marcel Mauss (David and Kramer 2001:140; Stark 1998:2-5). Leroi-Gourhan suggested that human behaviour is characterised by deeply embedded *chaîne opératoires*, or "operational sequences" (Stark 1998:5). A *chaîne opératoire* comprises "a technical process composed of a series of operations that result in the production of an object" (Dietler and Herbich 1998:262). The selection of particular *chaîne opératoires* to complete tasks produces variation, which is therefore a key to exploring cognitive processes (Stark 1998:2). The relationship to Sackett's isochrestic variation should be obvious: the various factors that constrain the range of options that can be pursued to complete a task (i.e., knowledge, skill, training–the factors that constrain isochrestic variation) can also be seen as constraining the selection of *chaîne opératoires*, which might be thought of as sets of options assembled to complete particular tasks. Like isochrestic variation, the habitual practices associated with operational sequences might therefore be thought of as providing the resources for ethnic identity rather than being direct correlates of ethnicity.

The archaeological investigation of technical systems emerged in part in reaction to the limitations of previous research that focussed on "decorative" style to the detriment of functional and especially technological variation (Dietler and Herbich 1998:237; Stark 1998:4-5). Proponents of this approach like Michael Dietler and Ingrid Herbich instead argue for "a more integrated view of material style encompassing patterning in technological, formal and decorative aspects" as "an essential prerequisite to developing a social understanding of material culture" (1998:238). In the anthropology of technical systems approach, style is not simply an attribute of finished products but rather originates in the choices made by individual agents during the production sequence (Gosselain 1992:560; Stark 1998:6). Individuals can typically choose from a number of different though habitual behaviours and techniques to complete most steps in the sequence–Lemonnier calls these options *variants*, "different ways of doing the same thing" (cited in Gosselain 1992:560)–and it is the selection of these options that produces variability in material culture patterning (Stark 1998:6). The technical systems approach flatly contradicts deterministic approaches (like that used in

ceramic ecology, for example) that suggest that most technical choices (or even entire production sequences) are socially neutral inasmuch as they are governed by environmental pressure or other external constraints (Stark 1998:4-5). On the contrary, as Gosselain notes, "in every technological system, there are no external constraints sufficiently tight to allow only one, or at the most, a few options which would *dictate* the pattern of the system" (Gosselain 1992:560). Gosselain illustrates this in a paper that uses ethnographic evidence to shoot holes in some of the fundamental tenets of the ceramic ecology approach, successfully disputing the idea that "the manufacture and subsequent use of vessels is governed by so many ecological and physical constraints that technical behaviors are better explained as adaptive strategies rather than as social (or cultural) choices" (1998:79).

It is perhaps not surprising, given the way in which the technical systems approach resonates with Sackett's work, that at least some of the proponents of this approach are similarly critical of approaches stressing the use of style as a medium of communication. Dietler and Herbich, for example, observe that while "style is always the product of purposeful human action, it cannot be simply understood, or 'read,' as the consciously intended product of that action" (1998:236). To treat it otherwise–that is, to treat material culture as a form of text in which intentionally encoded meanings can be read–is to focus only on the end product and therefore ignore the entire *chaîne opératoire,* which provides opportunities for objects and techniques to be imbued with meaning, consciously or not (1998:243-44). The presence of the operational sequence means that the relationship between "the intentions of the maker of an object and the significance attached to that object in the context of consumption" cannot help but be much more complex, ambiguous and indirect than the relationship between the intentions of the writer of a text and the reading of the text (Dietler and Herbich 1998:244). Because they ignore this fact, approaches like Hodder's that treat material culture as a language amenable to semiological analysis are seen as being flawed; a more appropriate approach is to treat material culture as *evoking* rather than as *meaning,* as participating in signification processes whereby they provoke emotional and intellectual responses and are invested with various kinds of significance by their users and makers (Dietler and Herbich 1998:244). This approach does not seem to deny

that artifacts can play an active role in constituting social behaviour so much as it makes clear that they are only able to play this role because agents invest them with the significance to do so.

The patterns of variation that are produced by *chaîne opératoire*-oriented studies are often quite different from those patterns generated by studies focussing on decorative variation. According to Stark, this kind of variation "generates more stable and resilient patterning of social boundaries"–habitual practices being slow to change–than does variation based on decorative styles (1998:9). But are these social boundaries necessarily "ethnic" boundaries? In some cases, possibly, just as in some cases decorative variation does correlate with definable ethnic groups; however, Lemonnier's ethnoarchaeological work among the Anga suggests this will not always be the case, since he found that patterns of technological variation could not be grouped into neat "tribal" packages and often overlapped different groups (1986). Stark would likely also disagree with identifying the social boundaries generated by technical variation with ethnic boundaries, since she takes the approach that ethnicity is "a modern concept that eludes translation into archaeological terms" (1998:10). However, the failure of technological variation to generate patterns that are invariably identifiable with ethnic boundaries does not suggest that these patterns are therefore somehow "meaningless", nor does it provide a rationale for falling back on the earlier assumption that decorative variation is identifiable with ethnic boundaries: rather, it should serve as a reminder that social realities are very complex, and can only be hinted at by the study of different kinds of variation in material culture alone. Patterns of variation can suggest the existence of various social boundaries in the past, but a historical context is still required if we wish to explore the complex relationship between these boundaries and the emergence of ethnicity.

CONCLUSION

While they are not without their individual weaknesses, the various theoretical approaches that we have surveyed in this chapter have each made important contributions

to our understanding of how to approach ethnicity through material culture. Although based on simplistic primordialist conceptions of ethnicity, early processualist approaches reoriented examination from artifacts themselves towards the *attributes* of artifacts. Wobst introduced the important concept of information theory and the active role of style, while Sackett focussed attention on how style can originate in practices as well as in things and established that identity may be unconsciously as well as consciously expressed. Wiessner's work stressed the need to consider subjective conceptions of ethnicity and the role of the individual in constructing ethnic identity, focussed attention on how material culture participates in the creation of culture, and reiterated the need for a historical perspective in studying ethnicity. Hodder demonstrated the weakness of traditional conceptions regarding the relationships between material culture and ethnicity, examined material culture as symbols actively creating culture, and applied a systematic instrumentalist anthropological approach to the study of ethnicity. And finally, the technical systems approaches called for a more sophisticated understanding of the relationship between practices and style, stressed the importance of the choices made by individual agents, pointed to flaws in approaches that treat material culture as a communication system, and reiterated the complexity of social realities. Looking for patterns, it is apparent that approaches based (consciously or not) on a primordialist view of ethnicity tend to treat style as passive and as originating in ways of doing. Those that take a more instrumentalist approach (usually more intentionally) tend to treat style as active and are more inclined to focus on decorative style, since visible decoration is considered to be more effective for communication. Not surprisingly, theorists writing more recently (like most of those focussing on technical systems) are more likely to take the middle ground: they view ethnicity as having both instrumental and primordial dimensions and see style as the product of both conscious and unconscious processes–as something that should be examined from an integrated perspective that consider patterning in the technological, formal and decorative aspects of material culture.

This review has also confirmed the argument made in chapter 3 that it is no simple thing to connect ethnicity to material culture in the absence of documentary evidence, a fact acknowledged especially by theorists who are willing to admit that ethnicity can be

manipulated instrumentally. The problem is aggravated because of the lack of study of relationships between material culture and ethnicity–not just in archaeology, but in anthropology in general (Jones 1997:12). Buchignani suggests that while archaeologists could use guidelines to determine what kinds of traits "are likely to be symbolically relevant to group boundaries," anthropology cannot usually suggest any, ironically because boundaries and markers are "typically so clear in ethnographic contexts" that anthropologists focus on the *use* of markers rather than on markers themselves (1987:20-21). This lack of understanding of the relationship between material culture and ethnicity makes it difficult for archaeologists, working from archaeological evidence alone, to identify situations in which ethnicity may *not* have been salient (the default assumption often seems to be that it always *is*) or in which patterning more prominently reflects other past activities, processes or social identities (Emberling 1997:313; Jones 1997:107; McGuire 1982:164; Shennan 1989:12). Regarding the salience of ethnicity, ethnoarchaeological studies like Hodder's (1982) in particular have been useful in demonstrating that ethnicity is not always the most prominent social identity (e.g., David et al. 1988; DeCorse 1989; Stark 1992), a conclusion also supported by ethnohistorically-informed archaeological studies (e.g., Pollard 1994). With regard to other factors that may affect material culture patterning, these can include such things as economic status, prestige, class, religion, occupation, gender and environment (Emberling 1997:319; McGuire 1982:164; Osborn 1989:154). For example, Emberling observes that elite emulation of prestigious foreign cultures may explain distinct ceramic assemblages found in parts of the Southeast Maya periphery east of Copán, whereas an ethnic-oriented interpretation might associate different assemblages with ethnic invaders and conquered locals (1997:320; cf. Wonderley 1986). In another example, Osborn (1989) found that dramatically different assemblages of material culture found in Venezuela and Colombia did not correlate with different ethnic groups (the easy conclusion), but rather were produced by members of a single group, the U'wa, living in different environmental zones at different times of the year.

Complicating matters even further is that even in past situations where ethnicity is known to have been salient, the material culture that is available to be studied by

archaeologists may not be the most appropriate to the study of this salience. While the arguments of Sackett, Hodder and the various proponents of the technical systems approach provide hope that we can find supporting evidence of ethnicity in many different classes of material culture–especially by focussing on techniques–the situational and historically constituted nature of ethnicity makes it impossible to predict the categories or attributes of material culture that will most prominently reflect and/or help to shape ethnicity in any given context (Buchignani 1987:20). Artifacts like ceramics that are conveniently preserved in the archaeological record may allow us to investigate technical systems and identify habitual practices that might have provided a potential basis for the formation of ethnic groups–they may even be more *likely* than other kinds of artifacts to be chosen as ethnic markers (cf. David et al. 1988)–but their preservation–even if they are found in statistically meaningful numbers (Buchignani 1987:20)–is no guarantee that their makers chose to use them as ethnic emblems in preference to, say, funny paper hats.

To repeat our standard refrain: archaeological approaches to ethnicity must therefore integrate history in order to provide a context for the emergence and maintenance of ethnic identity. In the following chapter, we will see how this might be accomplished using an approach based on a practice theory of ethnicity.

Chapter 5
PRACTICE THEORY AND NICARAGUAN ETHNICITY

Primordialist approaches to ethnicity, as we observed in chapter 3, take the position that ethnicity is static, an innate aspect of identity fulfilling only the intrinsic human need to belong. Instrumentalist approaches, on the other hand, treat ethnicity as situational and dynamic, something that is created and maintained only to serve common group interests. Primordialist models consider changes in social contexts to be critical to ethnicity, while instrumentalist models stress the importance of changing political and economic contexts. While there are merits to both approaches, neither alone seems to adequately explain ethnicity, and part of the reason for this seems to be that neither approach provides "an adequate theory of the relationship between ethnicity and culture" (Jones 1997:87) capable of explaining how people recognise the common sentiments or interests that are presumed to underlie their claims to common identity (Bentley 1987:26; cf. Jones 1997:82-83). It is in order to transcend the dichotomy between these approaches and address these mutual weaknesses that G. Carter Bentley proposes a practice theory of ethnicity based on theories developed by Pierre Bourdieu in his *Outline of a Theory of Practice* (1977).

PRACTICE THEORY, HABITUS AND ETHNICITY

The lynchpin of Bourdieu's practice theory is the concept of *habitus*:

> The structures constitutive of a particular type of environment ... produce *habitus*, systems of durable, transposable *dispositions*, structured structures predisposed to function as structuring structures, that is, as principles of the generation and structuring of practices and representations which can be objectively 'regulated' and 'regular' without in any way being the product of obedience to rules, objectively adapted to their goals without presupposing a conscious aiming at ends or an express mastery of the operations necessary to attain them and, being all this, collectively orchestrated without being the product of the orchestrating action of a conductor. (Bourdieu 1977:72)

According to this argument, then, human consciousness is formed by the environment, by what Bentley calls "the objective conditions of existence" (1991:174). Individuals are

disposed to act in ways generally consistent with the world in which they are brought up, though they are typically unconscious of the dispositions generated by this context. Bentley extrapolates from this to argue that a "subliminal awareness of objective commonalities in practice"–that is, a subliminal awareness of the shared dispositions of habitus–provides the basis for conscious feelings of ethnic affinities (Bentley 1987:27). In this respect, practice theory seems to provide the objective grounds for ethnic subjectivity that primordialist and instrumentalist approaches fail to identify, and can therefore be seen as transcending the objectivist/subjectivist dichotomy (Bentley 1987:27; Jones 1997:88).

Because the practices and representations generated by habitus appear to be regulated though they are not the product of rules, and "objectively adapted" to goals that nevertheless have not been consciously set, it follows that the "rational", interest-oriented behaviour thought to underlie instrumentalist ethnicity may in fact be "largely habitual, an acting out of objective constraints encoded in unexamined assumptions about what is reasonable and unreasonable" (Bentley 1987:28). In this respect, coordinated action within ethnic groups does not need to be entirely explained in terms of conscious elite exploitation, as in some instrumentalist approaches. As Bourdieu notes, there need not be a conductor. Rather, it is more plausible that ethnic leaders are simply subject to the same objective constraints of habitus as their followers, and that their exploitation of their followers is as often unconscious as conscious (Bentley 1987:41, 43).

Individuals begin to experience the constraints of habitus early in life, practically but unconsciously mastering the classificatory schemes of the habitus through a process similar to the practical but unconscious mastery of language (Bourdieu 1977:88; cf. Bentley 1987:28). Bourdieu notes that "disproportionate weight" is given to early experiences, since the first dispositions learned "produce the structures of the habitus which become in turn the basis of perception and appreciation of all subsequent experience" (Bourdieu 1977:78). While habitus continues to be modified by changing contexts and new experiences throughout the individual's life–e.g., habitus acquired in family "underlies the structuring of school experiences", while "habitus transformed by schooling, itself diversified, in turn underlies the structuring of all subsequent experiences", and so on (Bourdieu 1977:87)–the foundational

and unconscious nature of early dispositions helps to explain why it is virtually impossible to intentionally alter one's dispositions, and why different generations with "different definitions of the impossible, the possible, and the probable" come into conflict over practices or aspirations that are experienced by one group as "natural or reasonable" and by the other as "unthinkable or scandalous" (Bourdieu 1977:78). While this may seem rather deterministic, it must be remembered that habitus conditions a range of options for behaviour, rather than determining specific behaviours: the options available to individuals, while restricted, are still great. Bentley observes that the habitus produces "an infinite variety of surface expressions" or "personal styles", all of which will be comprehensible and "recognizable as being of a single type," to individuals "competent in the underlying code", though they will rarely be able to articulate "the objective bases on which the judgement of similarity is made" (Bentley 1987:29).

Bentley argues that it is the subliminal awareness of commonalities that give members of ethnic groups "their sense of being both familiar and familial to each other", and that it is therefore no accident that ethnic affinities are often expressed in terms of kinship and descent (1987:33). This familial feeling accounts for "the strong psychological attachments often associated with ethnic identity and ethnic symbolism" (Jones 1997:91), attachments that primordial arguments simply take for granted and which instrumental arguments are at a loss to explain. The focus on commonalities, Bentley notes, is an important distinction between his practice theory of ethnicity and other approaches which argue that ethnicity emerges from categorical distinctions between groups and therefore view "affinities within ethnic categories as a consequence rather than a cause of social and symbolic oppositions" (Bentley 1987:35-36). In such approaches, ethnic identities are treated as "empty vessels whose content is anchored externally in conventional but arbitrary oppositions between categories" (Bentley 1987:35-36). In contrast, Bentley considers the contents–the commonalities–to be as important as the boundary that surrounds them (Banks 1996:46) and therefore "posits a different dialectic whose poles are constituted by affective affinities based on shared habitus and symbolic differentiations both cognitively and affectively generated" (Bentley 1987:36). According to this approach, while notions of shared descent are

"symbolically constructed fictions", conceptions of ethnic identities are not entirely arbitrary (Bentley 1987:36).

Practice theory suggests a new way of looking at the objective context in which identity is formed and the subjective consciousness of identity: instead of focussing on the relationship between the two (the approach taken by most models of ethnicity), the focus should be rather on how each relates individually to the intervening variable of habitus (Bentley 1987:40). This entails investigating not only the evolution of habitual responses to environmental constraints, and how these responses are passed on to group members, but also how the experience of shared habitus is symbolised. These two processes constitute a dialectic relationship that shapes and gives significance to social life (Bentley 1987:40); the challenge is to maintain this dialectic of structure and agency without "subsuming human will under endlessly reproducing structures" or "treating history and human agency as nonproblematic causes shaping social life" (Bentley 1991:174).

Bentley's practice theory of ethnicity, then, seems to accomplish several useful things. It accounts for both the situational manipulation of and emotional dependence upon ethnic identities that has confounded other theorists (1987:34). It raises questions about the nature of rational behaviour, one of the cornerstones of instrumentalist arguments. It denies that ethnic symbols exist only to serve either specifically instrumentalist or primordialist ends–though it does not deny that these symbols can be manipulated by individuals to serve these ends (Bentley 1987:48). And finally, practice theory suggests a new approach to examining the dialectical relationship between "the objective conditions of existence" and the subjective consciousness of identity that acknowledges the influences of both structures and human agency. But despite these achievements, Bentley's approach remains problematic, owing largely to his stance that ethnicity is generated by commonalities. Siân Jones argues that Bentley's approach resurrects a traditional and unsatisfactory view of ethnic groups as constituting "bounded social entities internally generated with reference to commonality rather than difference" (1997:92). This is because Bentley, in failing to examine the relationship between shared subliminal dispositions and "the communication of cultural difference leading to the reproduction of ethnic categories", leaves the habitus-ethnicity

relationship obscure and gives short shrift to "qualitative variation in the kinds of cultural difference that signify ethnic identity" (Jones 1997:93). For practical purposes, then, Bentley treats ethnicity *as if* it were a reflection of the habitus, rather than using the habitus only as the *basis* for conscious feelings of ethnic affinity, as he claims (Jones 1997:93). But to suggest that ethnic identities are based primarily on "a subliminal awareness of *likeness* with others of similar *habitus*" ignores the fact that feelings of ethnic affinity and common experience do *not* always co-vary, and that many ethnic groups are constituted by individuals from diverse backgrounds (Jones 1997:93; Yelvington 1991:168).[4]

Bentley's focus on commonality leads him to neglect the role of "ethnic others" in the social construction of ethnicity (Jones 1997:94; Yelvington 1991:158). If habitus only partially determines ethnic identity, then it seems likely that other determining factors can be related to the practices of those outside the ethnic group (Yelvington 1991:163). Jones argues that the formulation of ethnic consciousness and categories, rather than being dependent on the kind of social experience and knowledge that is part of the habitus, instead involves a *fundamental break* with that kind of experience and knowledge (1997:94). She explains this by invoking another concept from Bourdieu that is not used by Bentley: *doxic knowledge*, which might be thought of as the only form of social knowledge possessed by a group that is ignorant of other forms of social knowledge possessed by other groups, or even of the possibility that other forms might exist (Jones 1997:94-95; Bourdieu uses the concept to talk about social classes, but it can be applied to ethnic groups). When a group possessing doxic knowledge encounters ethnic others, the trauma of the experience challenges the very way of life, raising the possibility of different forms of social knowledge or belief where alternatives had previously been inconceivable, and exposing the arbitrary nature of cultural practices that had previously seemed "natural." Doxic social knowledge loses the character of a natural phenomenon and new forms of knowledge emerge: *orthodoxy*, which attempts "to deny the possibility of alternatives at a conscious level", and *heterodoxy*, which acknowledges "the existence of a choice between different forms of knowledge and their evaluation through

[4]The creoles of Sierra Leone studied by Cohen (1981) are an excellent example of such a group.

explicit critiques" (Jones 1997:94-95). The break with doxic knowledge leads to "the emergence of an ethnic consciousness, and the categories and symbols it entails.... In effect a set of cultural practices and beliefs which had previously formed part of the domain of *doxa* becomes reified as a coherent and concrete object in opposition to specific 'others'" (Jones 1997:95).

Jones argues that "the extent to which ethnicity is embedded in pre-existing cultural realities represented by shared *habitus*" is much more variable than Bentley presumes because the degree of cultural transformation that can result from interaction between groups is also variable (1997:96). While there may be a great deal of contiguity between ethnicity and the habitus in situations where interaction leads to little cultural change (which seems to be more likely in cases of interaction involving small-scale societies like the Kabyle, the group upon which Bourdieu based his conception of the habitus), it is less likely to occur in situations where there is considerable social dislocation and subordination (which would seem to be a more common occurrence when complex societies are involved), such as when one group has a great deal of power over another or when a group of immigrants from diverse backgrounds are brought together in an urban context (Jones 1997:97). Time is also a factor: Jones points out that the processes by which cultural differences are objectified and embodied within the habitus and which lead to the manifestation of ethnic identities are ongoing and subject to changing circumstances. There will therefore be "fluctuations over time in the correspondence between the representation of a particular ethnic identity, in terms of objectified cultural difference, and the cultural practices and historical experience of the people involved" (Jones 1997:97). The emergence of the ethnic group and the corresponding objectification of cultural differences, therefore, is dependent on the interaction of habitus with historically situated social conditions (Jones 1997:120). For these reasons, Jones argues that Bentley's approach, like the traditional approaches it resurrects, is flawed in conceptualizing the ethnic group as "a discrete, internally homogeneous entity characterized by continuity of tradition" and ignoring "the dynamic and creative processes involved in the reproduction and transformation of ethnicity" (1997:100).

APPLYING PRACTICE THEORY IN ARCHAEOLOGY

The potential value of practice theories has been recognised by many archaeologists (e.g., David and Kramer 2001:58; Dietler and Herbich 1998:246; Hodder 1991:76-77) who, like Jones, acknowledge that material culture does not simply reflect but participates in the constitution of social practices. Despite her own disagreements with Bentley regarding the generative principle of ethnicity, Jones finds his unique take on Bourdieu's concepts of practice theory and habitus to be a useful starting point for developing an archaeological approach to ethnicity (1997:99). The durable dispositions of habitus, as archaeologists interested in the technical systems approach have also recognised (e.g., Dietler and Herbich 1998; Gosselain 1992, 1998; Stark 1998), guide the techniques of the *chaîne opératoire* that are the source of distinct styles of technological, formal and decorative variation in material culture, just as they guide other patterns of social activity (Dietler and Herbich 1998:246). Echoing Hodder and Wiessner, Jones describes material culture as "a constitutive dimension of social practice in that it both structures human agency and is a product of that agency" (1997:117). All material culture, not just selected classes, has the potential to actively structure human agency precisely because it is endowed with meaning by social agents and the practices associated with its production and use. This meaning, which is culturally specific and varies in time depending upon social history and contexts of use, in turn influences successive practices and interpretations (Jones 1997:117). Because the "meaning" of material culture is so dependent upon context, it cannot be derived through purely archaeological methods, and requires the application of a contextual and historical approach to reveal the social practices in which artifacts participated in the past (Jones 1997:119).

The relationship between material culture and habitus means that the selection of ethnic markers, styles and cultural stuff in general is not as arbitrary as instrumentalist approaches suppose, even if the process remains objectively unpredictable and even if markers are not "fixed" in their meanings through time and space. As ethnic categories emerge, habitus disposes individuals towards the selection and objectification of a unique group of cultural items for the self-conscious signalling of social identity from a range of cultural practices that

had previously seemed natural (Jones 1997:120). While not all "natural" practices will be objectified, those that are may continue to correlate with those that are not because of the orchestrating effects of habitus, particularly when contiguity between habitus and culture remains high; this explains why Hodder (1982) found correlations not only between ethnic identity and items chosen for self-conscious ethnic signification (such as some types of pottery), but also between ethnic identities and "dimensions of material culture that are not part of the overt signification of ethnicity" (such as other types of pottery and hearth positioning) (Jones 1997:121; such nice correlations might be more difficult to find in situations where the origins of the ethnic group are more convoluted). Sackett, as we have seen, would consider such apparently unintentional and "meaningless" consistency in material culture variation to be the product of isochrestic variation, but while isochrestic variation may seem comparable to habitus, Jones argues that it really "constitutes a transformed and congealed representation" of the habitus's generative structure, inasmuch as Sackett's approach denies isochrestic variation the kind of active constitutive role that habitus is acknowledged to play (Jones 1997:122).

If habitus produces co-variation in material culture patterns, it follows that the identification of such co-variation in the archaeological record should allow archaeologists to infer situations in which a common habitus *may* have provided the resources for the formation of an ethnic group. However, it is another thing entirely to attempt to infer ethnicity directly from co-variation in the absence of a historical context (as Sackett does in inferring ethnic groups from isochrestic variation), because ethnicity is not static, and neither is material culture. As Jones observes, "ethnic categories may persist, whilst the material culture involved in the conscious signification of these categories changes, and likewise the ethnic referent of particular styles of material culture may change, whilst the styles themselves remain the same" (1997:122, 123). In other words, the relationship between material culture and ethnicity is not fixed, even in situations where there appears to be great contiguity between ethnicity and habitus.

Jones acknowledges that the "intangible and fleeting" relationship between ethnicity and material culture is a problem for archaeologists (1997:124). While it does seem that ethnic

boundaries were more likely to have been invoked under some conditions than others (as in situations involving resource competition, as we have noted), the culture-specific nature of ethnic symbolism makes it impossible to confirm this based on archaeological evidence alone. The only solution seems to be to draw upon independent evidence that can relate material culture to past identity and modes of behaviour (Jones 1997:124-25). Jones writes:

> ... the way in which particular styles of material culture are meaningfully involved in the articulation of ethnicity may be arbitrary across cultures, *but it is not random within particular sociohistorical contexts*.... a broad understanding of past cultural contexts derived from a variety of sources and classes of data is an essential part of any analysis of ethnicity in archaeology. In particular, it is necessary to examine modes of social interaction and the distribution of material and symbolic power between groups of people, because ... ethnicity is a product of the intersection of similarities and differences in people's *habitus* and the conditions characterizing any given historical situation. (Jones 1997:125-26)

In sum, Jones's approach can be seen as combining practice theory with the strengths of the style theories and other archaeological approaches to ethnicity discussed in the previous chapter. By incorporating the concept of the habitus, it acknowledges the role of both structure and individual agency in the production of material culture and style (in this respect bridging different views regarding style as either active or passive), encourages the study of production practices as well as product, and provides a better explanation for how *all* material culture actively participates in the constitution of social reality. Jones's approach clarifies why differences are as important as similarities in the creation of ethnic categories and suggests that while it is possible to infer situations ripe for ethnic group formation from the co-variation in material culture generated by habitus, it is problematic to directly correlate habitus with ethnicity because of the transformations that may result from interactions between different groups. That Jones's practice theory does not provide an enumerated list of potential material correlates for ethnicity or guidelines for predicting specific ethnic markers is not a weakness of the approach, but rather a reflection of the fact that ethnicity is simply too complex a phenomenon to be accessed through the study of archaeological remains alone.

At the beginning of chapter 3, I remarked that in order to investigate the ethnic groups of ancient Nicaragua, we needed to first understand the relationship between ethnicity and

material culture. Now that we are equipped with a useful theory about the nature of that relationship, we can now return to our original problem.

APPLYING PRACTICE THEORY IN GREATER NICOYA

Ethnohistoric Accounts of Ethnic Groups

Applying the principles of the practice theory outlined here, it is obvious that any effort to identify ancient Nicaraguan ethnic groups–groups of people who differentiated themselves from surrounding groups–should begin not with the archaeological record, but rather with ethnohistory, since it is through ethnohistory that we will come to understand the contexts in which ethnic differentiation occurred. As observed in chapter 2, ethnohistoric sources relate the presence of numerous distinct groups living in different parts of Greater Nicoya at the time of contact, delineated at least in part according to linguistic criteria. Many of these smaller groups seem to have been sub-groups of two larger ethnic groups that originated somewhere in Mexico: the Oto-manguean Chorotega and the Nahua Nicarao. Both groups appear to have occupied the Rivas area at different points in its history, though ethnohistory suggests that the Nicarao controlled the area south of the Río Ochomogo by the time of the Conquest.

It has been suggested that Spanish accounts playing up the generically "Mesoamerican" character of these groups must be read with a particularly critical eye since it was in the interest of a chronicler like Gónzalez Dávila looking to make a name for himself to discover and report "another Yucatan" (e.g., Abel-Vidor 1981, 1986; Lange et al. 1992). Yet even a brief summary of ancient Nicaraguan cultures reveals numerous similarities between Mesoamerica and Greater Nicoya that extend beyond linguistic connections, especially in the case of the Nicarao, for whom the sources[5] provide more information.

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[5]According to Healy (1980:24), the primary sources for the information on ancient Nicaraguan cultures summarized by Lothrop (1926), Chapman (1974), Healy (1980) and other authors are Oviedo (1851-55) and Peter Martyr D'Anghiera (1964). Large portions of Oviedo's work were translated into English

Settlement Patterns and Architecture. While not necessarily identical, the organisation of Chorotegan and Nicarao settlements like Managua (Chorotega) and Tecoatega (a Nicarao community of unknown location) appears to have been quite similar in ways that were not markedly different from the organisation of Mesoamerican settlements (Chapman 1974:20-23). Nicarao communities in particular ranged in size from a few hundred to 20,000 inhabitants, were typically spaced between 15 and 30 kilometres apart, and were grouped into provinces (the largest of which had a circumference of 830 kilometres) governed by a "*cacique o señor principal*" (Chapman 1974:18). Chorotegan communities reached equally impressive sizes: Managua, the largest Chorotega community reported by Oviedo, had a population of 40,000 (Chapman 1974:81). Communities associated with both groups were typically organised around numerous widely dispersed plazas surrounded by the longhouses of local rulers and elites, council halls (*galpón* in the Nicarao language), and/or adobe-faced stepped platforms or mounds for performing human sacrifices (Abel-Vidor 1986:393-94; Chapman 1974:18; Healy 1980:25-28).[6] The presence of streets is noted, though these are not described in detail anywhere (Chapman 1974:20).

There is no ethnohistoric evidence of any significant differences between Nicarao and Chorotega buildings. Common houses were roofed with straw and leaves but had no walls (Chapman 1974:20). Elite longhouses were somewhat more elaborate, featuring pole and beam construction (stone seems to have been rare as a building material) with thatched or cane roofs and packed earth floors (Healy 1980:25-28). These longhouses could be as much as 100 paces long and were typically located on raised mounds approximately a metre in height. They were low and windowless, apparently as a defence against mosquitos. Longhouses appear to have been primarily used as sleeping quarters, although Oviedo reports that the wives of the cacique of Tecoatega and their attendants remained inside such closed

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by Lothrop and are reprinted at length in Healy (1980).

[6]The plaza of Tecoatega originally described and illustrated by Oviedo and reproduced in Healy (1980:27, Figure 6) in fact appears to have been rather atypical of Nicarao plazas, inasmuch as it does not include any buildings dedicated to religious purposes.

longhouses during the entire day (Chapman 1974:22), a situation which cannot be imagined to have been particularly comfortable. In Tecoatega, daily tasks such as grinding maize were performed under flat-roofed porches or porticos similar in dimension to the longhouses but open on all sides; similar porches provided shelter for the cacique and his court.

Subsistence and Economic Practices. Nicarao and Chorotegan economic practices–including subsistence practices, craft specialisation and commerce–were also similar in most respects (Chapman 1974:25). Men appear to have been responsible for most agricultural labour (Chapman 1974:42). Farming depended on seasonal rains, though limited manual irrigation was applied during dry spells (Chapman 1974:25-26). Crops cultivated by the Nicarao in particular (and seemingly by the Chorotega as well) included maize, beans, squash, sweet yucca or cassava, tobacco, cotton, hemp, honey, *cadañero* and *nequén/henequén* (a type of agave), as well as various types of fruit trees, including brazil, *zapote*, fig, *níspero* and cacao (Andagoya 1865:35; Chapman 1974:25-26). Maize was the primary ingredient in "*tortas grandes delgadas é blancas*", a Nicarao speciality reported by Oviedo as specifically deriving from "*Nueva España*" (i.e., Central Mexico); Chapman believes these must have been tortillas, though Oviedo reports the indigenous name as *tascalpachón* (Chapman 1974:29)[7]. Oviedo commented that the Nicarao grew more beans than were grown in any part of Central America he had visited (Chapman 1974:25).

Hollowed gourds are explicitly noted as being used for water containers (though presumably their meat was also consumed) and cotton, hemp and *nequén* fibres were used for various types of woven/corded goods, including clothing, mantles, mats, rope and hammocks (Chapman 1974:25). Andagoya (1865:35) observes that *nequén* cordage was stronger and superior to that made in Spain. Cacao, for which the Nicarao possessed a documented monopoly–it was grown only in the Rivas region and in Tezoatega in Chinandega on the

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[7]Curiously, the archaeological record provides little evidence to support the identification of *tascalpachones* as tortillas. Comals (tortilla griddles), which typically constitute up to 20 per cent of ceramic assemblages in Central Mexican archaeological contexts (Geoffrey G. McCafferty, personal communication 2002), are extremely rare in Nicaragua.

northern coast, both areas under Nicarao control (Fowler 1989:169)–was used as a form of currency by both the Nicarao and the Chorotega, "as in New Spain" (Andagoya 1865:33; cf. Chapman 1974:27). It was available only to those of higher status and was also used in chocolate drinks and for medicinal purposes. Cacao was so valuable that counterfeiting appears to have been a real problem (Chapman 1974:27). The Chorotega enjoyed a similar monopoly on the fruit of the *níspero* tree, which had fewer uses–it is unclear whether it was also used as a currency–and a value approximately half of that of cacao (Chapman 1974:82). Alcoholic beverages were prepared using maize and honey, and a herb called *yaat*, which Chapman identifies as coca, appears to have been commonly chewed when going to war or travelling long distances (1974:29; Healy 1980:31).

All adult males seem to have hunted (using bow and arrow, nets and various unspecified traps), and game animals included deer (which may have been reserved for nobles), peccary, jaguar, puma, wolf, fox, skunk, rabbit and anteater (Chapman 1974:28-29; Healy 1980:290). The only domestic animals observed by the Spanish were barkless dogs and turkey, both of which were raised for their meat (Healy 1980:16). Fish and fowl were abundant (Andagoya 1865:32-33), though the sources do not seem to provide any detail regarding how these resources might have been exploited. Andagoya, for example, refers to "great fisheries" in the lakes, but it is unclear whether he is discussing an actual industry or simply the potential for one (1865:35). Chapman does suggest that a greater dependence upon lacustrine/marine resources is one of the few things (other than the cacao and *níspero* monopolies) that distinguishes Chorotega subsistence from Nicarao, but provides no specific ethnohistoric evidence for this (1974:81-82). The Chorotegan also appear to have differed from the Nicarao in their eating of toads and roasted scorpions, a practice witnessed firsthand by Oviedo (Chapman 1974:82).

Very little information is available regarding Nicarao and Chorotega artisans. While ethnohistory tells us that women wove and men made cord, it is unclear whether these were specialist occupations or simply tasks integrated into daily life–the more likely possibility (Chapman 1974:43). There appears to be no information at all regarding various possible craft specialisations for which there is only indirect ethnographic evidence, such as

woodcarving,[8] or ethnographic and archaeological evidence, such as stone working and ceramic production. Since there are no ethnohistoric accounts of ceramic production beyond the island of Chira (as previously noted), there is no way of knowing if potters were specialists or even if they tended to be women or men. Goldworking, however, is quite clearly identified as a speciality occupation, and goldsmiths seem to have enjoyed a greater status in Nicarao society that placed them above commoners, though their relationship to elites and/or religious leaders is uncertain (Chapman 1974:40-41).

While noting that Nicaraguan markets are poorly documented in the ethnohistoric sources, Chapman observes that the few references available do suggest that the concept of the marketplace was very highly developed among the Nicarao, just as it was in Mexico, and that markets were supervised by appointed officials (1974:18, 28). Markets were held in the aforementioned plazas (whether specific areas were set aside is unclear), and as already noted, cacao was used as currency (Andagoya 1865:33). Items that are specifically noted to have been available for sale included slaves, gold jewellery, mantles and other types of woven cotton goods, maize, fish, birds and rabbits (Chapman 1974:28). In some respects markets seem to have been dangerous, perhaps even liminal places forbidden to adult males or those who spoke foreign languages: beside market workers, only women, children, virginal youths and slaves were permitted to enter them, and according to Oviedo, it was legal to capture foreigners in the market and sell them as either food or as slaves (Chapman 1974:42, 45). Little is known about Chorotegan markets, other than that they existed and that the Chorotega traded with Chibchan groups (Chapman 1974:83). The importance of markets to immigrant Mexican groups may have been linked to the importance of trade; Ibarra (1995, cited in Salgado 1996:36) argues that Mexican immigrant groups settled in areas where they could dominate trade.

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[8]The "pillow" of the *teyte* of Tecoatega, for example, is described by Oviedo as being a beautifully carved curved wooden artifact with four legs that appears to have very much resembled the elaborately carved stone "metates" that are ubiquitous in Central America (Chapman 1976:22).

Clothing. Chroniclers make little distinction between the clothing and adornment of the Nicarao and Chorotega, though dress does appear to have indicated social status (Chapman 1974:31). The basic male garment for both groups was a loincloth that was wrapped around the waists and between the legs; Chapman's observation that this garment was similar to that worn by males in contemporary Mexico would identify it with the garment that the Aztecs called *maxtlatl*, which was also common among many other groups in Mexico, including the Mixtecs and Lowland Maya (Anawalt 1981:21, 23, 210; Chapman 1974:30). The loincloth was covered with a colourful woven sleeveless cotton garment (*coselet*) (Anawalt 1981:21; Chapman 1974:30). This may be identifiable with the *xicolli*, another common Central Mexican garment that served as a ritual garment among the Aztecs but as a class marker among the Mixtecs and Maya (Anawalt 1981:39, 130, 186). The inhabitants of "Nicoya" (Chorotegas, presumably) also wore a form of penis sheath that appears to have been unique to the southern area, while cotton mantles (possibly similar to the Aztec *tilmatli*) are noted as being a standard item of dress in Nicaragua (i.e., among the Nicarao) (Anawalt 1981:27; Chapman 1974:30-31).

Women's garments are noted to have been less standardised than men's, though women typically wore apron-like garments that extended to the knees (for commoners) or to the ankles (for elites) (Chapman 1974:31). Elite females also wore cotton gorgets adorned with shell that covered the breast, as well as shiny bracelets (Chapman 1974:31). Earrings were worn by males as well as females, and gold medallions were apparently common (presumably among elites); lip plugs (labrets) of carved bone and hammered gold were worn by at least the Nicoya Chorotega, and the cacique Nicarao is noted to have been distinguished by a nose ornament (Chapman 1974:31). Both men and women wore sandals (*gutaras*) of deer hide and cotton, and Chapman suggests that various types of body art (including tattooing and painting) were probably used to distinguish Nicarao and probably Chorotegan leaders (Chapman 1974:31-32). Hairstyles were distinct amongst both the Nicarao and the Chorotega, and the Nicarao (according to Bobadilla) also practised cranial deformation, a practice that Hoopes and McCafferty (1989) have suggested may link them to the Olmeca-Xicallanca of the Gulf Coast (Chapman 1974:32).

Social Organisation. Nicarao and Chorotegan societies were more dramatically different in their organisation than in most aspects of their cultures as described above. The Nicarao featured a highly stratified social system headed by a powerful hereditary chief (the *teyte*) and a council of noble elders (*nonexico*) that has been suggested to be similar to a system characteristic of the Puebla-Tlaxcala region in Mexico (Chapman 1974:37; Fowler 1989:201; Healy 1980:25)[9]. Other individuals who were ranked above commoners included principal captains, priests, *confesores*, war captains, market officials and (as already noted) goldsmiths (Chapman 1974:38-41). The key factor distinguishing rank appears to have been whether or not one paid or received tribute: commoners paid, nobles received, and slaves did neither (Chapman 1974:41). Virtually no information is available regarding the status of elite women, though ethnohistoric sources indicate that nobles were polygamous (unlike commoners) and that one wife was considered to be the "legitimate" one with regard to legal matters such as inheritance (Chapman 1974:33). The commoner class included warriors, merchants, farmers, hunters, fishermen, most artisans, prostitutes and beggars, though as already noted, it is unclear to which extent any of these occupations could be considered "specialisations" (Chapman 1974:41-44). Slaves included individuals who had been sold by their parents to pay off debts (with the apparent understanding that they would be bought back later, and would not be eaten!) and criminals paying off their debt to society (Chapman 1974:44-45). Prisoners of war do not appear to have been enslaved, but were rather sacrificed or eaten (Chapman 1974:45).

Nicarao legal and educational practices were reputedly similar to those of Central Mexico, and most crimes were punished by enslavement or reimbursement for stolen property (Chapman 1974:46-48; Healy 1980:24; Lothrop 1926:58). Market officials and the *nonexico* acted as judges for most crimes (Chapman 1974:46). Legal information pertaining to land claims and genealogy was recorded in deerskin codices, as already noted (Chapman 1974:65). Chapman specifically notes that the Chorotega did not possess these types of books.

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[9]Fowler and Healy use the spelling *monexico*, while Chapman, quoting directly from Oviedo, uses the spelling *nonexico*. I have preferred the latter spelling here.

While there is far less information available regarding Chorotega social structure and law than there is regarding the Nicarao, accounts suggest that Chorotegan society was less narrowly stratified and more "democratic": the *cacique* was an elected official, a council of elders played a greater role in political affairs, and elites had much less power, though this seems to have changed within a short period time following the Conquest (Chapman 1974:83-85). Chorotegan women also seem to have possessed more influence than their Nicarao counterparts. Ethnohistoric sources report that the Nicarao felt that Chorotegan women had too much power over their husbands, and this power was extensive enough that women had a legal right to turn their husbands out of their houses (Andagoya 1865:33; Chapman 1974:82, 86). The sexual division of labour seems to have differed between the two groups, inasmuch as the Nicarao mocked the Chorotega for allowing men to perform "menial services" such as weaving and sweeping the house (Andagoya 1865:33).

Religion. Nicarao and Chorotega religious practices may also have been dramatically different, although they were similar in several respects that seem generically Mesoamerican. For example, both groups made war to secure prisoners for sacrifice, ritually consumed the remains of sacrificial victims and practised autosacrifice (Chapman 1974:57-65, 89; Fowler 1991:200; Lothrop 1926:50). Nicarao religion in particular demonstrated extensive Central Mexican parallels. The practice of ritual confession was common in both Nicaragua and Mexico (Andagoya 1865:34; Healy 1980:31), and Nicaraguan rituals like the *volador* game that was held to celebrate the cacao harvest had Central Mexico analogues (Chapman 1974:50-53). The Nicarao's 260-day calendar diverged from that of Aztecs only in the pronunciation of day names and possibly in the number of named days, since the Nicarao alternated *Acato* and *Agat* in place of the Nahuatl *Acatl* (Chapman 1974:49; Healy 1980:31). Many Nicarao gods were avatars of Central Mexican deities, including Mixcoa (god of commerce, identifiable with the Aztec's Mixcoatl), Quiateot (god of rain) and Chiquinaut y Hecat (gods of the wind whose names seem to derive from "chiquinaui Eecatl", or "9 Wind", the calendar name of the wind god Ehecatl and also a Mixtec cultural hero) (Chapman 1974:54-56; Fowler 1989:232-36; Lothrop 1926:67-69). Various theological

concepts, such as a belief in life after death and the soul and the destruction of the previous world by a flood, may also demonstrate Mexican connections (Chapman 1974:56-57).

The very limited amount of available information on Chorotega religion, on the other hand, does not encourage a similar strong identification of Chorotegan and Central Mexican practices. Oviedo observed that the Nicarao and Chorotega celebrated distinctly different ceremonies (though supporting details are unavailable), and Chapman argues that there is no evidence that the Chorotega shared the same gods, religious concepts, calendar or secular games as the Nicarao (1974:48, 87). Oviedo names only three creator gods for the Chorotega–Tipotani, Nenbithía and Nenguitamalí–none of whom appear to be analogues of specific Mexican deities (Chapman 1974:87).

In short, ethnohistory clearly points to numerous connections or parallels between Greater Nicoya and Mesoamerica, and suggests especially strong connections between the Nicarao and Central Mexico. These connections are apparent not only in accounts of settlement organisation–although plazas were also common in many other parts of the Americas (Healy 1980:28)–and economic practices (especially in terms of subsistence and in the importance of cacao and the marketplace), but also in accounts of clothing, social organisation and religious practice. This evidence suggests that the various migration stories, though inconsistent with regard to specific details, are at least likely to be correct in their identification of the original homeland(s) of many Nicaraguan groups as being located somewhere in Mexico.

On the other hand, ethnohistoric accounts also suggest potentially significant differences between Greater Nicoya and Mesoamerica, especially in the case of the Chorotega. The monumental stone architecture that is often considered to be a diagnostic feature of Mesoamerican civilisation and state-level society–including pyramids, temples, palaces, ballcourts, roadways and so on–is nowhere to be found in Nicaragua, although it is found at sites in neighbouring El Salvador associated with the Nicarao-related Pipil (Fowler 1989). This might suggest that elites were less powerful in Nicaragua than in Mexico, though accounts of the despotic nature of *teytes* seem to dispute this. The short inventory of

garments provided by ethnohistory makes no mention of male hip cloths, a standard item of apparel worn over the ubiquitous *maxtlatl* by members of most Mesoamerican groups regardless of class, and the penis sheaths apparently worn by some Chorotega groups are certainly not a standard Mexican accessory (Anawalt 1981:24, 210). Various common upper body garments worn by most Mesoamerican females, such as the cape-like *quechquemitl* and shirt-like *huipilli* (Anawalt 1981:35, 52) also seem to be conspicuous in their absence from the ethnohistoric record, though they might have been overlooked by chroniclers like so many other cultural details or, alternatively, might have been simply less practical in the warmer Nicaragua climate (it may be relevant that *huipillis* do not seem to have been as common in the warmer Lowland Maya area as they were in the cooler highlands) (Anawalt 1981:213). With regard to social organisation and religion, Chorotegan practices seem to be less specifically Mesoamerican than Nicarao practices (despite generic similarities in religious practices), though the lack of detailed information about the Chorotega makes this difficult to confirm. And while Nicarao religion does seem very similar to Central Mexican religion, several major Central Mexican gods appear to be lacking from the Nicarao pantheon, including Tezcatlipoca and Huitzilipochtli (Hoopes and McCafferty 1989; Lothrop 1926:84), although Healy (1980:30) suggests that the Nicarao word for temple, *ochilobo*, was a corruption of the latter deity's name.

That the Nicarao and Chorotega differed in various ways from each other and from known Mesoamerican groups is not surprising, since it would be naive to assume that they might have simply uprooted themselves in Mexico, migrated thousands of kilometres, and transplanted themselves into Nicaraguan soil, culture intact. It is to be expected that some cultural elements would have been lost in the transition, while others would have evolved or been borrowed from local groups once the migrants arrived in Greater Nicoya. And in fact, a number of elements of Nicarao and especially Chorotega culture *do* suggest the influence of Chibchan or other Central or South American groups. Healy (1980:31) observes that the documented Nicarao practices of chewing coca and lime and holding festivals solely for the purpose of drinking are customs more commonly associated with South America than Mesoamerica (see also Andagoya 1865:34; Belt 1874:279; Lothrop 1926:56). Hoopes (2002)

suggests that the relatively higher status of women in Chorotega society may have been connected to matriarchal Chibchan practices, and notes that several of the rulers of communities in Costa Rican Chorotegan territories encountered by the first Spanish explorers appear to have been women (cf. Werner 2000). While it may not be necessary to explain the higher status of women in Chorotegan society in terms of influence from other Central American societies–after all, female leaders were not unknown among other Otomanguean groups in Mexico, like the Mixtecs (Spores 1984)–the fact that only women were allowed to work as vendors even in *Nicarao* markets (a practice that does not seem to be mirrored by Nahua groups elsewhere) (Fowler 1989:187) does seem to suggest that Greater Nicoya perhaps provided a context in which groups were under greater pressure to acknowledge the importance of women's roles.

While the documentary accounts suggest clear distinctions between the Chorotega and the Nicarao in spite of their many similiarities, the same cannot be said for the sub-groups of these larger entities, like the Mangue, Orotiña, Nicoya and Bagaces. Ethnohistoric accounts have a tendency to generalise and present the practices of individual Chorotegan or Nicarao groups as if they were typical of *all* Chorotegan or Nicarao groups–as if members of Mangue, Orotiña and Nicoya groups, for example, all ate toads and scorpions simply because they were all "Chorotega". For this reason, it is impossible to discern on the basis of ethnohistoric evidence whether or not there may have been differences in practice between sub-groups that were considered to be quite significant by the members of these groups, and which might lead us (if we only knew of them!) to reconsider the utility of discussing "Chorotega" and "Nicarao" as broad ethnic categories.

Ethnohistorical Contexts for Ethnicity and the Problem of Markers

In addition to providing details about Nicarao and Chorotega culture, the ethnohistoric record also suggests that conditions in Greater Nicoya were ripe for the development of ethnic competition and differentiation. As we noted in chapter 2, there is substantial documentary evidence of competition and warfare, not only between the two Mesoamerican groups, but also between these groups and other local groups like the Matagalpa. Most

conflicts (other than those that involved securing prisoners for sacrifice) seem to have been over land: Bobadilla's Nicarao informants told him that settling disputes over territorial boundaries and seizing agricultural land from other groups were their "principal motivations" for going to war (Fowler 1989:207), and certainly the use of codices to support land ownership claims seems to confirm a Nicarao interest in this resource (Chapman 1974:65).

The above-noted desire of Mexican groups to control trade can also be presumed to have been a source of conflict in Greater Nicoya that might have been tied to the emergence of ethnic identities. While there is not a great deal of information available on the mechanics of trade in Greater Nicoya, evidence that the Nicarao in particular attempted to control it might be found in the aforementioned strategic location of Quauhcapolca on the trade route connecting the northern and southern sectors and in the Nicarao monopoly on cacao (Abel-Vidor 1980a:161). As previously noted, Cohen (1969) argued that the Ibadan Hausa asserted their ethnic identity in order to prevent the Ibadan Yoruba from infiltrating the kola nut and cattle trade, and ethnic identities might have played a similar role in keeping the production of crops like cacao and níspero "within the family" in Nicaragua.

Keyes (1981:15) observes that migrations often precipitate the kind of crises that lead to ethnic group formation, and this phenomenon can be explained in terms of practice theory. The migration of a new group into an already populated region necessarily involves encountering the ethnic other (for both migrants as well as indigenes, of course), and this can lead to a disruption in doxic knowledge and the formation of ethnic categories through the objectification of certain beliefs and practices. We might hypothesize that the arrival of the migrants from such a tremendous distance would have been especially traumatic for all of the populations involved, since generations of independent evolution in cultural practices occurring in far removed regions might have left these groups with few things in common. The shock of the initial collision between Chibchan and Mexican cultures circa AD 900 may have rivalled that of the first encounters between the New World and the Old six hundred years later.

Yet while the initial confrontation between Mesoamerican and Central American cultures may have been traumatic and fuelled the processes of ethnic differentiation, this

does not necessarily imply that individual ethnic groups would have closed their borders and shut themselves off from outsiders. After all, the adoption of southern cultural practices by northern migrants is unlikely to have occurred if the migrants had been xenophobic upon their arrival in their new home. Ethnohistory seems to suggest a great deal of interaction between the various ethnic groups in the area, friendly as well as hostile. Some authors have argued that Greater Nicoyan ethnic groups lived in a state of relatively peaceful co-existence (Abel-Vidor 1980a:161), or even that Nicaragua comprised "a series of functioning multi-ethnic communities", based on the apparent lack of evidence for chronic conflict in this area (Lange et al. 1992:13). While the archaeological database is perhaps not well enough developed to either prove or disprove "chronic conflict" (though ethnohistoric accounts suggest warfare was endemic), there is reason to think that at least some communities or areas may have been multi-ethnic, and that it is something of an oversimplification to talk about Nicarao or Chorotega "territories" as if these might be clearly delineated by drawing a few lines on a map. The isthmus of Rivas may have been "Nicarao" territory and the area north of it "Chorotega", but this does not necessarily mean that Nicarao or Chorotegan populations were confined, respectively, to the southern and northern sides of the Río Ochomogo. Oviedo and other chroniclers recorded the presence of Nicarao enclaves in some predominantly Chorotega territories (Fowler 1989:67), and the same may have held true for the Chorotega in Nicarao territory. The interaction between the Nicarao and the Chorotega may even predate their arrival in Nicaragua and may have provided an incentive for the Nicarao migration, since as we have already noted, some migration accounts suggest the two groups worked together in their flight from Mexico.

In sum, ethnohistory suggests a particularly ripe context for the emergence of Chorotega and Nicarao ethnicity in Greater Nicoya, and even suggests locations where we might look for evidence of these groups. This would seem to support the assumption that these groups can be associated with archaeological material. However, while ethnohistory does suggest a variety of artifacts and practices that might have functioned as potential Chorotega or Nicarao markers, and which could theoretically be used to associate sites with these ethnic groups, frustratingly few of these are likely to be archaeologically recoverable. For example,

while the sources suggest that body decoration, hairstyles and costume elements were especially good markers of identity, most of these markers–with the possible exception of certain more durable items of adornment such as earrings and labrets–are rarely (if ever) preserved archaeologically in Nicaraguan contexts, though certain artistic depictions of them in ceramic media such as figurines or modelled vessel supports might be recoverable. Similarly, no known examples of the codices that were supposed to have been used exclusively by the Nicarao have survived.

Archaeologists face a similar problem recovering evidence of ethnically salient practices identified in the sources. Ethnohistory tells us that the Chorotega and Nicarao were perhaps more differentiated by social structures, attitudes towards gender roles, and possibly religious beliefs than they were by material culture, but while a time-travelling anthropologist might be able to distinguish a Chorotega male from a Nicarao by his willingness to sweep the floor or skill at weaving, making such a distinction archaeologically would be far more difficult. Complicating matters is the fact that Nicaraguan ethnohistory simply does not provide enough detail about certain practices that are often ethnically salient–in some cases, no detail at all–to be able to associate the patterning left by these practices with specific groups. Regarding foodways, for example, while ethnohistory suggests that the Chorotega may have been more dependent on lacustrine resources than the Nicarao, this by no means implies that archaeologically recoverable faunal material or artifacts such as net sinkers and fishhooks indicate a Chorotegan presence. On the other hand, if more documentary detail were available–say, about a species of fish preferred by the Chorotega, or about specific fishing practices used exclusively by the Nicarao–faunal and artifactual material could be better linked to specific groups. In this respect, it is not as useful to know that the Chorotega sometimes ate scorpions and toads as it is to know that the Nicarao ate tortillas, since it would probably be very difficult to associate the former practice with specific archaeological evidence (a scorpion or toad "midden" would seem to be as unlikely a find as a scorpion "fork") while tortilla preparation, on the other hand, would seem to imply the presence of a specific ceramic form, the comal, that might therefore function as an ethnic marker.

Ironically, some of the artifacts and practices that leave the strongest traces in the archaeological record and which have the potential to be good ethnic markers receive such limited attention in the ethnohistoric record that it is impossible to ascertain, based only on this record, if this potential was in fact realised. House mounds and floor plans, for example, stand a good chance of being preserved–though as previously noted, few have been reported as of yet–but the ethnohistoric sources discuss Nicarao and Chorotegan architecture in such a generic fashion that potentially significant differences between their individual dwellings (for example, orientation, placement of doors, organisation of internal space or even mound shape) are lost. To choose another example, costume elements such as labrets and nose plugs might have served as ethnic markers in Greater Nicoya as elsewhere (Brumfiel uses labrets to identify ethnic Otomí archaeological populations at Xaltocan in Central Mexico 1994:98ff), but a single reference to Nicoya Chorotega wearing labrets, while provocative, is hardly conclusive evidence of ethnic saliency (Chapman 1974:31). Similarly, Bobadilla's report that the Nicarao practised cranial deformation (Chapman 1974:32) does not preclude the possibility that other groups did as well, but were simply unreported. Other types of artifacts that would seem to have equally great potential to be used as ethnic markers and which are also likely to be well preserved, such as lithics, are not discussed at all in the ethnohistoric sources.

Ceramics, like lithics, belong to the class of potential markers that are virtually undocumented in the ethnohistories, even though they are the most commonly recovered artifact class in Greater Nicoyan archaeological contexts. The lack of documentary information about ceramics, however, does not necessarily preclude an investigation of their possible use as ethnic markers.

Ceramics and Ethnicity

Primarily because of their ubiquity, virtual indestructibility and "almost infinite potential for cultural expression" (David and Kramer 2001:146; McCafferty 1988:39), ceramics have been the focus of numerous previous attempts to identify ethnicity archaeologically in many parts of the world (e.g., Cunningham 2001; David et al. 1988; Janusek 2002; Lind 1987;

McCafferty 1988, 1992; McGuire 1982; Santley et al. 1987; Spence 1993, 1996). The most common approach (and one often applied in Nicaragua, as we shall see) has been to attempt to connect ethnicity with decorative variation, but this is by no means the only possibility. Other approaches have attempted to connect ethnicity with patterns of ceramic use as well as variation in form and production processes–the approach most characteristic of *chaîne opératoire*-oriented studies. All of these approaches are potentially useful because, as we have already seen, the source of all of these types of variation–in decoration, in form and in patterns of use–is the habitus.

Connecting Ceramic Variation and Ethnicity. Attempts to connect ethnicity to ceramics very often (whether explicitly or not) apply variations of the information exchange approach popularised by Wobst and developed by subsequent theorists, as discussed in chapter 4. Such approaches assume that decorative variation served (in at least some cases) as part of a conscious attempt to assert cultural identity, and therefore provides a "convenient means for approaching social boundaries" (Gosselain 1998:82; cf. Brumfiel 1994:96; Cordell and Yannie 1991:98). Variations in form, on the other hand, are considered to have been functionally determined (especially by processualist archaeologists), and are therefore not usually considered to have been useful for the same purpose (Jones 1997:111), a point to which we will return momentarily. The primary audience for the messages sent through decorative variation is typically assumed to be an outside one, though it need not be a distant one. Wonderley, for example, argues that while the "Mesoamerican" iconography of Vagando Polychrome made by Mexican migrants living in the Naco Valley in Honduras "reflected a stance of elite internationalism", these patterns were intended to convey messages to local indigenous ethnic groups (who are themselves associated with Nolasco Polychrome, a different ceramic type) rather than distant or visiting elites (1986:522).

Other authors have challenged this approach towards ceramic decoration as being too limited, recognising that "signalling to outsiders constitutes only one part of the marking of community or ethnic boundaries; internal reinforcement is at least as important" (David and Kramer 2001:180-82; cf. Gosselain 1998:82; Sterner 1989:458). David et al., for example, suggest that "decoration acts, sometimes explicitly, and sometimes not, as a mnemonic,

reminding of symbolic structures and themes that are the premises on which the culture is built" (1988:374-75). These authors go on to argue that pottery designs, rather than being "messages consciously emblemic of ethnicity," may also be a means by which "society implants its values in the individual–every day at mealtimes" (1988:379). Decorative types are long-lasting because they express the "underlying structures of belief and thought that most distinctively constitute the societies' unique identities" and therefore "are likely to offer not only good but the best evidence of 'ethnicity' generally preserved in the archaeological record" (David et al. 1988:378). This approach reflects a somewhat primordialist view of ethnicity: following the argument developed in this chapter, it would be more accurate to say that decoration provides evidence of habitus, the raw materials of ethnic identities, rather than necessarily providing evidence of situational ethnic identities themselves.

Of course, ceramic decoration can also be used to delineate other things than ethnicity (including lineages, political boundaries, linguistic groups and distribution systems, for example) (Cordell and Yannie 1991:98; Emberling 1997:311; Feinman et al. 1989; Stark 1992), and it may therefore be presumptuous to assume that decoration functioned as an ethnic marker in a given social situation in the absence of any corroborating evidence. In fact, this assumption can actually undermine studies of ethnicity, as Flannery and Marcus (1983:279) have argued in the case of Oaxacan archaeology, where certain ceramic types have traditionally been used (much as they have been in Nicaraguan archaeology, and probably wrongly) as markers of specific ethnic groups (cf. Feinman et al. 1989). It may even be presumptuous to assume that decoration served any specific *emblemic* function at all, in a given context. Sterner (1989), for example, found that many of the most elaborately decorated pots of the Sirak Bulahay in North Cameroon were utilitarian and typically so covered with soot through normal use that their decoration was completely obscured and could therefore not have served as an emblemic marker of any social identity–even if the pots had been displayed publically, which they were not (their normal context of use was the very restricted space of dark kitchens where they were rarely seen even by their owners). In this case, decoration served to protect the pot's contents rather than to send a message to an outside audience (Sterner 1989:457).

David et al. also observe that decoration may lose whatever significance it possesses on artifacts that have crossed ethnic boundaries–that is, on artifacts that have been produced by one group but which are used by another (1988:377-78). An implication of this with regard to Nicoyan archaeology is that the possible use of pottery manufactured by one group (the Chorotega or the Chira islanders, for example) by another group (the Nicarao or the Gulf of Nicoya coastal populations) does not necessarily imply (as is often uncritically assumed) that the consumer group is assimilating or otherwise identifying with the manufacturers of the pottery, though this remains a possibility. More specifically, Mesoamerican motifs found on Nicaraguan pottery might therefore suggest that potters identified with Mesoamerica, but not necessarily that pot users did. It is also important to recognise that potters themselves often deny that the decorations which they apply to their work are meaningful or serve the purposes that archaeologists might ascribe to them (David et al. 1988:377; Gosselain 1992:574). Still, even when decoration is not consciously applied with the intention of marking ethnic affiliation, it may still reflect habitual practices that may have contributed to the formation of ethnic identities.

Different habitual practices can also produce different patterns of ceramic use which may be preserved in archaeological assemblages, and the identification of these patterns therefore has the potential to be very useful in identifying ethnic groups, particularly when the archaeological database is sufficiently well-developed or when a group's use of specific vessels is documented (McGuire 1982:162). Preferences for certain vessel forms shaped by habitus may thereby lead to the development of specific assemblages or specialised ceramic "tool-kits" that reflect specific foodways, which often emerge as an important part of ethnic identities (McCafferty 1988:40, 1992:245; McGuire 1982:163; Santley et al. 1987:87; van den Berghe 1981:260). Ancient Nicaragua, as ethnohistory suggests, was no exception in stressing the ethnic salience of foodways, since the Chorotega and the Nicarao were at least partially distinguished by their cuisines and might therefore have also preferred different vessels for different functions. However, since Nicaragua lacks a well-developed comparative database and no complete household has been excavated that might give us an indication of what

might constitute a "typical" kitchen tool kit, this promising approach may be particularly difficult to apply at present.

Information about ancient ethnicity might also be derived from the study of ceramic forms as well as decoration and patterns of use. In some cases, variation in form may have been consciously used to provide a more effective means of "transmitting" ethnic messages than decorative variation, since vessel morphology is visible at a greater distance than decoration (Cunningham 2001:20; Sterner 1989:454). But it is not necessary that ceramic form was used consciously in the past as an ethnic marker for archaeologists to use it as a means of studying ethnicity in the present. Individual vessel forms–the aforementioned comal, for example–may reflect ethnically salient behaviours, such as culinary practices (e.g., Lind 1987; McCafferty 1992), and might therefore provide a means to explore foodways even if the necessary data to identify specific kitchen tool-kits is lacking.

Proponents of technical systems-oriented approaches with an interest in ethnicity (e.g., Dietler and Herbich 1998; Gosselain 1992, 1998) take a particular interest in formal variation as a potential indicator of identity because aspects of form are the product of learned dispositions that guide potters's perceptions of "an acceptable range of variation in choices at the different stages of the *chaîne opératoire*" (Dietler and Herbich 1998:250). In other words, the potter's habitus will generally guide her or his perception of whether or not the pot being formed conforms to an accepted norm. Gosselain observes that certain stages in the ceramic manufacturing process "appear to be more salient than others as indices of cultural variation, because they are both insensitive to innovation and grounded in specific patterns of learning" (1992:559). The shaping process, he suggests, provides the most reliable index of cultural diversity of these production stages, in part because of its reliance on motor habits acquired at a young age during the inculcation of the habitus (1992:582; cf. Arnold 1988:180).

In Gosselain's ethnoarchaeological study area of Cameroon, the habitus-directed shaping process could in fact be correlated with ethnicity (1992:582), and this would seem to suggest that a focus on the vessel forms that are the tangible results of this process is potentially a good way to approach possible past ethnic groups. However, it is worth repeating yet again

that a one-to-one correlation between habitus and ethnic group cannot be taken for granted, and that under different circumstances ceramics as an artifactual class may therefore be inaccurate indicators of ethnicity. Dietler and Herbich, for example, note that in the case of the modern Luo people of western Kenya, "not only are the borders of territories and groups, which are clearly important to people not reflected in the distribution of ceramic styles, but the boundaries of the style zones fall in areas of no cultural or social significance" (1998:254). We must also remember that some classes of ceramics may have marked boundaries while others did not: David and Kramer (2001:176) and Hodder (1982:41-47) provide examples of situations in which some types of pottery produced spatial patterning that correlated with geographical distributions of ethnic groups while other types were found to be widely distributed amongst several groups in a given area.

Nicaraguan Ceramics as Ethnic Markers. Ceramics have been used almost exclusively in previous archaeological attempts to identify Greater Nicoyan ethnic groups, including the work that led to the initial identification of Santa Isabel as a site occupied by the Chorotega as well as the Nicarao. As we have noted, these attempts have almost entirely relied on decorative variation, inasmuch as specific ceramic types defined by decoration have been used to infer the presence of specific groups. This practice dates back to Lothrop's initial correlation of the distribution of certain wares with territories documented to have been occupied by specific ethnic groups (1926; summarised in Strong 1963:140-41). Lothrop correlated what were then known as the "Nicoya Polychromes" (a rather general category that subsumed a variety of later identified types from both Nicaragua and Costa Rica, including Papagayo, Pataky, Vallejo, Jicote, etc.) with *both* of the major Mexican migrant groups, and took the stance that the Nicarao simply adopted Nicoya Polychrome when they arrived rather than developing "a distinguishable subtype of their own" (Strong 1963:141). The only type Lothrop was comfortable in specifically assigned to the Nicarao was the very "Mexican" "Under-slip Incised Ware" (now known as Vallejo: Mombacho) (1926:193). Lothrop also associated various fine monochrome wares with the Chorotega, and one polychrome type with a more restricted distribution than most, Managua Ware, specifically with the Mangue group (Strong 1963:141). When distributions of wares were found to

crosscut the historically documented territories of different groups, Lothrop generally explained this in terms of dual authorship; that is, he assumed that a given ware was made by members of both groups. Nandaime Ware, for example, was assumed to be manufactured by the Subtiaba as well as the Chorotega because its distribution stretched from Costa Rica to the Subtiaba territories in northern Nicaragua, and Black Line Ware was assumed to be made by both the Corobici (a Chibchan group) and the Orotiña because it was found in the territories of both groups (Strong 1963:141).

Lothrop used the frequent presence of rather generically Mesoamerican design elements on Nicoya Polychromes, such as the *xicalcoliuhqui* stepped fret pattern, to support his identification of these ceramics with the Mexican migrant groups (1926:183). When later research (e.g., Bonilla L. et al. 1990; Healy 1974, 1980) subdivided Nicoya Polychrome into individual types, it was recognised that certain types were more "Mexican" in decoration than others, particularly the Nicaraguan Vallejo Polychrome type (which included as a subtype the above mentioned Under-slip Incised Ware) and its Costa Rican analog (and possible imitator) Jicote Polychrome (Canouts and Guerrero 1988). Decorative elements found on these types, especially depictions of mythological entities like the feathered serpent and the earth monster, have led to their association with the Central Mexican "Mixteca-Puebla" style (Day 1994), and since these types are late appearing types, the assumption has been that they are to be associated with the latest arrivals from Mexico–that is, the Nicarao. While the Mexican or Mesoamerican nature of these ceramics has often been overstated–especially in the opinion of Mexicanist archaeologists who are perhaps not as prone as Central Americanists to see Mexican features or the Mixteca-Puebla tradition manifested in Nicaraguan pottery (e.g., Hoopes and McCafferty 1989; McCafferty and Steinbrenner n.d.)–some sort of northern influence is generally acknowledged, and for this reason predominantly polychrome ceramics continue to be used as markers of Mexican-originating ethnic groups in Greater Nicoya.

The preceding discussions of practice theory and of the various ways in which ceramics may reflect ethnicity should make the weaknesses of this traditional approach towards connecting Nicaraguan ceramics and ethnicity readily apparent. Lacking detailed

documentary accounts of ceramic production or use in Greater Nicoya, we cannot take it for granted, as Lothrop and others have, that ceramic decoration did in fact function as an ethnic marker rather than as a marker of something else. It is also obvious that this approach is rooted in the kind of cultural historical approach that correlates sharply delineated archaeological cultures with specific tribes. Implicit in this approach is the view debunked by Barth (1969a) that ethnic groups are bounded entities that produce distinctive patterns of material culture and do not significantly interact with outsiders because such interaction would destroy the group's integrity. Yet Lothrop's argument for the "dual authorship" of certain ceramics like Nandaime Ware clearly depends upon some kind of significant interaction: after all, we cannot simply expect two groups to spontaneously start producing identical ceramics independently. But if interaction *is* taking place, then there is no *need* to resort to explanations of dual authorship (though it might still be considered as a possibility). If there is interaction, we would *expect* some material culture patterning to transcend the boundaries between the groups–as Hodder (1982:41-47) and David and Kramer (2001:176) have indicated–and might therefore explain the distribution of Lothrop's Nandaime and Black Line wares in terms of the widespread distribution of a commodity produced in a centralised location–an explanation that would seriously challenge the use of that commodity as an ethnic marker.

In fact, the only documentary accounts of ceramic production and exchange that we have from this area–those pertaining to the island of Chira–provide an example of *exactly* this type of production and distribution, and give us good reason to question Lothrop's simplistic assumption that ceramics are mostly produced and distributed locally and can therefore be used as markers of ethnic groups in the local area. Castañeda observed that the Chira islanders not only produced pottery for their own use, but also traded this commodity with the inhabitants of the hills surrounding the Gulf of Nicoya, who made no pottery of their own and who may have belonged to different ethnic groups (Creamer 1986:212; Healy 1980:21). Even the possibility that a similar pattern of specialised production and widespread distribution might have been found in other parts of Greater Nicoya seriously undermines the traditional practice of uncritically using ceramic decoration as an ethnic marker, though it

does argue for a study focussing on the potential use of ceramic production processes themselves as markers.

Applying a Practice Theory Approach

Since ethnohistory does suggest that Greater Nicoya provided a context ripe for the emergence of ethnicity but can suggest few archaeologically recoverable ethnic markers, and since our brief review of some of the ways in which ceramic data might be connected to ethnicity suggests that it is problematic to attempt to identify Nicaraguan ethnic groups solely on the basis of decorative variation in ceramics, as has been traditionally done, what options does practice theory suggest for exploring questions of ethnicity in this particular part of the world?

Ideally, practice theory suggests that an excellent way to approach ethnicity archaeologically is to look for patterns of co-variation in material culture that might have been produced by the orchestrating effects of habitus, such as co-variances in the distribution of lithic material and ceramics, or between faunal data and architectural features, or amongst all these categories, and so forth. While habitus does not *necessarily* correlate with ethnicity because of the situational, ever-evolving nature of ethnic identity, as Jones effectively argues, it can provide the basic resources for the construction of ethnic categories, and in situations where we can infer the presence of two or more traditions of doing things in the archaeological record and where the presence of two or more ethnic groups is also documented, the simplest possible explanation would seem to be that the different traditions of habitus are probably connected to the different groups. While naturally there is no *guarantee* that this will be the case, it would seem to be especially likely in a situation like that presented by ancient Nicaragua, since there does tend to be a higher degree of contiguity between habitus and ethnicity in simpler societies (as we have already noted), and since ethnic groups based on a migrant population can be expected to possess a dramatically different habitus that should be clearly distinguishable from that of the original population.

By the same token, if more than one habitus can be identified at a site associated with only one ethnic group in the ethnohistoric record, we will have reason to believe that the

ethnic composition of the living population of the site may have been more complex than the records suggest–or, alternatively, that some of the material culture was imported, having been produced elsewhere by a group with a different habitus, like Chira pottery. However, this is not to discount the possibility that particular historical circumstances may have led to the creation of a single ethnic group with members drawn from different backgrounds and therefore different traditions of habitus. The ethnohistoric sources are not specific regarding the nature of the integration of migrants into local Nicaraguan culture–did they live in enclaves, overrun existing communities, found new ones, or attempt to "blend in"?–but it is not difficult, for example, to imagine a scenario in which a community with a population of predominantly Chorotegan descent may have come to be considered "Nicarao" after being taken over by Nicarao rulers. After all, according to practice theory, ethnic categories are fluid, not fixed.

Because a practice theory-based approach acknowledges that ethnicity is not a simple phenomenon that can be inferred from a potsherd, the effective application of this approach will require the development of a more substantial archaeological database than is presently available for Nicaragua. Looking for patterns of co-variation between individual classes of material culture in the Nicaraguan archaeological record must therefore be a topic for future research and is, at any rate, certainly beyond the scope of this thesis, given our specific focus on the ceramic database. Yet as I suggested in the first chapter, a re-examination of the ceramic database in order to determine if traditional ceramic types are in fact the products of discrete traditions of habitus is a useful first step in the attempt to identify ancient ethnic groups archaeologically. As we have seen, habitus can also be explored by examining variation in ceramic form and patterns of use as well as decorative variation. The technical systems approach in particular suggests that systematic variations in ceramic form, if they can be identified, would seem to constitute good evidence for different potting traditions that are the products of different patterns of habitus. Whether or not groups actually made their own pottery, it remains true that if different types based on decorative variation *are* found to be the product of different potting traditions, this finding would generally argue for the presence of different ethnic entities in the archaeological record, while if different types traditionally

used as markers are discovered to be the product of the *same* habitus, this finding would argue against using these types to identify ethnic entities in the absence of additional evidence (such as evidence suggesting that one group commissioned a second to produce pottery according to the first group's specifications). These problems will be explored in greater detail in our analysis of the Santa Isabel ceramic material in chapter 7, following a summary of the 2000 Santa Isabel project, the subject of chapter 6.

Chapter 6
SANTA ISABEL (N-RI-44-00): AN OVERVIEW

As we have observed in the preceding chapters, at the time of contact Nicaragua's Isthmus of Rivas, the most populous and fertile part of the country, appears to have been under the control of the Nicarao, who seem to have succeeded the Chorotega late in Nicaraguan prehistory. There appear to have been several major communities in the area, the largest of which was the lakefront town of Quauhcapolca. Quauhcapolca appears to have dominated the land trade route connecting the northern and southern sectors of Greater Nicoya and was well situated to have been a centre of craft production. While the exact location of this particular community is lost to modern scholarship, it may have been located at the modern archaeological site of Santa Isabel, which was identified in a recent archaeological survey of the Rivas area as featuring the largest remaining concentration of mounds in the area (Figure 1.1). This site was the focus of preliminary archaeological investigations by a University of Calgary team under the direction of Dr. Geoffrey McCafferty, Department of Archaeology, in late July and early August, 2000. The project is summarised here, with a more detailed analysis of the ceramic material following in chapter 7.

GEOGRAPHY OF RIVAS

The Department of Rivas, in which the site of Santa Isabel is situated, is contained entirely within the Pacific Region, the smallest but most physically complex of Nicaragua's three geographical regions (the other two being the Central Highlands and the Mosquito Coast or Atlantic Watershed) (Healy 1980:8-9). The most distinctive physical features of the region are the Diriamba Highlands, a range of more than a dozen active and extinct volcanoes that transverses the entire country from north to south (Healy 1980:9), and the Nicaraguan Depression, a fertile basin containing Lake Nicaragua and Lake Managua that was once connected to the sea (Healy 1980:10). Most of the modern population of Nicaragua

is concentrated in this lake region, and this appears to have been true for prehistoric populations as well (Healy 1980:9). Lake Nicaragua, or Cocibolca, is the largest body of freshwater between the Great Lakes and Peru's Lake Titicaca, being approximately 160-km long and 72-km wide, with a surface area of 8,264 km^2 (Healy 1980:7; Incer 2000:59). The lake is generally rough and difficult to navigate on the western Rivas side–small boats were almost entirely absent during my own visits to the area in 2000 and 2001, and the only boats in evidence at San Jorge were the ferries to Ometepe Island–though it is much calmer and more navigable on the eastern Chontales coast (Incer 2000:59). Lake Nicaragua and Lake Managua are the remnants of a much larger original lake with a basin of about 40,000 km^2 that may have been separated from the Pacific as recently as the Pleistocene or Holocene; though still connected by the Tipitapa River, the two lakes are now separated by a stretch of low lying plain approximately 25-km wide (Lange et al. 1992:4).

The entire Pacific Region drains into the lakes, which in turn drain into the Atlantic through the Río San Juan, which also demarcates Nicaragua's border with Costa Rica (Incer 2000:55). Hundreds of small islets dot Lake Nicaragua, but there are two major islands, both of which feature important archaeological sites (Healy 1980:7). Ometepe Island, which rises dramatically on Santa Isabel's horizon, is formed by the twin volcanoes Concepción (active) and Madera (extinct) and was the locus of Haberland's work in the 1960s. Zapatera Island, explored by Squier in the nineteenth century and part of the modern Department of Granada, is also an extinct volcano, and is located farther north along the coast of the lake, near to the historic border between Chorotega and Nicarao territories. It is worth noting that Lake Nicaragua is unique in featuring a number of freshwater variants of marine species, including mackerel and the world's only known freshwater sharks (Healy 1980:11).

The Isthmus of Rivas, which separates Lake Nicaragua from the Pacific, comprises about 2155 km^2 and is only 20-km wide at its widest point (Incer 2000:59, 191). The isthmus is made up of a range of flatlands and rolling hills which extends south to become Costa Rica's Nicoya Peninsula (Healy 1980:9). Lacustrine Rivas is separated from coastal Rivas by a very minor range of "mountains" which represents the continental divide at this point; at its low points this range has an elevation of approximately 200 m, while the greatest peak is La

Mohosa west of the town of Tola (477 m) (Incer 2000:191; Lange et al. 1992:4). The political Department of Rivas is entirely contained within the geographical isthmus, with the exception of Ometepe Island.

Virtually all of Pacific Nicaragua remains tectonically active. Earthquakes are frequent: the original colonial capital of León was destroyed by one following the eruption of Momotombo in 1610 (the city was subsequently moved to its present location 32 km away); colonial Managua was destroyed by another in 1931; and the capital was levelled again in a devastating 1972 event that killed thousands. Seven of the dozen-odd volcanoes in the country were active in the twentieth century, and most of these, like the Masaya caldera and Concepción, are extremely close to populated areas. The explosive eruption of Cosigüina on the Gulf of Fonseca in 1835 was heard in Jamaica and Bogota, dropped ash as far as southern Mexico, and blotted out the sun for a radius of more than 150 km (Lange et al. 1992:8). This tectonic activity has benefited Nicaragua's human population, however, by producing rich, highly productive volcanic soils around the lakes that have high clay content and retain moisture well, and which are superior to the weak soils that are more common in the tropics (Lange et al. 1992:5-6). Volcanic clays also provided suitable materials for adobe bricks and pottery manufacture (Lange et al. 1992:6).

The concentration of population in such a volcanically active area suggests that Nicaragua would be a particularly good place to look for another Arenal or Ceren–Central American archaeological sites in El Salvador and Costa Rica that, like Pompeii, have been extraordinarily well preserved under layers of volcanic ash (Hoopes 1987; Sheets 1992; Sheets and McKee, eds., 1994). Haberland (1992:74), for example, found evidence of ashfall on Ometepe that may have led to the partial abandonment of sites on the island early in prehistory (circa 2000-500 BC). However, as of yet, no site abandoned as the result of an eruption has been found in the country, although the Tempisque-era site of Arenera north of Managua (investigated briefly by the University of Calgary crew and presently the subject of ongoing master's thesis work by Rejane Boudreau Rojas) may prove to be such a site. Somewhat surprisingly, no ash layers were distinguishable in the University of Calgary's excavations at Santa Isabel. However, Haberland observed that most of the ashfalls he

experienced while working on Ometepe Island during the 1960s (when Concepción itself was active) did not register in the stratigraphy, and suggested that only falls that come from very sizable eruptions will leave an archaeological trace (1986:370).

Oviedo, commenting on the natural resources of Rivas (including its climate, fisheries, hunting and general fertility), said that "there is nothing in all of the Indies which, feature for feature, surpasses it" (cited in Healy 1980:10). The climate of the Rivas area is tropical, with definite wet and dry seasons. The dry season runs from November through June, with March to May typically being the hottest months of the year. The mean annual precipitation ranges from 1500 to 1800 mm; up to 300 mm may fall in September, the wettest month (Healy 1980:11-12). The average temperature in Rivas is approximately 27°C and humidity is usually above 50 percent; breezes off the lake and the ocean provide some cooling (Incer 2000:192). Personal experience suggests that, in the summer months at least, the coastal areas are considerably more pleasant than those further inland. Most of the area can be classed as Tropical Savanna or Semi-Forest, though much of the area has been cleared for ranching in modern times, while areas of somewhat higher elevation might be classed as Mixed Subtropical Forest (Healy 1980:14). The most important modern crops, maize and beans, were also pre-Columbian staples; other important modern crops include sugar cane, bananas and plantains, papaya, mango and other fruit trees, and vegetables (Incer 2000:118, 194). Coffee is grown on Ometepe, and some commodities known to have been of greater importance in the past, like cotton, cacao, níspero and tobacco, continue to be produced in limited quantities (Healy 1980:14).

Wildlife is increasingly rare in the Rivas area, though naturally more common in relatively remote areas, like Ometepe, where Haberland reported wild deer living on the slopes of Concepción as late as the 1960s (1986:371). Important mammal species in the past (many of which were specifically noted by Oviedo) included deer, jaguar, ocelot, wolf, peccary, coyote, fox, spider and howler monkey, rabbit, armadillo, tapir, coati and insects (Healy 1980:15-16). Marine and lacustrine wildlife includes fish, shellfish, sharks, toads, iguanas, turtles, crocodiles and various other reptiles (Healy 1980:15; Incer 2000:194). Waterfowl and other types of birds remain common, and turkey vultures are to be found

everywhere. While the only ancient domesticates, as noted earlier, were barkless dogs and turkey, the most ubiquitous modern domesticates are dogs, pigs, chickens, cattle and horses. Human beings also continue to be a particularly common species: as of 2000, the human population of the Department of Rivas was 156,649, with a population density of about 73 persons/km^2. Somewhat ironically, Rivas, the region recorded as being the most densely settled by the Spanish, now features the lowest population density of any of the seven Pacific provinces of modern Nicaragua (the population density of the Department of Masaya between Rivas and Managua, for example, is 492 persons/km^2) (Incer 2000:107).

PREVIOUS ARCHAEOLOGICAL RESEARCH AT SANTA ISABEL

Bransford was the first archaeologist to explore the Rivas area, excavating a site called Palmar located on the lakefront "three or four miles northwest of San Jorge" (1881:69), and estimated by Niemel to be located in the northeastern portion of the greater Santa Isabel site (see below) (Figure 6.1). Bransford excavated in a field close to the lake as well as on the beach itself. The beach excavations discovered a number of human burials in what appears to have been an outstanding state of preservation; these were actually below the lake level, and in fact, their excavation was quickly terminated by rising lake levels. Bransford's illustrations of ceramic material recovered from this work appear to depict samples of Bocana Incised ceramics, an early Tempisque Period type (1881:69-70). Unfortunately, Bransford's Palmar excavations rate only a couple of paragraphs in his study.

The first modern (and most extensive) archaeological work in Rivas, as we noted in chapter 2, was conducted by Willey and Norweb between 1959 and 1961, with the material excavated from this expedition being studied several years later by Healy (1974, 1980). Healy provides a summary of the sites excavated in the area, including Santa Isabel.

The site referred to in this thesis as Santa Isabel is more specifically identifiable with the site that Healy refers to as Santa Isabel "A" (J-RI-4), in order to distinguish it from Santa Isabel "B" (J-RI-5), a site located west of the former site (Healy 1980:49, 57; Karen Niemel,

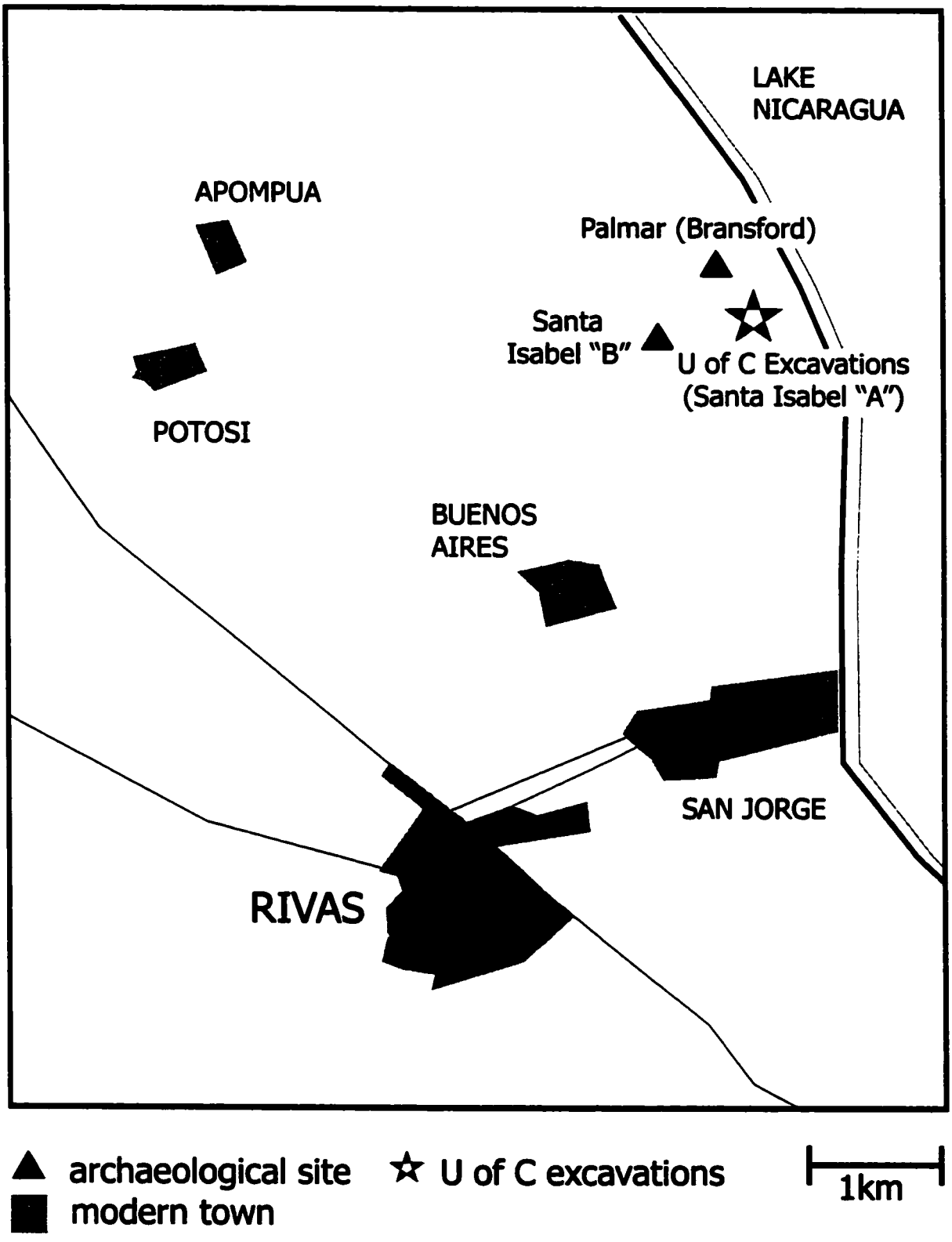

Figure 6.1 Archaeological sites discussed in the text

personal communication 2002). Healy justifies the separate designation of the two sites primarily on the basis of marked differences in component composition: Santa Isabel "A" featured material dating all the way back to the Tempisque Period but was primarily a late (i.e., Sapoá-Ometepe Period) site (Table 2.1), while most of the material from "B" was dated to the earlier Bagaces Period, though the site extended from the Tempisque to the Sapoá Period (Healy 1980:58). However, Niemel's 1999 archaeological survey suggested that the two sites are better interpreted as part of one much larger continuous site (also incorporating Bransford's site as well as a Bagaces Period "Palmar" site identified by Willey and Norweb that is unlikely to be identifiable with Bransford's [Healy 1980:64-65]). Niemel's survey also suggested that the differences between "A" and "B" may simply reflect a shift in the location of the centre of the settlement over time towards the lakeshore, a pattern that is also found in the Granada area (Karen Niemel, personal communication 2002; Salgado 1996). As noted in chapter 2, Niemel found Santa Isabel to be the largest centre of settlement throughout Rivas's prehistory; it is also the only archaeological site in the area where mounds can still be identified (2000, 2002).

Santa Isabel "A" (so-called because it was situated on the lands of the Santa Isabel Hacienda at the time of its initial investigation) was estimated to be approximately 1 km^2 and featured more than 10 artificial mounds ranging in height from 2 to 6 m (Healy 1980:51). Niemel's (personal communication 2001) survey estimated the size of Santa Isabel in its entirety to be approximately 3 km^2. Healy's maps indicate that Santa Isabel "A" was pasture at the time of Norweb and Willey's visit, though it was under cultivation during the summer of 2000. Willey and Norweb excavated three 3 m^2 pits in total during two separate visits in 1959 and 1961. The most useful data comes from Pit 1, a 3-m deep excavation into the centre of an artificial mound (designated Mound 1) that appears to have been partially destroyed by a roadway and which was used to define the La Virgen phase of the Middle Polychrome (Sapoá) Period (Healy 1980:52) (Table 6.1). The mound is now the site of a modern house occupied by Francisco Gonzalez, who assisted in the Peabody excavations. The excavation found sterile soil at a depth of 235 cm and identified seven distinct natural

Table 6.1 Summary of type frequencies from Willey and Norweb's Santa Isabel "A" Pit 1 (based on Healy 1980, 54, Table 9)

	Type		Period	
	No.	%	No.	%
SERVING-CEREMONIAL VESSELS, TEMPISQUE & BAGACES			16	0.5
Espinoza Red-Banded	2	0		
Obando Black-on-Red	1	0		
Schettel Incised	1	0		
Toya Zoned Incised	1	0		
Chavez White-on-Red	3	0		
Potosi Appliqué	5	0		
Tola Trichrome	3	0		
SERVING-CEREMONIAL VESSELS, SAPOÁ OR OMETEPE			1754	51.0
Granada Polychrome	141	4		
Mora Polychrome	1	0		
Papagayo Polychrome	1513	44		
Pataky Polychrome	89	3		
San Ramon Black-on-Red	10	0		
SERVING-CEREMONIAL VESSELS, OMETEPE			137	4.0
Castillo Engraved	32	1		
Combo Colander	5	0		
Madeira Polychrome	33	1		
Vallejo Polychrome	67	2		
UTILITARIAN VESSELS, SAPOÁ & OMETEPE			1281	37.2
Rivas Red: Rivas	414	12		
Sacasa Striated	545	16		
Istmo Plain	322	9		
MISC. INDETERMINATE SHERDS	252	7	252	7.3
TOTALS	**3440**			**100.0**

stratigraphic layers: three of topsoil and four lower layers of sand. About 3,440 potsherds (primarily from late periods) were recovered, as well as a small amount of lithic and faunal remains (Healy 1980:52-53). Several plain comal fragments found in Sapoá Period contexts (Healy 1980:55) were not matched by anything found by the University of Calgary project. Pits 2 and 3 provide less useful data because several of the Pit 2 levels were jumbled or lost altogether and all of the stratigraphy was lost for Pit 3 (a shallow pit located in an open field rather than on a mound) (Healy 1980:56). However, Pit 2 (excavated on a mound nearer to the lake than Pit 1) yielded primarily Bagaces to Sapoá Period pottery, with some early Tempisque Period material as well as "briquets" of yellowish, burnt hardened clay approximately 14-x-22-cm and 15-cm deep (Healy 1980:56). Healy suggests that this might represent an accidentally fired pre-Columbian house floor or hearth (1980:56).

There are several reasons to be cautious when attempting to directly compare Healy's data on the Santa Isabel excavations with that collected by the University of Calgary project. There are problems in Healy's account that likely stem from the fact that he was working with secondhand materials and data: for example, the geographical coordinates Healy provides for Santa Isabel (i.e., N11°28.5', W86° 12.5') are simply wrong, placing the site inland rather than on the coast. Likewise, the scale of Healy's map of Santa Isabel "A" (1980:51, Figure 13), which was based on a sketch map by Norweb and Willey (Healy 1980:37), is also incorrect, possibly missing a "0" digit that would make 10 metres 100 metres. Healy's ceramic data provides useful frequencies of types, but is also not quite directly comparable to that collected by the University of Calgary team because of two major methodological differences. Healy's type frequencies are based upon an analysis of *all* ceramic sherds, while the University of Calgary analysis focussed exclusively upon rim sherds (see the following discussion of the preliminary analysis of artifacts). Healy's study also does not provide frequencies of individual vessel forms within types, an essential component of this study.

Willey and Norweb's failure to discover structural features such as floors and hearths may have been partially a result of their own preconceptions of what constituted a living surface; Healy notes that "clay floors" were not found (1980:39), but Nicaraguan floors may have been more ephemeral than Mesoamericanist archaeologists might have expected. And finally, the "ghost-like strata changes" identified by Norweb (Healy 1980:39) were completely invisible to the University of Calgary team. Healy observes that the soils of tropical America are often leached of colour, and that this, combined with the original archaeologists's impression that the mounds they were excavating may have been heaped up all at once rather than over time, made it difficult to discern stratigraphy and necessitated the use of artificial levels (Healy 1980:39). While the mound excavated by the Calgary crew produced a similar impression, members were unable to identify natural levels in the profiles of excavated units after excavations were complete, as Norweb did.

The most recent archaeological work at Santa Isabel prior to the University of Calgary excavations was carried out as part of Niemel's survey in July 1999, and is currently under

analysis (Karen Niemel, personal communication 2002; it should be noted that Niemel herself also participated in the University of Calgary project). In addition to surveying the site, Niemel excavated two 2-x-1-m units (oriented east-west) approximately 50 m west of Willey and Norweb's Mound 1. Both units were excavated in arbitrary 10 cm levels to a depth of 120 cm, and a radiocarbon sample recovered from Level 8 of the first unit yielded a corrected date of AD 1005 (Karen Niemel, personal communication 2002). The ceramic material recovered suggests a Sapoá to Ometepe Period occupation. More useful comparative frequencies are potentially provided by Niemel's data (Table 6.2) than by Healy's because Niemel recorded her rim sherds independently, as did the University of Calgary project: however, information about vessel form frequencies within types that could be compared with the University of Calgary data is unfortunately also not available for Niemel's project.

Table 6.2 Summary of frequencies of different classes of ceramics (based on rim sherds) from different periods from Niemel's 1999 excavations at Santa Isabel "A" (Karen Niemel, personal communication 2002)

	Unit 1 (%)	Unit 2 (%)
Serving-Ceremonial Vessels, Sapoá and/or Ometepe Period	38.0	23.8
Serving-Ceremonial Vessels, Ometepe Period	7.4	26.7
Utilitarian Vessels, Sapoá & Ometepe Periods	54.6	49.5
Total	**100.0**	**100.0**

UNIVERSITY OF CALGARY PRELIMINARY EXCAVATIONS

The University of Calgary's investigation of the Santa Isabel site (N-RI-44-00) took place over a two-week period in July and August, 2000. As indicated above, the identification of the general area to be explored was based on Willey and Norweb's previous work at the same site as well as on Niemel's survey, which (as previously noted) identified this location as containing the greatest concentration of artificial mounds in Rivas. Most of the fields in the area were thickly planted with mature plantains more than 2 m in height, and were therefore unsuitable for exploration. (This cover also made it impossible to see either the lake or the sand dunes fronting it from the site, despite their relatively close proximity less than a half-kilometre away.) However, a maize field approximately 50-x-120-m and fortuitously

containing an artificial mound approximately 1.5 m in height was not under cultivation at this specific time and was therefore chosen for excavation. The mound itself (located at N11°30'05" W85°47'59") appeared to be identifiable with "Mound 3", a feature identified but not excavated by Willey and Norweb (Healy 1980:51, Figure 13). Interestingly, while local informants suggested that nothing grew very well on top of this feature, a return visit the following summer found it well-planted with a healthy plantain crop. Abundant quantities of sherds were strewn about the field and especially upon the mound. The entire area was deeply furrowed from plowing and it was therefore recognised in advance that the upper strata would represent a plow zone of disturbed material.

Using tape measures, the field was divided into a grid with intervals of 10 m, oriented towards magnetic north and running approximately parallel to a cart track on the north-south axis that divided the field from another field to the west and a barbed wire fence on the east-west axis. The cart track formed the western boundary of the grid; the fence was located several metres south of the southern grid boundary (Figure 6.2). Beginning in the southwest corner of the grid, grid lines were numbered from N0 to N40 on the north-south axis, and from E0 to E120 on the east-west axis. Shovel tests 1-m deep were made at each of the intersecting points on the grid for a total of 65 shovel tests; these were designated according to their grid position (e.g., the shovel test in the southwest corner of the grid was designated N0E0, the next test 10 m to the east was designated N0E10, and so on). Mound 3, approximately 50-x-30-m, was located in the southwest corner of the grid, with approximately 10 m of its longer east-west length truncated by the cart track. The grid therefore did not cover the entirety of the mound.

Based on a preliminary examination of the material recovered from the shovel tests, which indicated a high concentration of artifacts upon the mound itself and a dramatic fall-off in material moving away from the mound (Table 6.3), four excavation units measuring $1m^2$ were opened for stratigraphic excavation upon or on the edges of the mound in locations that appeared to feature particularly significant concentrations of artifacts. Three of these units were later extended another half metre to follow features identified during the excavations, and a fifth 1 m^2 unit was also placed on the approximate centre of the mound,

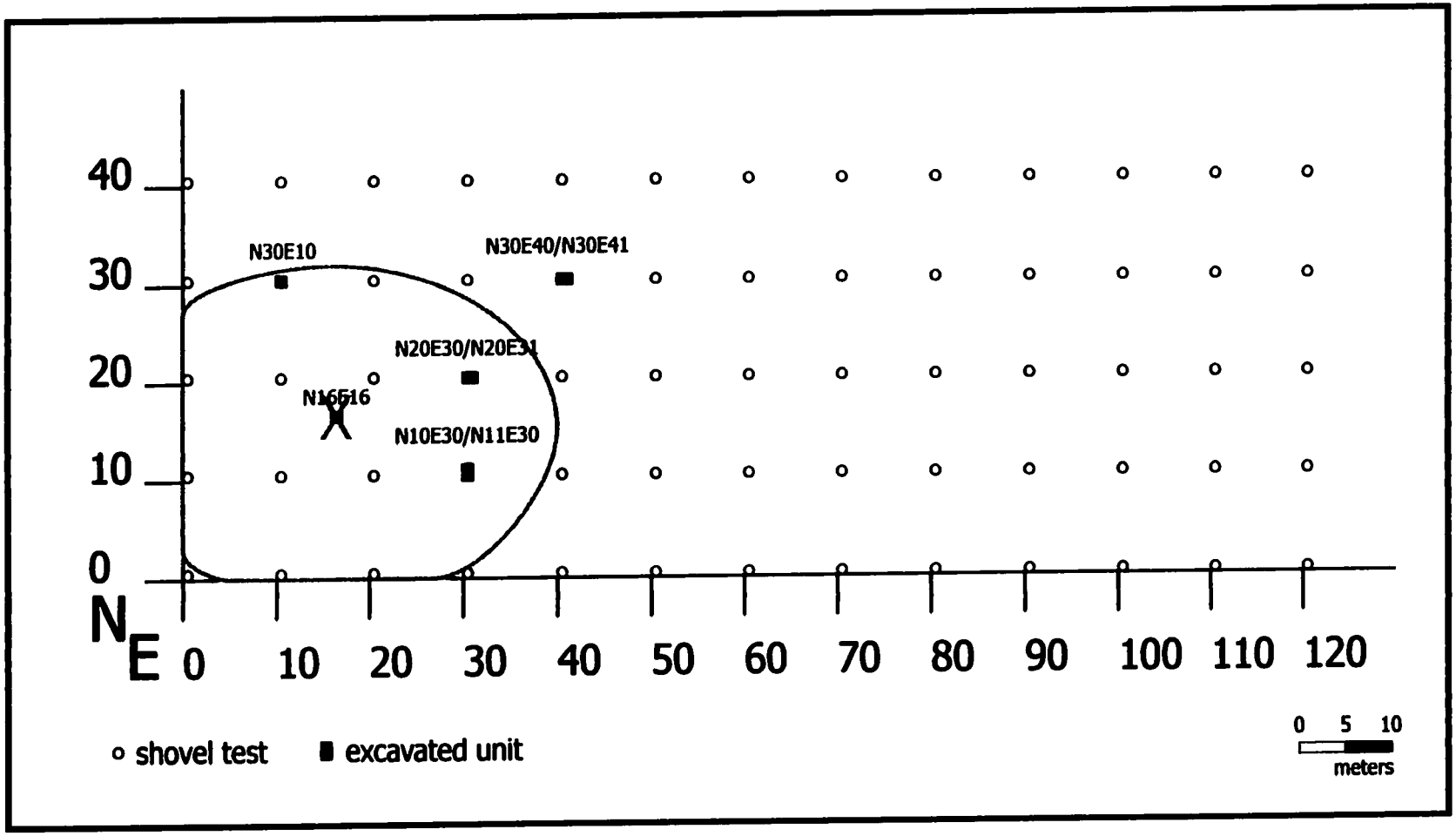

Figure 6.2 Mound 3 and survey area

which was missed by the 10 m grid. These units were designated in the same fashion as the shovel tests (e.g., N10E30, N20E30, N30E40, N30E10 and N16E16). All units were excavated in artificial excavation levels of approximately 10 cm, though the first level in each unit was typically somewhat closer to 20 cm, owing to the necessity of levelling out ploughed furrows), and materials from individual artifact classes (e.g., ceramics, lithics, faunal remains and miscellaneous other objects) were bagged separately in plastic bags according to unit and level. Provenience information was recorded on the bag as well as on cardboard tags inserted into each bag, and particularly interesting artifacts were photographed in situ. Owing to the ubiquitous nature of ceramic material in the mound, only sherds larger than approximately the size of a large coin were collected for analysis. All excavated soils were also screened using 1/4-inch mesh screens. Sixteen radiocarbon samples were collected from various contexts in all units but have not as yet been processed.

Table 6.3 Distribution of all artifacts in shovel test pits

	E0	E10	E20	E30	E40	E50	E60	E70	E80	E90	E100	E110	E120
N40	26	52	53	22	48	22	0	34	2	21	8	15	9
N30	538	265	139	45	80	68	55	24	0	2	9	2	7
N20	193	136	140	454	200	84	25	40	18	5	4	2	13
N10	159	472	491	120	141	253	3	56	5	6	10	10	14
N0	122	387	124	250	127	508	315	89	22	54	25	29	16

The soil of Mound 3, a dark coffee-coloured sandy silt, remained generally unchanged through all levels (even at depths of greater than 2 m), though soil changes were occasionally distinguishable in the test pits in the field east of the mound. As noted above, the field crew was therefore unable to distinguish between possible natural stratigraphic levels on the mound that might have facilitated the correlation of individual strata. One of the few significant stratigraphic features noted was an irregular, consolidated layer of a greyish sand of near concrete-like consistency identified in Unit N10E30 and its extension N11E30 which first appeared in the northwest corner of the unit at approximately 70 cm below datum (b.d.) and which appeared to slope downhill in a southeastern direction from the centre of the mound. This very uneven, discontinuous layer was considered to represent a potential living surface. This surface sloped to a depth of approximately 1 m in N10E30 and 94 cm in

N11E30. The desire to leave it intact for more detailed future excavation necessitated the termination of the unit. Large deposits (as great as 40-x-30-cm in Level 2, 27-37 cm b.d.) of incongruous yellow-brown earth found in levels above the consolidated layer were interpreted as possible remnants of eroded adobe mud bricks, or *bahareque* (i.e., cane spackled with mud; cf. Salgado 1996:173). This adobe material was much softer than the grey material. Similar but more discontinuous concentrations of consolidated grey sand (beginning at a depth of 50 cm b.d.) and adobe (starting at 78 cm b.d.) found on the top of the mound in Unit N16E16 were assumed to be analogous to those found in N10E30/N11E30. Time constraints prevented this unit from being completely excavated, but in the deepest level (Level 9, 96-105 cm b.d.) the consolidated sand material appeared to form a surface that covered the entire southern half of the unit.

In part because of time constraints, only one unit, N30E40 and its extension N30E41, was excavated to sterile soil at Level 9 (a depth of approximately 1 m). While this unit on the northeast side of the mound (which was likely located off the original mound) did not feature a consolidated sand layer, Level 5 (50 to 60 cm b.d.) did reveal a concentration of yellowish material that may be adobe. Unit N30E10 on the north side of the mound was also stratigraphically undistinguished, other than a lightening in soil colour noted at Level 10 (120-130 cm b.d.)–the only true change in soil colour observed on the mound proper–and a chunk of possible adobe found beneath an almost intact pot in the following level. This unit was excavated to a depth of 160 cm b.d. (Level 13) before it was terminated for lack of time.

The deepest excavated unit, N20E30/N20E31, located on the east side of the mound, was excavated to a depth of 217 cm b.d. and still failed to reach sterile soil, though the number of artifacts diminished significantly in the lowest levels. Concentrations of possible adobe were also found in this unit at Level 9 (87-97 cm b.d.). While no consolidated sand layer comparable to that recorded in the units on the top and southeast sides of the mound was identified in this unit, the soil in levels 10 through 13 (97-137 cm b.d.) was observed to be very compacted in comparison to that in other levels, and this therefore might represent an analogous walking surface. The soil underlying this compact layer was also noted to be more humid. While an examination of the profile of this unit did not reveal any natural

stratigraphic layers, the deposition of ceramic artifacts left a relatively clear indication that the slope of the mound was at one time more pronounced than its present gentle slope (Figure 6.3).

In sum, the excavations of Mound 3 are provocative in suggesting possibilities for more extensive future investigations of the site. The presence of various packed surfaces suggests that living areas might be clearly (and perhaps even easily) defined with more excavation, and the discovery of adobe remnants on all three sides of the mound that were excavated as well as upon the top is consistent with the aforementioned ethnohistoric accounts of adobe brick mounds in the Rivas area, though the composition of Mound 3 would suggest that mounds, rather than being constructed entirely of adobe, were more likely to be constructed of earth and trash.

PRELIMINARY ANALYSIS OF ARTIFACTS

Because of delays in getting into the field, only a limited amount of time–approximately two weeks–was available following the excavations to conduct a preliminary laboratory analysis. To facilitate the cataloguing of artifacts, each shovel test and each individual level in each unit was assigned a unique "bag number": for example, shovel test N0E0 was labelled Bag 001, shovel test N0E10 was labelled Bag 002, etc., while Level 1 of Unit N10E30 was labelled Bag 100, Level 2 as Bag 101, etc. Lithic and ceramics artifacts were counted, labelled with indelible ink according to the site designation and bag number (though most individual artifacts were not assigned individual numbers), and sorted. Faunal material was only partially sorted according to class (and in a few cases, identified to family and species) and was not labelled, owing to time constraints as well as the small size and fragility of the vast majority of the bones. Ceramic body sherds were counted, re-bagged according to provenience and then set aside, while rim sherds, which were considered to be more diagnostic and useful for subsequent ceramic analysis, were sorted according to the standard Greater Nicoya Type-Variety system, subdivided according to vessel forms, and then re-bagged for storage according to these subdivisions. Because of the time constraints, only

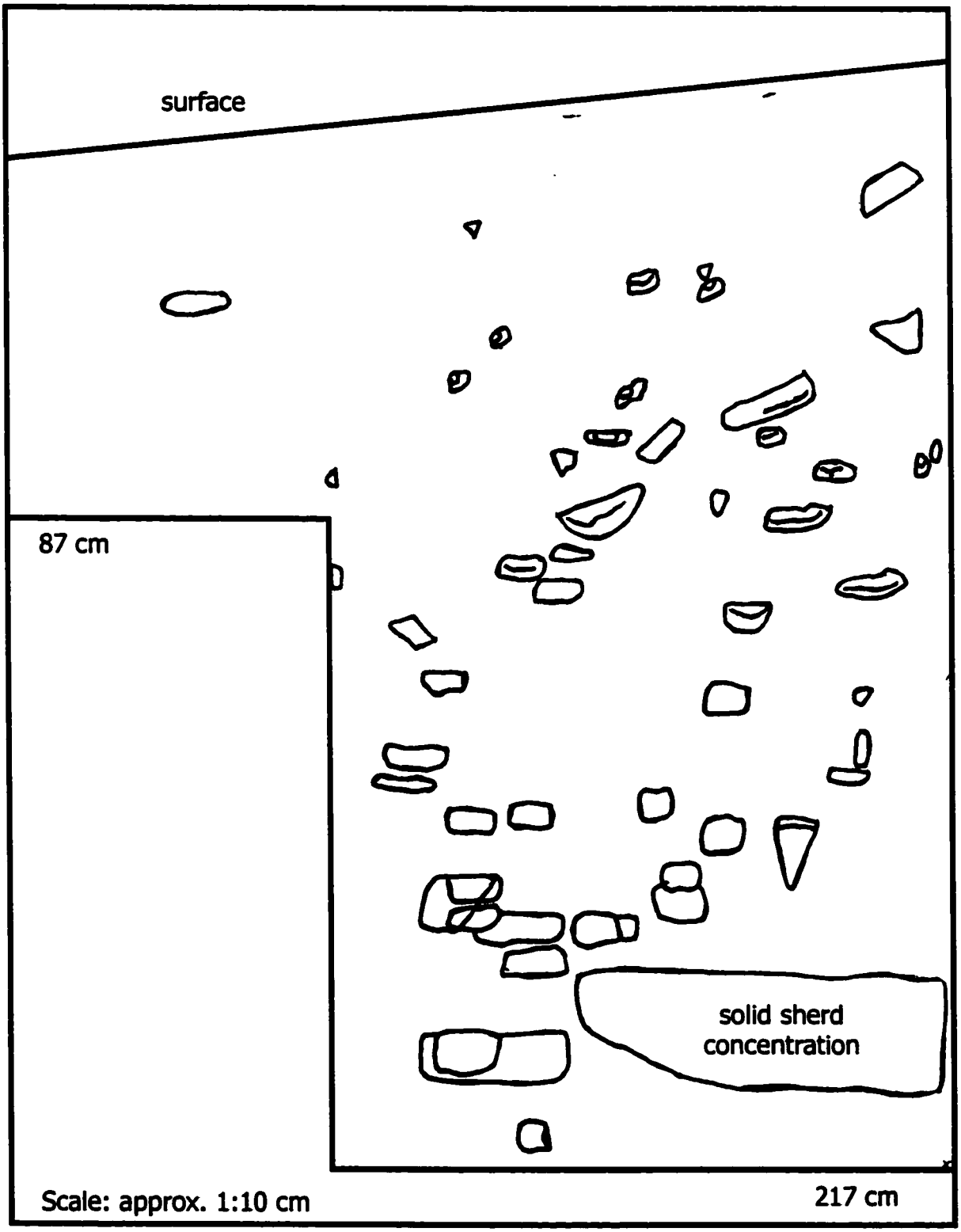

Figure 6.3 Profile of N20E30/N20E31 south wall, showing concentrations of potsherds

polychrome and decorated rim sherds were sorted during the initial analysis; monochrome rim sherds were separated from body sherds, counted and labelled, but were not sorted according to type or vessel form until the following summer. Primarily because they were so easily identified, modelled tripod supports–a very common feature in the pottery of this area–were also counted, labelled and sorted according to type and variety and catalogued in a fashion similar to rim sherds, as were several intact bases.

Several types of ceramic artifacts–including figurines, an ocarina, beads, pendants, tiny ceramic balls, spindle whorls, complete vessels and various types of reworked sherds (including net sinkers)–were assigned individual object numbers and catalogued separately from the rest of the ceramics. A number of miscellaneous other artifacts were also assigned object numbers in addition to their bag numbers: these included large stone tools (primarily ground stone fragments of manos and metates); beads, lip plugs and other types of jewellery; bone tools like fishhooks, needles and spindle whorls; fragments of *bahareque* and soil samples; and faunal remains that were singled out as being of particular interest (including a near complete turtle carapace).

While most of the excavated material from Santa Isabel was left in storage at the Rivas Museum (tied in plastic bags and placed into open wooden crates), radiocarbon samples and a type collection of diagnostic sherds were stored separately in a private residence in Managua in order to facilitate their export for additional analysis. Unfortunately, for reasons beyond the control of the University of Calgary team, these materials subsequently became unavailable (hopefully, only temporarily), and as a result, no radiocarbon dates are available for inclusion in this thesis. Selected materials from the excavations were catalogued and placed on exhibit in a display case in the Rivas Museum, though an inspection of the unlocked case the following summer indicated that certain artifacts had been removed.

During a three-week period the following summer, a smaller University of Calgary team (composed, with the exception of Dr. McCafferty and myself, of archaeologists who had not previously worked on the Santa Isabel project) returned to Rivas to conclude the preliminary analysis of the excavated material and gather additional data for my thesis. However, this additional analysis was hampered by several problems, the most serious of which pertained

to the storage of the material excavated during the 2000 field season. This material had been removed from its storage place inside the Rivas Museum and stacked along the *outside* back wall of the museum building, where it was exposed to tropical extremes of sun and rain! As a result, many of the plastic bags in which materials had been stored disintegrated, while those that remained partially intact were often waterlogged and mildewed from rain. Much of the previously analysed material was therefore partially jumbled and/or lost and required re-analysis, and a great deal of contextual information was lost when the identifying tags inside the plastic bags were lost or rendered illegible. A second major problem was the theft, only three days before the end of the project, of a backpack containing a notebook in which a great deal of ceramic data and most of my field observations had been recorded. While the lost data was re-recorded in a rather frantic all-night session, there is of course no knowing if any particularly salient observations were lost.

The re-analysis of the ceramics was facilitated by their identifying ink labels and by the inventory information collected in the previous season: for example, bags of "mystery" sherds could often be re-identified simply by counting the sherds and comparing the total with totals for individual types collected in 2000. However, the fact that individual sherds did not receive individual numbers and the earlier removal of the type collection confounded this task somewhat. Since recounts of sherds of a given type rarely produced exact matches with the previous year's counts, I could not determine whether the discrepancies owed entirely to the removal of an undocumented number of sherds for the type collection or partially to a loss resulting from the storage problems. Nevertheless, despite these challenges, I am reasonably satisfied that I was able to successfully reconstruct the original sorting of the ceramic material completed the previous summer.

The time consumed by the ceramic re-analysis inevitably limited the amount of time that was available to collect new information. My initial goals with regard to the ceramic assemblage including sorting monochrome rim fragments into types and forms (as was done with the polychrome rim sherds the previous summer) and measuring estimated orifice diameters and vessel wall thicknesses for a representative sample of all of the rim sherds (including both monochrome and polychrome sherds). While these goals were met, I had also

originally planned to spend several days examining ceramic fabrics (something which I had not had an opportunity to do in the previous season), since these are important in distinguishing between certain white-slipped polychrome types. However, I was forced to put off this time-consuming plan when it became obvious that the other project members could not proceed with the quantitative measurements until I had first re-sorted the jumbled material, and in the end there was simply no time to look at composition. There was also not enough time available to completely illustrate representative samples of all ceramic types (samples of all types were photographed, however), though rim profiles were illustrated for samples of all vessel forms within all ceramic types. We were also able to create a new, properly catalogued type collection, which was deposited with the National Museum in Managua.

Because a preliminary analysis of the lithic material had been completed by Nicaraguan archaeologist Jorge Zambrana during the 2000 field season, there was no need to re-sort the lithic material as there was in the case of the ceramics. While crew member Ruth Edelstein (a trained lithicist and PhD candidate at McMaster University) completed a more detailed study of our very small obsidian sample (n=12), her notes later went missing, and it seems most likely that they were stolen along with the notebook. Five samples of obsidian were left with the new type collection, with the intention of eventually having these shipped to Canada for sourcing. The faunal remains, which had not been fully sorted or counted in 2000 and which suffered much more severely from exposure, were written off for further analysis when it became apparent that most of the contextual information was completely lost–particularly unfortunate given their generally excellent state of preservation. Several soil samples that were heavily water damaged were also considered to be useless for future analysis.

In total, the Santa Isabel excavations recovered 32,696 artifacts, including 12,409 potsherds, of which 2318[10] rim sherds were singled out for analysis. These rim sherds, which

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[10]The original total of rim sherds was 2350: 32 monochrome sherds (1.4 per cent of the entire sample) included in the gross count of rim sherds made during 2000 were lost in storage before the monochromes could

not surprisingly (in light of Healy and Niemel's work) suggested a Sapoá-Ometepe Period occupation for the site, will be discussed in the following chapter. Other classes of archaeological material recovered from the site but which are not the focus of this thesis are briefly discussed below.

Lithics

A total of 1400 lithic artifacts were collected during the preliminary excavation of Santa Isabel. The vast majority (96%) were chipped stone artifacts of chert, basalt, andesite and obsidian (Table 6.4). Forty ground stone artifacts of basalt and andesite were also recovered, as well as an additional 16 lithics of unidentified material. As was the case with all artifact classes, shovel tests suggested a substantially higher concentration of lithic material upon the mound itself than in the field located east of it.

The only identifiable obsidian tools were fragments of Mesoamerican-style prismatic blades, which are likely to have been either trade items or heirlooms brought by migrants, since no Nicaraguan obsidian sources used by precolumbian groups have yet been identified (though cores have been reported; e.g., Niemel et al. 2001; Salgado 1996:262). While our obsidian frequency of less than one per cent was somewhat lower than that found by Willey and Norweb, who reported that obsidian made up about three per cent of their chipped stone assemblage (Healy 1980:284-85), it is possible that the difference owes as much to different collection strategies and/or screening practices as anything else. While the low obsidian count may appear surprising for a site with Mesoamerican connections, considering the ritual importance of obsidian in that area, it is in fact consistent with previous studies (e.g., Lange et al. 1992; Salgado and Fletcher 1994) that have noted that obsidian frequencies dwindle dramatically moving southward through Greater Nicoya, dropping from nearly 100 per cent in areas near the northern border of Nicaragua to near absence in Costa Rica (Salgado 1996:268).

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be sorted and typed during the 2001 field season.

Table 6.4 Lithic summary

	tool	material	class	percentage
CHIPPED STONE			1344	96.00
OBSIDIAN		12		0.86
Unidentified tool	4			0.29
Prismatic blade	2			0.14
Flake, unutilised	3			0.21
Shatter	3			0.21
CHERT		1277		91.21
Drill/other tool	21			1.50
Biface	1			0.07
Flake, utilised	11			0.79
Flake, utilised w/cortex	6			0.43
Projectile point	11			0.79
Flake, unutilised	186			13.29
Flake, unutilised w/cortex	67			4.79
Shatter	934			66.71
Shatter w/cortex	7			0.50
Core	32			2.29
Nodule	1			0.07
ANDESITE		17		1.21
Chopper/Axe	13			0.93
Flake, utilised	2			0.14
Flake, unutilised	1			0.07
Shatter	1			0.07
BASALT		38		2.71
Biface	3			0.21
Flake, utilised	14			1.00
Flake, unutilised	13			0.93
Shatter	8			0.57
GROUND STONE			40	2.86
ANDESITE		11		0.79
Metate	7			0.50
Mano	4			0.29
BASALT		29		2.07
Metate	10			0.71
Mano	15			1.07
Mortar	2			0.14
Pestle	1			0.07
Unidentified ground stone	1			0.07
MISC. OTHER LITHIC			16	1.14
Hammer/pounding stone	5			0.36
Polishing stone	2			0.14
Bead	1			0.07
Unidentified lithic	7			0.50
Core	1			0.07
TOTAL			1400	100.00

Chert fragments (mostly shatter and flakes) obviously comprised the vast majority of the lithics, a fact that stands in dramatic contrast to the findings of Willey and Norweb, who found that chert (and chipped stone artifacts in general) was *less* common than ground stone in Rivas archaeological contexts (Healy 1980:283-84). While once again the differences may owe to different collection or screening practices, the high frequency of chert might also suggest that the site served as a lithic production centre. Indeed, more than 96 per cent of the chert artifacts were suggestive of stone tool manufacture, including 32 cores and numerous other debitage fragments. High frequencies of shatter and flakes tended to be found in contexts that associated them with cores, suggesting possible work areas. One such area may have been located in the vicinity of shovel test N10E20, which produced five of only 11 projectile points for the whole site, two of only four bifaces, the largest concentration of cores in one shovel test or level, and one of the largest collections of chalcedony shatter in the site. Only six per cent of the flakes and shatter featured cortex, suggesting that the initial stages of tool manufacture may have taken place elsewhere–a pattern of production that would conform to that observed by Salgado (1996:256) for the Granada area.

Five different classes of chert were identified in the field: chalcedony, white chert, red chert, other chert and jasper. The most common types of chert tools included drills, large projectile points (possibly used for lances or spears) and utilised flakes. Drills were small and featured short, pointed "bits", and may have been used to drill holes in shell or the numerous worked sherd "pendants" recovered from the site (see below). Other identifiable chipped stone artifacts included 13 coarse andesite "choppers" or "axes" and three basalt bifaces. These may have been used in cultivation as hoes or as axes for cutting wood.

None of the few ground stone artifacts of basalt and andesite recovered featured the distinctive elaborate carved decoration for which Greater Nicoya is famous, and as noted above, the small percentage of ground stone contrasts dramatically with Willey and Norweb's findings for Rivas. Fragments of manos, metates, mortars and a single pestle were recovered, though no intact artifacts were. While Healy (1980:274) reports only basalt metates from Willey and Norweb's work, our excavations found both basalt and andesite metates. Other lithic artifacts of unknown material included possible hammer stones and polishing stones,

a single red stone bead, a small (1.4 cm) irregular lump of amber and a flat, perfectly round (diameter: 7 mm) whitish-green stone or shell that may have been an inlay in a piece of jewellery.

In sum, the preliminary examination of the lithics provides evidence suggestive of hunting and/or warfare (e.g., projectile points), food preparation (e.g., manos and metates) and cultivation (e.g., choppers), and specialised production (e.g., chert drills) (McCafferty et al. 2002).

Faunal Remains

A preliminary examination of the faunal collection from Santa Isabel was initiated by University of Calgary graduate student Deepika Fernandez during the 2000 field season. While this analysis was incomplete, the preliminary portion of the analysis merits mention, and the following discussion is therefore largely based on Fernandez's initial findings, except where noted (e.g., Fernandez et al. 2002).

Faunal remains, like all other artifact classes, generally decreased farther away from the mound. Number of Identifiable Specimens (NISP) was used to quantify these remains. The preliminary analysis was sufficient to provide a general idea of the types of species present. The greatest percentage of faunal remains belonged to lacustrine and/or potentially aquatic species, including fish, shellfish and reptiles, while mammals and birds accounted for much smaller percentages (Table 6.5). These percentages under-represent the proportion of mammals utilised–since the mammal remains we found tended to be from larger specimens and obviously provided greater meat–and over-represent the importance of fish (since fish have many tiny bones) and shellfish (since the shell that was recovered was typically very fragmented).

Table 6.5 Faunal summary

fish	shellfish	reptile	mammal	bird	unclassifiable
31%	22%	17%	11%	1%	17%

The great quantity of fish bones contrasted with an earlier faunal analysis of material collected by Willey and Norweb from the same site that specifically noted an almost complete lack of fish remains (Pohl and Healy 1980:290). However, Pohl and Healy observe that this lack is out of step with the large number of net sinkers excavated from the same site, and suggest that different collection methods might have produced different results more in keeping with Santa Isabel's proximity to Lake Nicaragua. A large quantity of possible apple snail shell (*Pomacea flagellata*) found near the mound's centre in the upper levels of unit N16E16 was also intriguing, particularly inasmuch as other notable faunal remains, including an unworked deer antler, a deer scapula and pelvis, crab claws and a pond or mud turtle carapace were also found in this unit. A second unit on the edge of the mound, N30E40, contained an enormous concentration of scales from both fish (an unknown species of gar) as well as reptiles. McCafferty (personal communication 2002) suggests that this evidence argues for the differential disposal of the various faunal types across the mound.

The partial preliminary analysis therefore suggests that lacustrine resources played an important role in diet. However, terrestrial resources were probably also important, and if deer hunting was indeed a privilege reserved for nobles, as Oviedo suggested (Healy 1980:290), the deer remains found in N16E16 may argue for the location of an elite residence upon this mound.

Miscellaneous Ceramic Objects

In addition to the thousands of potsherds from ceramic vessels, a small number of miscellaneous ceramic objects were recovered from Santa Isabel. These included several small ceramic vessels which appeared to have been of a somewhat unique nature, and which are therefore discussed here. Two intact vessels, which may belong to a type tentatively identified in the next chapter as "Unspecified Black", were dark brown burnished "bottles" of similar height (7 cm) and diameter (7.5 and 8.3 cm) with narrow necks (orifices of 3 and 3.8 cm) (Figure 6.4). Both vessels were covered with shallow, nearly complete bowl "lids" of unknown types (diameters: 9 and 6.8 cm), and for this reason are assumed to have been intentionally interred. When the soil samples within each bottle were separately poured into water and

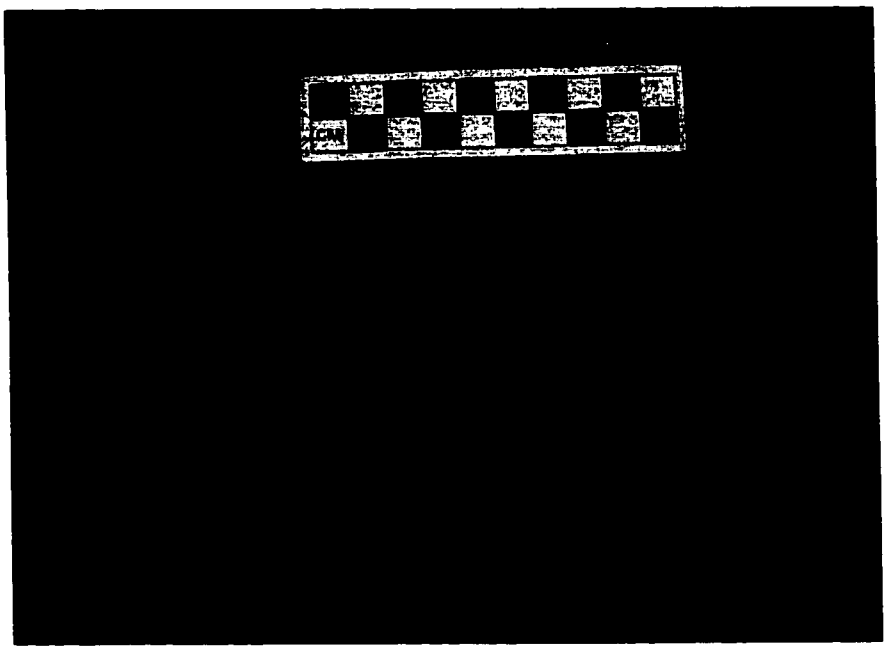


Figure 6.4 Unspecified Black "bottle" with "lid"

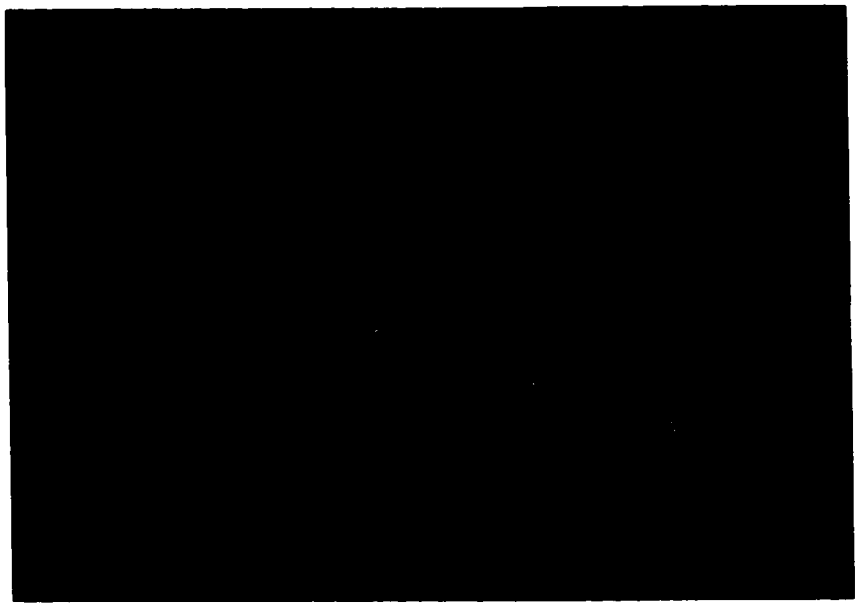


Figure 6.5 Ocarina

sifted with a fine mesh screen, they both revealed a multitude of tiny, unidentified bones, possibly fish. It is possible that these artifacts may represent some sort of ritual offering and, in fact, a local informant visiting our laboratory facility was visibly upset by the artifacts and claimed that similar bottles were often buried by modern witchcraft practitioners. The bottles may be analogous to four "coarse, plain miniature bowls" found alongside a figurine and an adorno in the excavation of Mound 1 by Willey and Norweb (Healy 1980:55). Two other vessels which could be partially reconstructed were miniature "shoe pots" 9.7 and 8.7 cm long that featured the brushed surface characteristic of Sacasa Striated pottery (Healy 1980:216). While much larger Sacasa Striated urns of similar form are used for burials in Greater Nicoya, the function of these miniature versions is unknown.

Ten spindle whorls might provide evidence of the Nicaraguan cotton weaving industries that were admired by chroniclers (e.g., Andagoya 1865:33; Joyce 1971:41). Four of these were specially manufactured and decorated with incised patterns, and are similar to those depicted in Healy (1980:267; Figure 123). Another six were rounded potsherds that had been drilled and reworked to serve this purpose, though several are so large that it is unlikely they were used to spin cotton (Geoffrey G. McCafferty, personal communication 2002). Experiments in the field by Sharisse McCafferty found that when these were fitted with a wooden shaft, they proved quite adequate for the task of spinning. Such recycling of potsherds appears to have been common practice at Santa Isabel: in all, 105 reused sherds that might have served a variety of uses were identified (cf. Healy 1980:266-270).

Other recycled sherds included 15 notched sherds with an average length of 5 cm that were similar to net sinkers identified by Healy (1980:269, 290); 43 sherds perforated near their edges (typically ovular, with an average diameter of approximately 5 cm) which may have been used as pendants or possibly as a different form of net sinker (an interpretation supported by the fact that *all* types of worked sherds tended to be found clustered in the same contexts); and 41 miscellaneous worked sherds, some of which were similar to the ovular perforated sherds only lacking their perforations, and which may have been blanks awaiting drilling or, alternatively, used for purposes such as gaming pieces or potholders (Healy 1980:269). Inasmuch as the original types to which these potsherds might have belonged

could be identified, they seemed to be recycled from both monochrome and polychrome pottery types traditionally dated to both the Sapoá and Ometepe periods–consistent with the rest of the ceramics recovered from the site.

Thirteen small ceramic balls with an average diameter of approximately 15 mm were recovered. Several of these were very rounded and covered with a fugitive white slip, while others were much more irregular. Some of these balls likely served as rattles in hollow ceramic supports (a common feature in Greater Nicoyan pottery, as our own recovery of numerous intact supports attested). Alternatively, some balls may have served as possible projectile pellets for slings or blowguns, or perhaps as game pieces (McCafferty and McCafferty 2000). Similarly-sized ceramic balls are also discussed by Healy (1980:271).

Nineteen fragments of hollow Papagayo-style figurines were recovered, though it is possible that some of these fragments can also be associated, like the ceramic balls, with hollow vessel supports, which are often modelled to resemble human faces or figures. However, a single more complete white-slipped polychrome figurine of a woman with clearly defined breasts and a rounded, possibly pregnant belly could be identified more definitively as a mould-made Papagayo figurine, a type of artifact common in Greater Nicoyan museum collections and often reported in excavations in the area (e.g., Benson 1981; Healy 1980; Salgado 1996). Five other fragments of solid red-slipped figurines were identified by Niemel as being typical of the Bagaces Period, predating most of the ceramic remains at the site. All of these figurines are generally consistent with those from Rivas contexts described and depicted by Healy (1980:257-266). Also recovered was an intact (and still playable) ocarina (Figure 6.5), which from one perspective resembled a bird and from another, the head of a dog or pig-like animal (possibly a peccary). Similar instruments continue to be popular tourist items in Nicaraguan and Costa Rican markets.

Several artifacts of ceramic jewellery were found at Santa Isabel. Perhaps the most intriguing of these, given the importance of cacao in the ancient economy, was a 7.5 cm-long "pendant" perforated at each end that bore an intriguing resemblance to a cacao pod (Figure 6.6). Also intriguing, considering the connections between Rivas and Mexico, was a large bead (diameter: 2.3 cm) perforated for suspension and appearing to be decorated with the

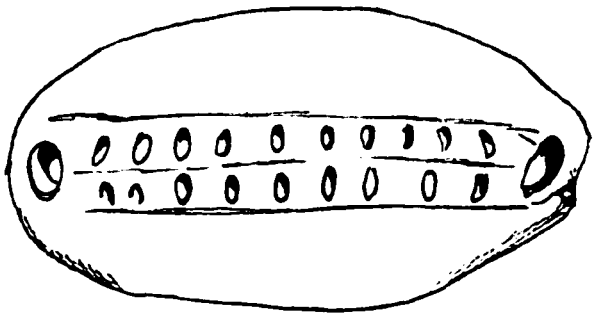


Figure 6.6 Cacao pod pendant

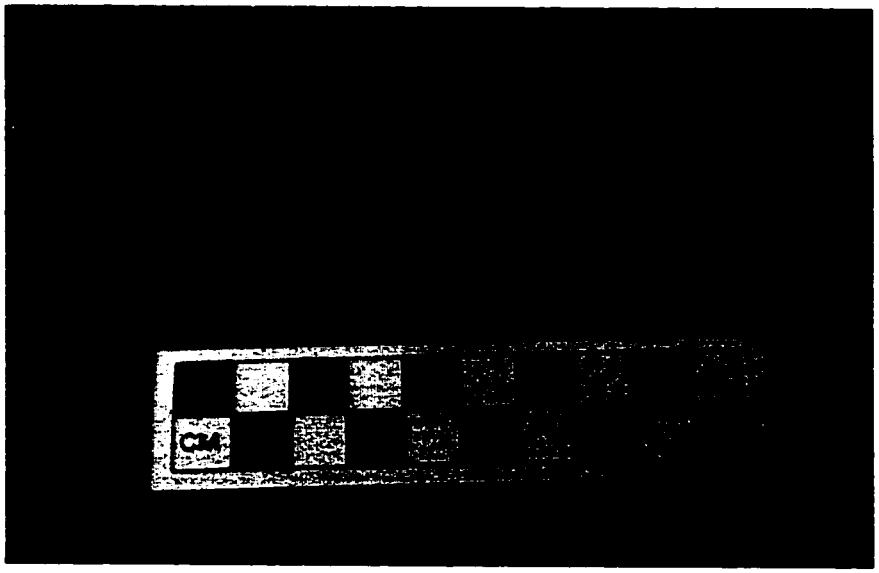


Figure 6.7 "Tlaloc" bead

incised goggle eyes and fangs of the Central Mexican rain deity Tlaloc (Figure 6.7). A local informant suggested that such beads had been previously found in the general Rivas area. Unfortunately, this unusual bead was one of the objects identified as missing from the unlocked display case at the Rivas Museum during the summer of 2001. Three other ceramic beads were recovered: one representing a turtle carapace or frog body with its extremities curled up at its side; the second, a simple long bead segmented into three sections that was probably threaded onto a necklace, and the third, a simple tiny ball. Two dark brown ceramic (or possibly polished stone) "spools" with diameters of 0.9 and 1.5 cm were also found. Healy (1980:271) suggests that ear spool diameters average between 2 and 2.5 cm, while labrets average from 1.5 to 2 cm; this would therefore suggest that these two spools are more likely to be labrets than ear spools.

As noted above, fragments of possible adobe bricks or *bahareque* were found in all excavated units upon Mound 3. While the highly degraded state of most of these (which were essentially eroding into the surrounding soils) made it impossible to excavate them intact and difficult to clearly delineate their dimensions, these concentrations of yellow-to-brown material remained quite obvious when encountered in the usually much darker soils of the mound. Some concentrations were found in sizes that suggested adobe blocks, and several lumps featured cane impressions approximately 1.2 to 1.5 cm in diameter. These adobes seem analogous to Willey and Norweb's "briquets", many of which also featured cane impressions (Healy 1980:272-274: Figure 124). Salgado reports *bahareque* around the perimeter of excavated house structures (1996:173), which would seem to suggest it was perhaps used to seal cane walls, and ethnohistoric accounts tell of adobe-faced mounds in the area; however, the fragments identified by the Calgary team could not be specifically identified with either of these functions.

Bone Tools and Objects

Despite the excellent state of preservation of bone and shell at Santa Isabel, only a handful of bone and shell objects were excavated. These included two tiny fishhooks (both under 2 cm long); an earspool with a larger diameter (2.5 cm) than the ceramic labrets; one

bone and two shell beads (the latter drilled with holes so fine that only one-ply cotton thread could be passed through them); and a triangularly shaped shell pendant about 2.7 cm long. Several bone tools could be specifically associated with textile manufacturing, including a spindle whorl, two needles and two awls, and part of a possible weaving pick. Willey and Norweb's excavations in Rivas appear to have recovered even less in the way of bone tools (Healy 1980:285).

CONCLUSIONS

The brief discussion of the archaeological materials from Santa Isabel presented here suggest a number of interesting directions for future research, many of which have important implications for the identification of Nicaraguan ethnic groups in the archaeological record. The identification of the sources of lithic materials should be an obvious priority, and some work has already been done in this field, as noted in chapter 2. As we have seen, this work has generally focussed on sourcing obsidian and has suggested that almost all obsidian tools in Rivas and Nicaragua in general originated in Mesoamerica, outside Greater Nicoya (e.g., Lange et al. 1992; Niemel 2002; Salgado 1996). However, the far greater prevalence of chert at Santa Isabel would seem to suggest that the energies of lithicists working in the area may have been misdirected somewhat by the interest in the migration question. Nicaraguan archaeology should be at *least* as interested in identifying local quarries of other materials such as chert, basalt and andesite–such as the potential basalt quarries identified by Baker on Ometepe Island (2002)–if it wishes to truly build a comprehensive picture of stone tool production and use in ancient Nicaragua. Stone tool production, like ceramic production, is an excellent candidate for a *chaîne opératoire* approach, and given that lithic specialists were quite likely at work at Santa Isabel, a more detailed study of the site's lithics might have the potential to reveal patterns of habitus that could be correlated with those that might be derived from an analysis of ceramic production, and thereby facilitate attempts to identify the presence of distinct ethnic groups at the site.

Faunal analysis has been successfully used in previous attempts to identify ethnic groups (cf. Crabtree 1990:177-181) and might also be able to eventually assist in the identification of distinct Nicaraguan ethnic groups (and possibly elite and commoner groups as well, if elites indeed had the sole right to exploit certain species like deer). This is especially likely given the excellent preservation of faunal remains at Santa Isabel and given that the Nicarao and Chorotega, as noted in chapter 5, do seem to have possessed at least some distinctive culinary preferences. However, the focus of previous archaeological work in Nicaragua on ceramics and, to a lesser extent, lithics means that there is presently no comparative faunal database to speak off, so identifying distinctions between assemblages associated with different groups must await further excavations. Other interesting questions that emerge from the preliminary analysis of our faunal collection pertain to the apparent differential disposal of remains–since patterns of trash disposal, as the product of habitus, might provide another way of "getting at" ethnicity–and the possibility that some of the remains at the site might have nothing to do with human dietary practices. Animals die natural as well as unnatural deaths, and it is not impossible that the heavy concentration of primarily intact snail shells found at the top of the mound in Unit N16E16 might have been produced by a population living in a collapsed, rotting structure.

Finally, some of the miscellaneous artifacts and objects might also prove useful as ethnic markers if they can be associated with ethnohistorically known groups. Since different religious beliefs and practices often emerge as salient in ethnic identity, different ethnic groups might be distinguished by items associated with possible ritual behaviour, such as the small pot "offerings" or the figurines, though once again, a more complete comparative database is needed to test this assumption. A detailed analysis of the various artifacts associated with weaving and textile production, particularly spindle whorls, might prove useful in identifying different habitual practices associated with weaving: decorations on spindle whorls and preferences for different materials in the construction of whorls (for example, a preference for bone over ceramic or wood, or for recycled sherds over specifically manufactured whorls) might also be useful as markers. Since ethnic identity is often marked through personal adornment, non-perishable artifacts such as labrets and earspools, or

figurines that suggest distinctive costumes, might eventually prove to be particularly useful in identifying different groups. As already noted, Brumfiel uses labrets for this purpose in her work in Central Mexico (1994:98ff). Obviously, however, with only two possible labrets and one possible ear spool so far from our excavations Santa Isabel, it would be premature to attempt to use these as markers of anything at this time.

We noted in chapter 5 that the identification of patterns of co-variation *between* different artifact classes might reveal the orchestrating effects of habitus at work, and that this might in turn provide supporting evidence for the identification of ethnic groups in the archaeological record. While the preceding discussion has suggested some possible artifact classes in which co-variation might be compared with ceramics, it is now time to turn our attention specifically towards ceramic vessels themselves, and look for co-variation *within* this class of artifacts. This is the subject of the following chapter.

Chapter 7
CERAMIC ANALYSIS

In preceding chapters we have observed that one way to begin to identify ancient ethnic groups archaeologically would be to re-examine the ceramic database to look for evidence of different habitus. Variations in ceramic form, patterns of use and decoration all have the potential to reveal the workings of habitus, and the technical systems approach suggests that variations in form are particularly likely to reflect different potting traditions that are the products of different habitus. In the following analysis we will therefore attempt to identify the structuring structures of habitus in patterns of co-variation between different aspects of ceramic form–specifically, preferences for specific vessel shapes, orifice diameters and rim thicknesses–within individual Nicaraguan ceramic types defined by decorative variation.

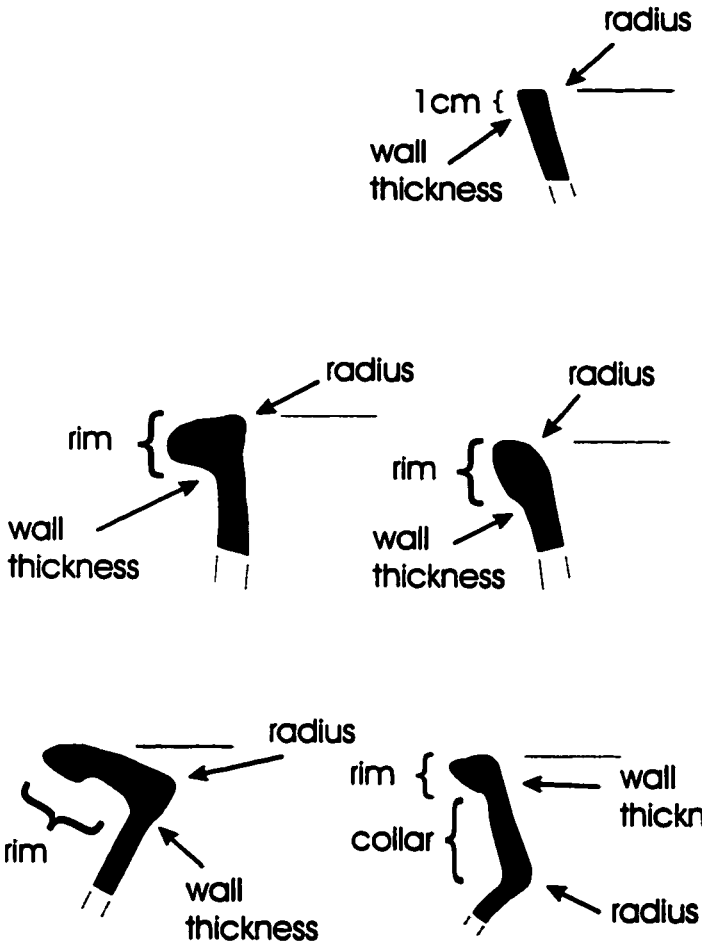
DATA COLLECTION METHODS

As explained in chapter 6, the analysis of the ceramic material recovered from Santa Isabel focussed on easily identifiable rim sherds. These were not only considered to be more diagnostic of form but also more amenable to analysis in the limited time available; however, it is acknowledged that this exclusive focus on rim sherds may have led us to overlook certain ceramic types for which rim sherds were not found. Under the guidance of Karen Niemel, decorated rim sherds were sorted using the Type-Variety system (see below) and subdivided according to general vessel shapes. Modelled supports (solid as well as hollow), also easily identifiable, were also sorted according to type and catalogued, though time did not permit any additional analysis of these. The presence or absence of supports could not be used as one of the criteria for the sorting of vessel shapes because in most cases it was impossible to determine from a rim sherd whether or not a pot featured such a support. Work in the following field season involved the similar sorting of monochrome rim sherds and resulted in some minor reorganisation and correction of vessel shape categories, based on my own increased familiarity with the ceramic material at that time.

In the second field season data were also collected on vessel wall thickness and orifice diameters. Using Vernier calipers, measurements of wall thickness were taken either 1 cm below the lip for rim sherds lacking modelled rims, or, for sherds featuring modelled rims, at the intersection of the modelled rim and the body or collar of the vessel (Figure 7.1). Original orifice diameters were estimated by aligning rim sherds on a chart featuring a series of concentric rings with increasing diameters, an easily learned and commonly applied approach referred to by Plog (1985:244) as the "curve-fitting method". While there is a possibility of minor observer error using this method, most of the diameter estimates were carried out by two project members with similar training who tended to produce similar results, so the measurements (taken as radii) obtained for the entire sample are likely to be consistent.

The relatively large size of our rim sherd sample (n=2318) and limited time available to examine it made it impossible to collect these quantitative measurements from the entire sample. Instead, measurements were collected from an arbitrarily selected maximum of 50 rim sherds within a given variety or (in cases where types were not subdivided into varieties) type. For example, while only 50 of the 117 rim sherds of Papagayo: Mandador (one of the most common varieties identified at Santa Isabel) were measured, all 14 of the available[11] rim sherds of Granada Polychrome (a much less common type with no varieties) were measured. The selection of samples of 50 rim sherds from within a given type or variety generally focussed on sherds where measurements could actually be recovered (in some cases the degree of arc on a sherd was insufficient to fit it to a curve and therefore estimate its diameter) and attempted to preserve, in a very general way, the formal diversity of the original sample, while also attempting to obtain a minimum of 10 sherds per vessel form. That is to say, if the majority of the sherds of a given variety such as Papagayo: Mandador were composite silhouette bowls, the majority of the 50 sherds selected for quantitative

[11]Note that in this context, the reference to "available rim sherds" reflects the fact that certain sherds were "lost" for the purposes of the 2001 field season analysis, owing either to their loss in storage or their undocumented removal into the 2000 type collection (see chapter 5 for details). In the case of Granada Polychrome, for example, 25 rim sherds were originally identified in 2000, but only 17 remained "available" in the collection at the Rivas Museum in 2001.



Thickness of sherds without modelled rims was measured at 1 cm below the lip.

Thickness of sherds with modelled rims was measured at the intersection of the rim and body.

Thickness of sherds with modelled rims and collars was measured at the intersection of the rim and the collar. "Collars" oriented more horizontally than vertically were treated as part of the rim, and wall thickness was measured accordingly.

Figure 7.1 Location of wall thickness measurements

measurement from within this variety were also composite silhouette bowls. In total, data regarding wall thickness and orifice diameter were collected from almost a third (752 rim sherds, or 32 per cent) of the entire collection.

DECORATIVE VARIATION

Based on decorative variation and surface treatment, the preliminary analysis of rim sherds from Santa Isabel suggested the presence of at least 34 distinct varieties constituting 23 possible ceramic types (Table 7.1). Two other ceramic types were tentatively identified based on casual observations of the largely unanalysed body sherds. In all, 18 types could be specifically identified with types previously described in the standard Greater Nicoya Ceramic typology.

The Greater Nicoya Ceramic Typology

The ceramic typology in standard use in Greater Nicoya is based on the familiar Type-Variety system of classification used in much of Mesoamerica (Healy 1980:80-81; for discussions of the Type-Variety system in general see Adams 1971; Gifford 1976; Sabloff 1975; Willey et al. 1967). While this classification is theoretically based on combinations of a variety of attributes, including decorative, shape, technical and design modes, in practice–or at least in Greater Nicoyan archaeology (cf. Salgado 1996:110)–the greatest emphasis is generally placed upon decoration, and there are few, if any, Greater Nicoyan types that cannot be identified solely upon the basis of this criterion. The downplaying of the importance of attributes such as ceramic fabric or paste in classification–factors that might reveal significant variation within types–has been criticised as a weakness of the Type-Variety system as applied in Central America (Lange et al. 1992:176), although it would be perhaps more accurate to say that this is not so much a criticism of the system as it is a criticism of the way in which it is (mis)applied.

The Type-Variety approach was first implemented in the Greater Nicoya subarea in the 1960s by Coe and Baudez (e.g., Baudez and Coe 1962; Coe and Baudez 1961), though the

Table 7.1 Summary of frequency of types (rim sherds)

	Variety		Type		Period	
	No.	%	No.	%	No.	%
SERVING-CEREMONIAL VESSELS, TEMPISQUE & BAGACES					7	0.3
Leon Punctate	2	0	2	0		
Rosales Zoned Engraved	1	0	1	0		
Schettel Zoned Incised	1	0	1	0		
Obando Black-on-Red	1	0	1	0		
Unspecified Red Incised	1	0	1	0		
Unspecified Red	1	0	1	0		
SERVING-CEREMONIAL VESSELS, SAPOÁ OR OMETEPE					744	32.1
Granada Polychrome	25	1	25	1		
Mora Polychrome	1	0	1	0		
Papagayo: Variety Indeterminate	184	8	515	22		
Papagayo: Alfredo	54	2				
Papagayo: Casares	30	1				
Papagayo: Cervantes	20	1				
Papagayo: Fonseca	63	3				
Papagayo: Mandador	117	5				
Papagayo: Manta	25	1				
Papagayo: Pica	3	0				
Pataky Polychrome	19	1	19	1		
Unspecified Black	48	2	48	2		
Unspecified Red-on-White Bichrome	3	0	3	0		
Ricardo Red	108	5	108	5		
Unspecified White-Slipped Polychrome	25	1	25	1		
SERVING-CEREMONIAL VESSELS, OMETEPE					303	13.1
Bramadero Polychrome	6	0	6	0		
Castillo Engraved	28	1	28	1		
Luna Polychrome	4	0	4	0		
Madeira: Las Marias	84	4	99	4		
Madeira: Banda	5	0				
Madeira: Variety Unspecified	10	0				
Ometepe Red-Slipped Incised	2	0	2	0		
Vallejo: Variety Indeterminate	23	1	89	4		
Vallejo: Vallejo	52	2				
Vallejo: Variety Unsp. w/Papagayo-like fabric	4	0				
Vallejo: Mombacho	10	0				
Unspecified Cream Polychrome	11	0	11	0		
Unspecified Buff	24	1	24	1		
Unspecified White-slipped, w/late-style fabric	40	2	40	2		
UTILITARIAN VESSELS, SAPOÁ & OMETEPE					984	42.5
Rivas Red: Rivas	622	27	778	34		
Rivas Red: Variety Unspecified	156	7				
Sacasa Striated	142	6	142	6		
Unspecified Unslipped Monochrome	64	3	64	3		
INDETERMINATE "TOO SMALL" SHERDS	299	13	299	13	299	12.9
TOTALS	**2318**					**100**

present typology incorporates as types or varieties several classificatory units originally described by early researchers like Lothrop (1926). For example, the modern type known as Luna incorporates the same ceramics first described by that name by Bransford (1881). Healy's work (1974, 1980), which followed the method for describing types developed by Sabloff (1975) in his study of the ceramics of the Maya site of Seibal, provided a substantial refinement of types for the Rivas area and also incorporated elements of modal analysis (Gifford 1976:8). Healy more rigorously applied the Type-Variety approach by also sorting types into *ceramic groups*, "super-types" based on similar decorative treatments; *wares*, a broader classificatory category that subsumes both surface finish and paste composition; and *decorative modes*, based on the primary surface treatment attribute (e.g. slipped, striated, polychrome, incised, etc.) (1980:82-87; cf. Gifford 1976:14, 17). Based on his own Rivas chronology, Healy also assigned types to *ceramic complexes*–"all the pottery utilized by an archaeological culture in a certain geographic setting and during a particular interval of prehistoric time" (Gifford 1976:11; cf. Willey et al. 1967:304). He also assigned types to tentative *ceramic spheres* (Willey et al. 1967) based on the general location where they were commonly found (for example, ceramics whose distribution was limited to the Isthmus of Rivas were assigned to a common Rivas ceramic sphere), but felt that at the time of his study it was premature to give names to these spheres without first consulting with other archaeologists working in the region (Healy 1980:85).

Subsequent ceramic studies in Nicaragua have generally not followed Healy's lead and have focussed only on classifying ceramics according to type and variety, avoiding the potentially useful task of establishing a common nomenclature for classifying types into ceramic groups, wares, complexes, spheres, or any of the other various classificatory categories developed by proponents of the Type-Variety approach. However, the standard typology did continue to be refined through various conferences and publications in the 1980s and 1990s, as noted in chapter 2 (e.g., Bonilla L. et al. 1990; Day 1984a, 1984b, 1984c; Hoopes 1987, 1994a, 1994b; Niemel et al. 1998; Salgado 1996), and has been an important tool in chronology building for Greater Nicoya.

As the ceramic database for Greater Nicoya became increasingly well known, it became apparent that a number of types (especially in the later Sapoá and Ometepe periods) tended to be restricted in their distribution to either the northern or southern sector (that is, Pacific Nicaragua or Guanacaste and the Nicoya Peninsula) while others, most notably Papagayo Polychrome, tended to be pan-regional, though these pan-regional types might include northern and southern varieties (Bishop et al. 1988:41-42; Lange 1984:167). Ceramics found in archaeological contexts overwhelmingly suggested a north-to-south distribution pattern: while northern sector types are commonly found in Costa Rica, southern sector types are rare north of the Costa Rica-Nicaragua border. It also became apparent that various cream, salmon and tan-slipped southern sector ceramics curiously appeared to parallel white-slipped northern sector types: individual varieties of Jicote Polychrome, for example, are named for analogous northern sector types Luna, Pataky and Madeira, as well as two specific varieties of northern sector Vallejo (Lazo and Cara) and a supposedly "southern sector" type, Bramadero, that actually groups compositionally with Luna and Madeira (Bishop et al. 1988:41; Canouts and Guerrero 1988:216). The reasons for these parallels are not well understood; while the Jicote varieties are typically considered to be cheap "knock-offs" of northern types because they feature poorer quality brushwork and fewer "Mesoamerican"-style design elements, Canouts and Guerrero (1988:216, 249-51) argue against the introduction of whole new design systems from the north to explain similarities between Jicote and Vallejo varieties. On the other hand, the fact that no less than a half dozen northern varieties have southern analogues, combined with the general pattern of movement of ceramics from north to south, would suggest that copying of imported artifacts might provide a simpler explanation than parallel evolution of ceramic styles.

Distinctions between northern and southern sector types were seemingly confirmed in the 1980s by the Greater Nicoya Ceramic Project, which examined 1200 ceramic sherds collected from across the subarea using neutron activation analysis (NAA) (Bishop et al. 1988; Lange et al. 1992; Lange, Canouts and Salgado 1992). The results of this study as well as subsequent petrographic work suggested that compositional analysis studies co-varied favourably with previous typological analysis: that is, "ceramics that look like they belong to

the same typological group will also belong to the same chemical group or to closely related groups" (Lange, Canouts and Salgado 1992:176). This work suggested two distinct zones of ceramic production in Nicaragua: one in the general Isthmus of Rivas area (including Ometepe Island) and another extending north from the Managua area to the Gulf of Fonseca (Lange et al. 1992:160). Other zones of production were identified in Costa Rica. More specific locations for production within Nicaragua have not yet been identified.

A weakness of the typology in its present form is that its focus on the impressive decorated ceramics of Greater Nicoya has resulted in the comparative neglect of less spectacular, undecorated monochrome types. Healy's study of Rivas ceramics, for example, reports "thousands" of sherds of Rivas Red, a red-slipped utilitarian ceramic found in all sites and in contexts from every period in the Rivas region (1980:205, 207). However, the compositional variation, great time depth, and range of vessel forms reported for Rivas Red (1980:205) suggest that Healy may have defined this type too broadly, using it as a "dumping ground" for vessels with a greater degree of variation in form than in decoration. Unfortunately, the Greater Nicoya Ceramic Project did little to increase understanding of the production of types such as this because the ceramics subjected to NAA analysis were almost exclusively decorated types (Lange, Canouts and Salgado 1992:175).

Another potential weakness of the typology is the tendency to base distinct varieties on potentially trivial decorative differences, although this is not out of step with the definition of *variety* commonly applied within the Type-Variety system, where varieties differ from each other "only with reference to lesser technological and aesthetic or technico-stylistic attributes" (Gifford 1976:10). The Mandador and Fonseca varieties of Papagayo, for example, differ primarily in the placement of their decoration: Mandador bowls are painted on the outside with a red band on the inside rim while Fonseca bowls reverse this pattern. A similar distinction separates the Manta and Pica varieties. However, neither this weakness nor the focus on decorated ceramics was considered to be sufficiently serious to warrant the development of a completely new typology for the purposes of this thesis, although new classificatory categories based on inferred use and possible chemical composition were also applied in this study.

Santa Isabel Ceramic Types

For the purposes of this analysis, the individual ceramic types of Santa Isabel have been grouped into two larger categories based on inferred use: *serving-ceremonial vessels* and *utilitarian vessels* (Table 7.1). Serving-ceremonial vessels include all polychrome and otherwise decorated ceramics, as well as higher quality monochrome ceramics that are morphologically more similar to the decorated ceramics than they are to the other monochromes that make up the utilitarian vessel class. As the category names imply, serving-ceremonial vessels are generally "fancier" and were likely used for serving food or for ceremonial purposes, while utilitarian vessels were probably used for cooking, storage, carrying water and so on.

Serving-ceremonial vessels (n=1054) constituted 45.5 per cent of the total rim sherd assemblage from Santa Isabel, while utilitarian vessels (n=984) accounted for 42.5 per cent. These frequencies are roughly similar to those reported by Willey and Norweb (Healy 1980) and by Niemel (personal communication 2002) for nearby contexts (cf. Tables 6.1 and 6.2). The two deepest stratigraphically excavated units from the site (i.e., N20E30 and N30E10) suggest a gradual decline in the frequency of serving-ceremonial vessels and a corresponding increase in utilitarian vessels on the mound over time: in N20E30, for example, serving-ceremonial vessels account for 54 per cent (n=64) of rim sherds in the bottom third (7 levels) of the unit, but only 43 per cent (n=83) in the top third. In contrast, the data from Willey and Norweb's excavations at Santa Isabel "A" presented by Healy suggests an *increase* in the frequency of serving-ceremonial vessels over time (1980:54, Table 9), though as already noted, Healy's data includes body sherds and therefore may not be directly comparable to the data collected by the University of Calgary project. The distribution of fine and utilitarian vessel sherds in the shovel tests (Figure 7.2) suggest that while most of the material from both vessel groups was concentrated on the mound itself (approximately 59 per cent of the sherds in each case), the distribution of utilitarian vessel sherds over the remainder of the surveyed area was somewhat more dispersed than the distribution of serving-ceremonial vessel sherds.

SERVING-CEREMONIAL VESSELS
Rim sherds per shovel test (total = 322)

	E0	E10	E20	E30	E40	E50	E60	E70	E80	E90	E100	E110	E120
N40	5	6	3	2	5	3				1	1		
N30	11	20	11	2	10	2	1					1	2
N20	9	18	9	23	10	7	1						1
N10	10	17	16	6	27	19		6	1	2			
N0	1	4	4	17	6	2	10	4	1	1		2	2

Percentage of sherds per shovel test

	E0	E10	E20	E30	E40	E50	E60	E70	E80	E90	E100	E110	E120
N40	2%	2%	1%	1%	2%	1%				0%	0%		
N30	3%		3%	1%	3%	1%	0%					0%	1%
N20	3%		3%		3%	2%	0%						0%
N10	3%			2%				2%	0%	1%			
N0	0%	1%	1%		2%	1%	3%	1%	0%	0%		1%	1%

UTILITARIAN VESSELS
Rim sherds per shovel test (total = 323)

	E0	E10	E20	E30	E40	E50	E60	E70	E80	E90	E100	E110	E120
N40	3	4	5	1	2	3		4	1	2		1	
N30	17	17	5	2	8	3	2	2		1			1
N20	6	12	8	25	8	3	1	7		1		2	1
N10	5	23	12	7	15	9	1	15			1	1	1
N0	2	8	4	13	6	3	20	10	2	2	3	1	1

Percentage of sherds per shovel test

	E0	E10	E20	E30	E40	E50	E60	E70	E80	E90	E100	E110	E120
N40	1%	1%	2%	0%	1%	1%		1%	0%	1%		0%	
N30			2%	1%	2%	1%	1%	1%		0%			0%
N20	2%		2%		2%	1%	0%	2%		0%		1%	0%
N10	2%			2%		3%	0%				0%	0%	0%
N0	1%	2%	1%		2%	1%		3%	1%	1%	1%	0%	0%

4-6% 7-9%

Figure 7.2 Distribution of utilitarian vessel vs. serving-ceremonial vessel rim sherds on Mound 3 (mound area delineated by line)

Serving-Ceremonial Vessels

Vessel Shapes. Serving-ceremonial vessel types were sorted according to two general shape classes. The first included bowls, or *escudillas*, while the second included a range of vessels described in the English-language literature as jars, jugs, vases and urns and in the Spanish as *jarras* or *jarrones*, the latter term usually denoting somewhat larger vessels than the former (Figure 7.3). In the following discussion I have generally preferred the Spanish terms for the latter class of forms to avoid confusion with a utilitarian vessel class of typically larger vessels which are also referred to in the English literature as "jars", and which I refer to as *ollas*.

Bowls were not only the most common serving-ceremonial vessel class, but by far the most common vessel class in the entire Santa Isabel assemblage, constituting 38 per cent of the sample (Table 7.2). Almost half of these (48% of all bowls) were classed as composite silhouette bowls (cf. Rice 1987:218), typically carinated with a rounded base (which usually correlated with the presence of tripod supports) and outflaring vertical walls. Unfortunately, this classification proved to be somewhat misleading, since later examination of the rim profiles illustrated in the field and comparison with vessels illustrated elsewhere (e.g., Healy 1980) indicated that a category of flat-bottomed bowls with outflaring walls had been subsumed within this class. These flat-bottomed escudillas, which appeared to be found only in specific types, occasionally featured undulating or dentate rims. Three bowls that were very similar to the composite silhouette category yet lacked sharp carinations (being more "bulbous" in body) were distinguished in the field but were grouped with the composite silhouette bowls for analysis.

Hemispherical bowls were the second most common bowl form (37% of all bowls); decorative variants included everted and thickened lips on rims, modelled tab handles, and wide modelled external rims on larger vessels (a feature more typical of the generally larger utilitarian vessel forms, described later). Superhemispherical bowls (12% of bowls) constituted a third major bowl form. Superhemispherical bowls were defined as bowls where the vertical wall exceeded the vertical angle and began to close in, restricting the vessel orifice. *Apaste* is used in modern Nicaraguan Spanish to describe such bowls, and may have been used in ancient times as well, since it appears to be of Nahaut derivation (Academia de

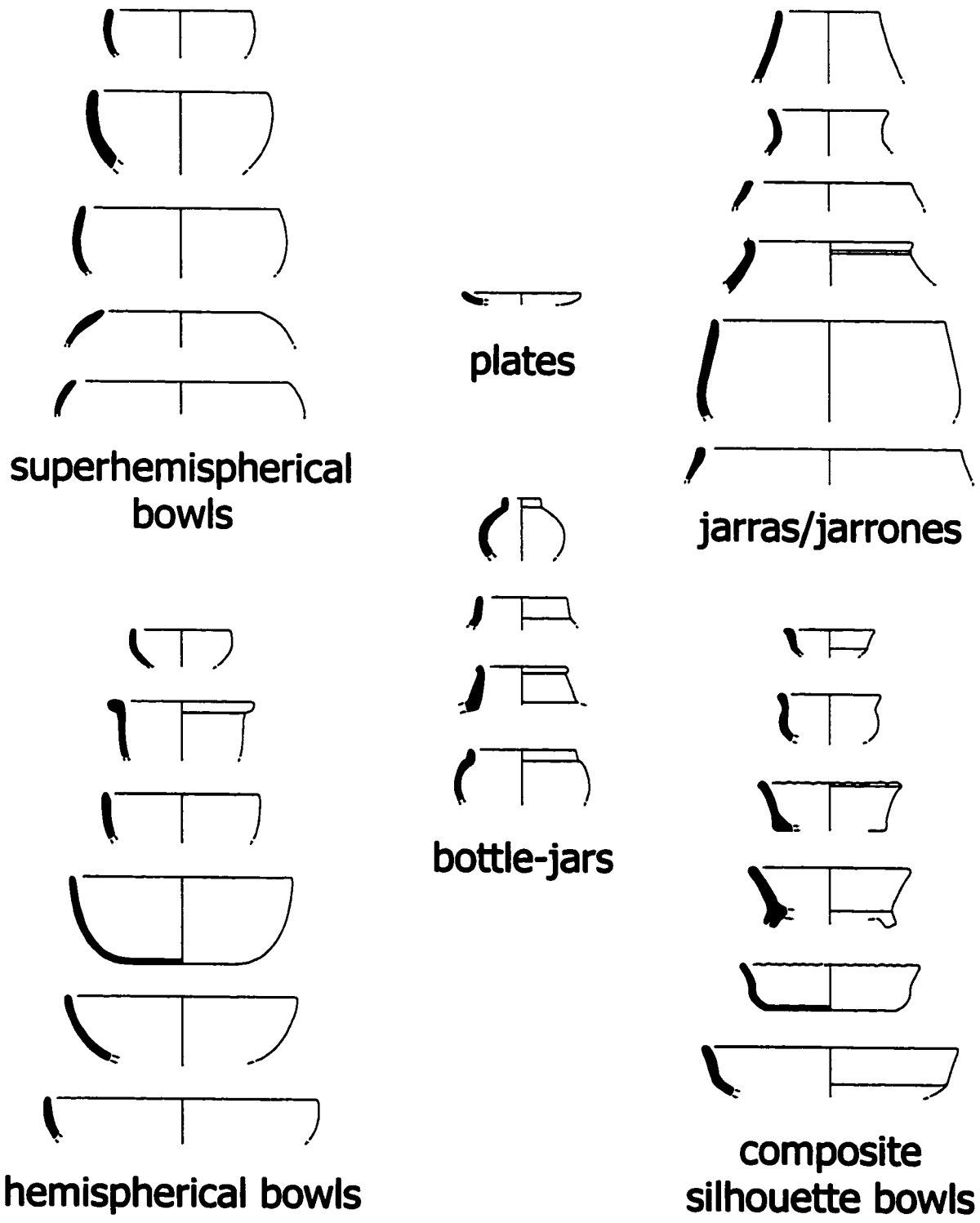


Figure 7.3 Serving-ceremonial vessel forms

Nicaragüense de la Lengua 2001). Some superhemispherical bowls featured everted lips. Other bowl forms included small collared bowls of unknown type that appeared to be of a kind although they ranged between hemispherical and superhemispherical status, and "plates" which might well have been shallow bowls.

Table 7.2 Santa Isabel vessel forms, based on rim sherds

	Form Total	Class Total	% of entire sample
SERVING-CEREMONIAL VESSELS			
BOWLS (ESCUDILLAS)		888	38.3
composite silhouette	427		
hemispherical	327		
superhemispherical	103		
plate or shallow bowl	4		
other	27		
JARRAS/JARRONES		85	3.7
simple, ovoid or periform	50		
bottle-jar	35		
MISCELLANEOUS		12	0.5
shoe pot	8		
other	4		
UTILITARIAN VESSELS		858	37.0
OLLA/CAZUELA			
with bent rim	384		
with straight or wedge rim	92		
with tapered rim	296		
CAZUELA (broad-rimmed)	82		
TECOMATE	4		
INDETERMINATE FORMS	475	475	20.5
TOTAL	2318		100.0

Jarres-jarrones constitute a considerably smaller serving-ceremonial vessel class, representing less than four per cent of the entire ceramic assemblage. Common forms in Greater Nicoya include tall vessels with relatively vertical walls, ovoid or periform jarras with ring bases, and large animal and human effigy vases. Since it was usually impossible to be conclusive about the shape of complete vessels based only on rim sherds, most fragments were therefore classed generically as "simple, ovoid or periform". Monochrome jarras distinguished by well-defined necks were more specifically classed as "bottles-jars"; however, since these vessels encompassed a wide range of sizes with orifice diameters ranging from 3 cm to 18 cm

and since the larger forms might have been treated as a variety of superhemispherical bowl with a neck, in hindsight this category might have been split into two.

Serving-ceremonial vessel types can be subdivided into three general groups, based on chronological criteria: (1) early types associated with the Tempisque and/or Bagaces periods; (2) middle to late period types that first appeared in the Sapoá Period and continued into the Ometepe Period; and (3) late types that are exclusively associated with the Ometepe Period (Table 7.1).

Tempisque and Bagaces Period Types. Only seven Tempisque and/or Bagaces Period sherds were recovered from Santa Isabel, and only four types could be identified: Leon Punctate, Obando Black-on-Red, Rosales Zoned Engraved and Schettel Zoned Incised. Two possible types–Unspecified Red and Unspecified Red Incised–demonstrated traits that were specific enough to be associated with these earlier periods, though not specific enough to allow for a more precise identification. Only four of these early sherds were found in stratigraphic contexts (the others were found in the shovel tests), and only two in relatively "early" levels (both in Level 9 of unit N30E40).

Sapoá and Ometepe Period-Spanning Types. Thirty-two per cent of all rim sherds, and 72 per cent of all of those specifically classed as serving-ceremonial vessels, belonged to types that have been previously associated with both the Sapoá and Ometepe periods (Table 7.1) (Bonilla L. et al. 1990; Healy 1980). These included four previously identified polychrome types: Granada, Mora, Papagayo and Pataky. Seven varieties of Papagayo Polychrome were distinguished: Alfredo, Casares, Cervantes, Fonseca, Mandador, Manta and Pica. Three previously unidentified possible types can probably also be linked to both the Sapoá and Ometepe periods: Unspecified Black (possibly Castillo Engraved and/or Lago Black Modelled), Ricardo Red and Unspecified Red-on-White Bichrome[12]. Additionally, another

[12]I have not included formal descriptions of the various potential new types identified in this study because I feel that such descriptions would be premature in the absence of data pertaining to fabric composition. This same lack of data also explains why most of these types have been tentatively designated as "Unspecified" rather than given type names. An exception was made in the case of "Ricardo Red" because this potential new type was first identified and named not by myself but rather by Ruth Edelstein.

known Sapoá type, Birmania Polychrome, was tentatively identified after the field work was concluded based on a photograph of sherds originally classed as Pataky Polychrome.

The types named above were generally found distributed throughout the entire stratigraphy of Mound 3, and the similar distribution of the previously unknown Unspecified Black and Ricardo Red types provides the rationale for associating these potential types with both periods as well. Unspecified Red-on-White Bichrome presents a somewhat different problem, owing to the fact that only two rim sherds were found in stratigraphic contexts. Although both of these contexts allow for an association of Unspecified Red-on-White Bichrome with types that are considered to be diagnostic of the Ometepe Period (see following discussion), because of the extremely small number of sherds in the sample, it seems unwise to assign these to a narrower temporal category until more examples of this possible type might be recovered.

Based on the shovel test data, there seems to be a tendency for Sapoá-Ometepe Period serving-ceremonial vessels to be more common towards Mound 3's centre and southern and eastern sides, while material associated more specifically with the Ometepe Period is distributed towards the northwest (Figure 7.4). This trend appears to be somewhat supported by the frequencies of Sapoá-Ometepe and Ometepe-specific material recovered from the excavated units: the lowest frequency of Sapoá-Ometepe material occurs in the northwestern-most unit, N30E10, which is also the unit featuring the greatest frequency of Ometepe-specific material (Table 7.3).

Table 7.3 Frequencies of Sapoá-Ometepe vs. Ometepe-specific ceramics in units

	N10E30/ N11E30	N16E16	N20E30/ N20E31	N30E10	N30E40/ N30E41
	SE	centre	NE	NW	NE, off mound
Sapoá/Ometepe	30%	48%	32%	23%	48%
Ometepe Diagnostics	5%	6%	13%	24%	6%

Ometepe-specific material also appears in increased frequencies in N20E30/N20E31, also on the north side of the mound, despite the fact that, as the deepest excavated unit, this unit

SAPOÁ-OMETEPE PERIOD TYPES

Rim sherds per shovel test (total = 205)

	E0	E10	E20	E30	E40	E50	E60	E70	E80	E90	E100	E110	E120
N40	2	2	3		3	3				1	1		
N30	4	6	6	1	9	2	1						2
N20	2	12	6	12	8	6	1						1
N10	4	12	13	6	24	15		4	1	2			
N0	1	3	4	9	4	2	5	2					

Percentage of sherds per shovel test

	E0	E10	E20	E30	E40	E50	E60	E70	E80	E90	E100	E110	E120
N40	1%	1%	1%		1%	1%				0%	0%		
N30	2%	3%	3%	0%		1%	0%						1%
N20	1%		3%			3%	0%						0%
N10	2%			3%				2%	0%	1%			
N0	0%	1%	2%		2%	1%	2%	1%					

OMETEPE PERIOD DIAGNOSTIC TYPES

Rim sherds per shovel test (total = 115)

	E0	E10	E20	E30	E40	E50	E60	E70	E80	E90	E100	E110	E120
N40	3	4		2	2								
N30	7	13	5	1	1							1	
N20	7	6	3	11	2	1							
N10	6	5	3		3	4		2					
N0		1		8	2		5	2	1	1		1	2

Percentage of sherds per shovel test

	E0	E10	E20	E30	E40	E50	E60	E70	E80	E90	E100	E110	E120
N40	3%	3%		2%	2%								
N30				1%	1%							1%	
N20			3%		2%	1%							
N10			3%		3%	3%		2%					
N0		1%			2%			2%	1%	1%		1%	2%

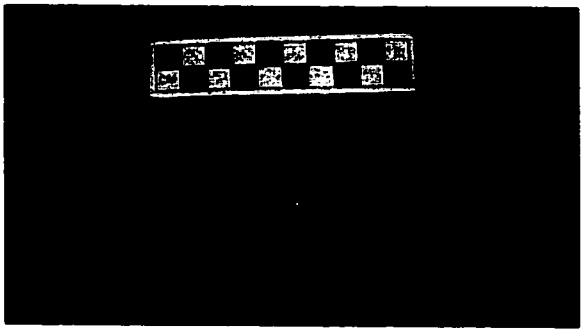
4-6% 7-9% >10%

Figure 7.4 Distribution of Sapoá-Ometepe Period serving-ceremonial vessel types vs. Ometepe Period serving-ceremonial vessel types on Mound 3

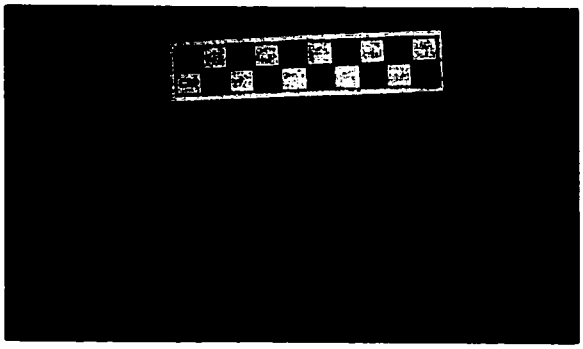
might be expected to feature a proportionally greater amount of Sapoá-Period material, which would of course be grouped into our Sapoá-Ometepe category and presumably increase in frequency.

All of the known Sapoá-Ometepe types generally conformed to expectations based on previous work. For example, the ubiquitous Papagayo Polychromes (Figures 7.5a and 7.5b), which constitute the greater portion of the Sapoá-Ometepe serving-ceremonial vessels (69%) and which in common practice are treated as Chorotega "markers", were found throughout the entire stratigraphic sequence, in abundant though diminishing frequencies that remained relatively consistent with those of Sapoá-Ometepe serving-ceremonial vessels in general. This general decrease in Papagayo over time is consistent with the pattern reported by Healy (1980:170) for the type. The prevalence and chronological distribution of individual Papagayo varieties also tended to be consistent with Healy's data. Healy (1980:193-97,167-188) observes that all Papagayo varieties can be associated with both the Sapoá and Ometepe periods (with the exception of Pica, which he suggests is Ometepe Period-specific), and our data does not dispute this observation. Papagayo vessel shapes found at Santa Isabel appeared to encompass the entire range of bowls forms previously described by Healy (1980:193-97,167-188), with composite silhouette bowls being the most common (55% of the identifiable sample), followed by hemispherical (40%) and superhemispherical (6%) bowls (Figure 7.6).

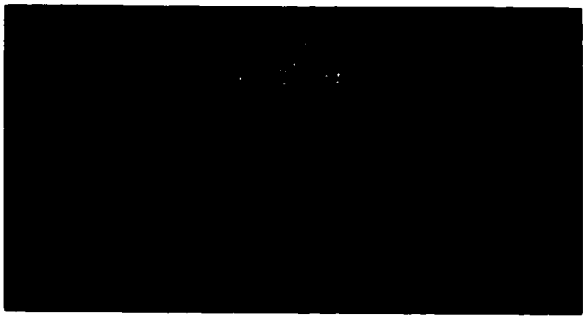
The pink or orange-slipped Granada Polychrome (Figure 7.7), which Healy notes appears in its greatest frequencies during the Sapoá Period as well as in diminished concentrations in the Ometepe Period (1980:128), was also found in contexts associated with both periods at Santa Isabel: in the deepest unit, N20E30 (Table 7.4), it quite clearly clustered in the central strata, which appears to be transitional between the two periods. In the field Granada sherds were observed to be typically thinner than those from most other serving-ceremonial vessel types. Forms included typically deep hemispherical bowls (88%) and composite silhouette bowls (12%) that often featured undulating or dentate rims and which were probably all actually flat-bottomed bowls.

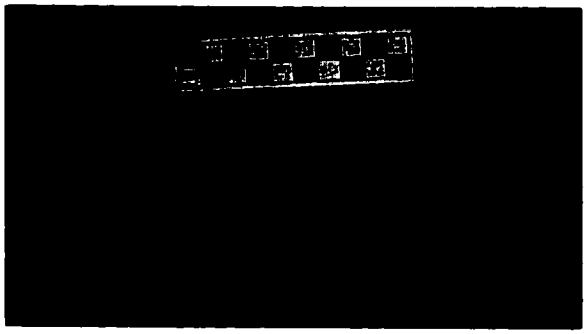


Alfredo variety

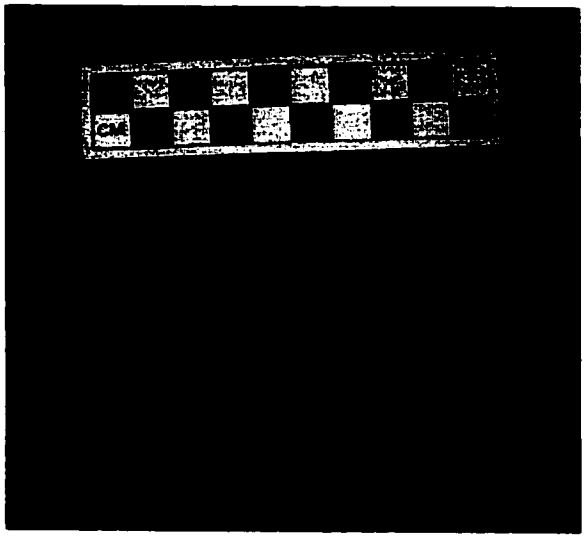


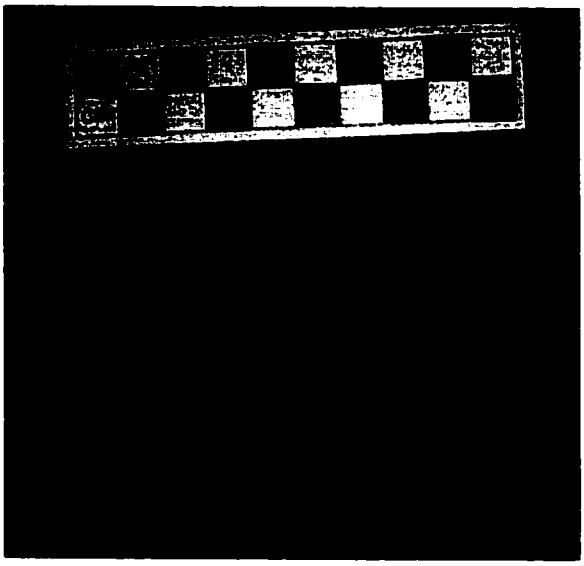
Cervantes variety





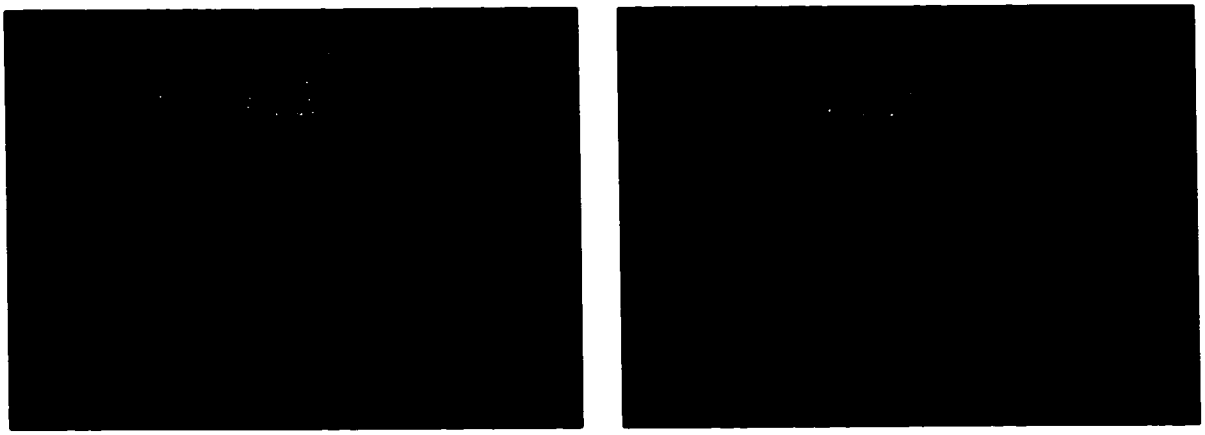
Casares variety



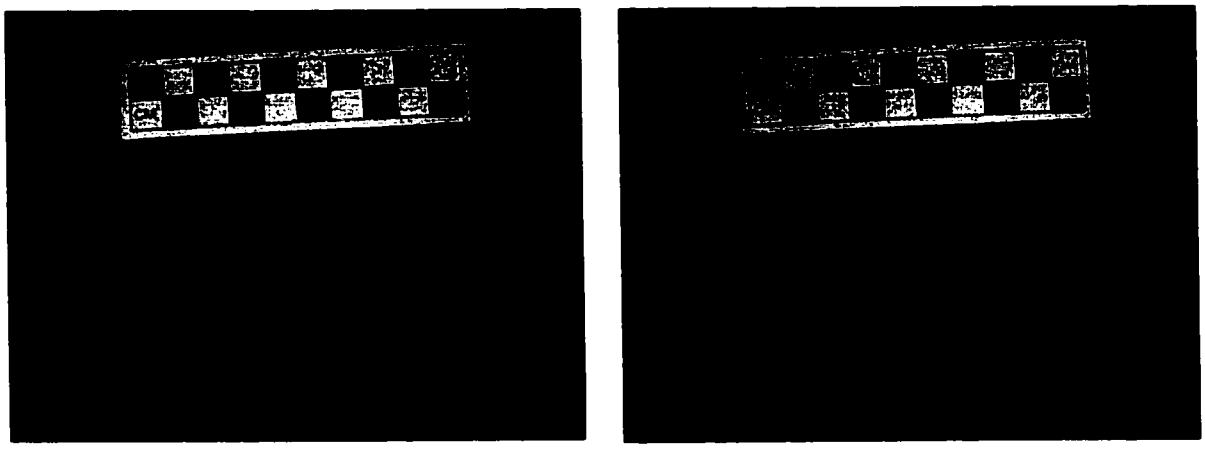


Fonseca variety

Figure 7.5a Papagayo Polychrome



Mandador variety



Manta variety

Pica variety

Figure 7.5b Papagayo Polychrome

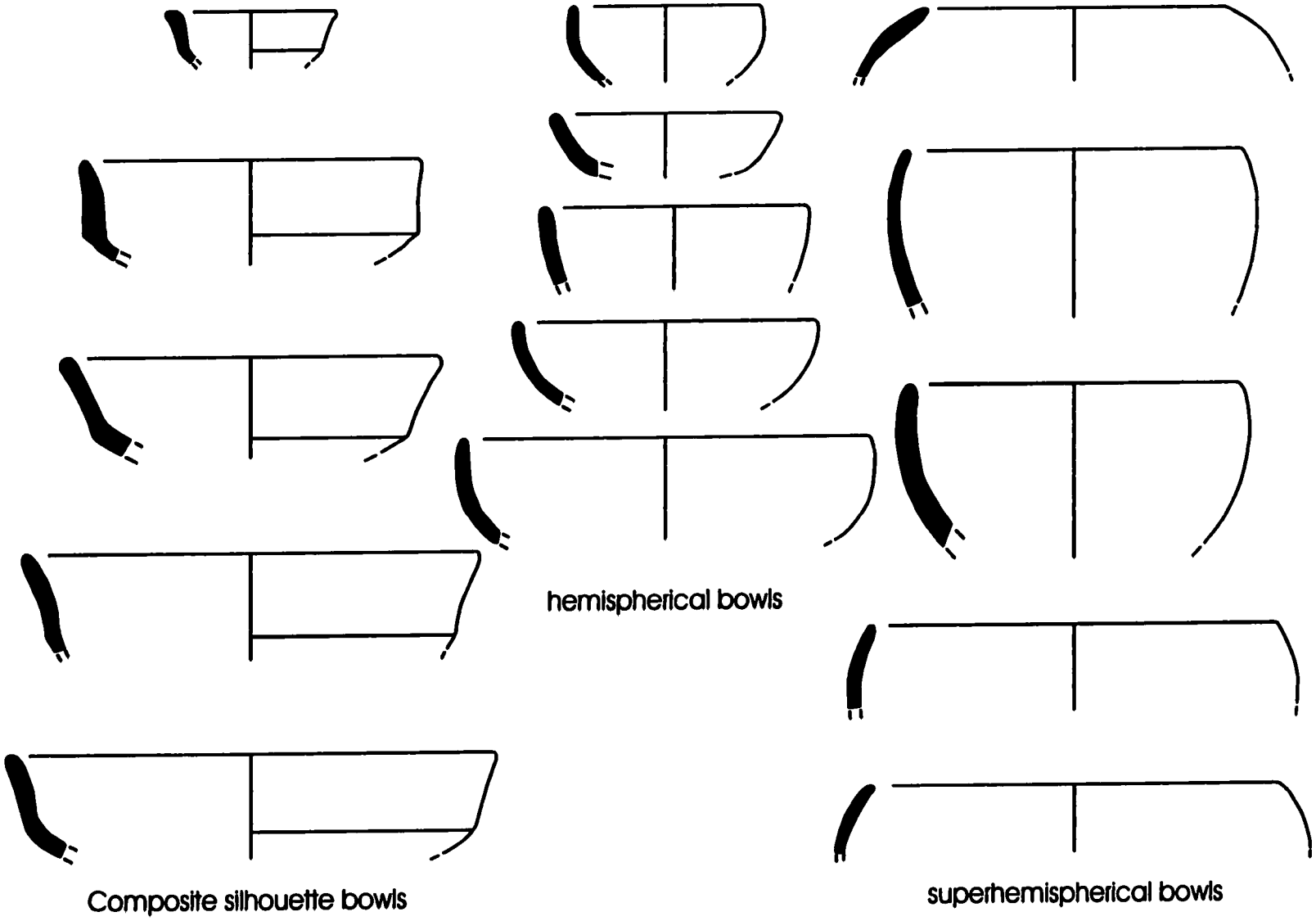


Figure 7.6 Typical Papagayo vessel forms (30% of original size)

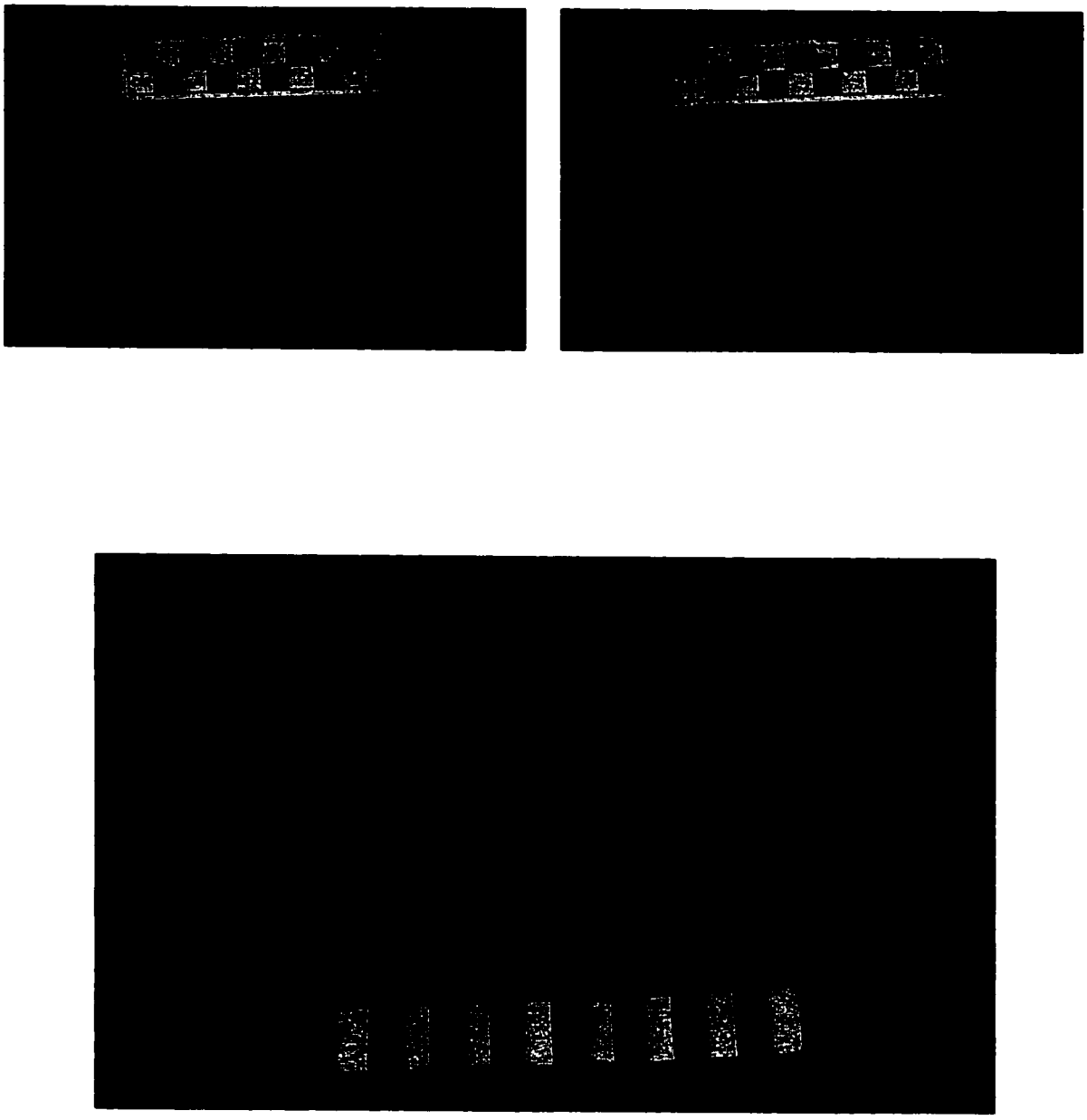


Figure 7.7 Granada Polychrome

LEVEL	1		2		3		4		5		6		7		8		9	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
SERVING-CEREMONIAL VESSELS, TEMPISQUE & BAGACES																		
Unspecified Red Incised							1	5										
SERVING-CEREMONIAL VESSELS, SAPOÁ OR OMETEPE																		
Papagayo: Variety Indeterminate	1	7			2	7			4	12	2	8	4	6	2	5	2	4
Papagayo: Alfredo	1	7			1	3			1	3					3	7	2	4
Papagayo: Casares													2	3			2	4
Papagayo: Cervantes	1	7													1	2		
Papagayo: Fonseca			1	20					2	6	1	4	2	3	1	2	1	2
Papagayo: Mandador	1	7							2	6			4	6	1	2	1	2
Papagayo: Manta													3	5				
Papagayo: Pica													1	2				
Pataky Polychrome													1	2			1	2
Granada Polychrome																	1	2
Mora Polychrome																		
Unspecified Black			1	20	1	3							2	3	2	5		
Ricardo Red					1	3							4	6				
Unspecified Red-on-White Bichrome																		
Unsp. White-slipped Polychrome											1	4					1	2
SERVING-CEREMONIAL VESSELS, OMETEPE																		
Vallejo: Variety Indeterminate					1	3	1	5									1	2
Vallejo: Vallejo	1	7			2	7	1	5	1	3	1	4	4	6			3	6
Vallejo: V. Unsp. w/Papa.-like fabric							1	5			1	4	1	2				
Vallejo: Mombacho																		
Castillo Engraved											2	8	1	2	2	5	2	4
Madeira: Las Marias					1	3	1	5	2	6	4	17	1	2	2	5	1	2
Madeira: Banda									1	3								
Ometepe Red-Slipped Incised																	1	2
Unspecified Buff					1	3			3	9							1	2
Unsp. White-slipped Polychrome					2	7			1	3								
UTILITARIAN VESSELS, SAPOÁ & OMETEPE																		
Rivas Red: Rivas	8	53	2	40	10	33	13	59	11	33	4	17	19	29	13	30	10	21
Rivas Red: Variety Unspecified					3	10	1	5	1	3	4	17	3	5	9	20	6	13
Sacasa Striated	2	13	1	20			1	5	1	3	1	4	3	5	4	9	4	9
Unspecified Unslipped Monochrome									1	3	2	8	3	5				
IND. TOO SMALL SHERDS					5	17	2	9	2	6	1	4	8	12	4	9	7	15
TOTALS - LEVEL	15	100	5	100	30	100	22	100	33	100	24	100	66	100	44	100	47	100
Total - Serving-Ceremonial Vessels	5	33	2	40	12	40	5	23	17	52	12	50	30	45	14	32	20	43
Total - Sapoá/Ometepe S-C. Vessels	4	27	2	40	5	17	0	0	9	27	4	17	23	35	10	23	11	23
Total - Ometepe Diagnostics	1	7	0	0	7	23	4	18	8	24	8	33	7	11	4	9	9	19
Total - Utilitarian Vessels	10	67	3	60	13	43	15	68	14	42	11	46	28	42	26	59	20	43

Table 7.4a Stratigraphic distribution of types in Unit N20E30 (Levels 1-9)

LEVEL	10		11		12		13		14		15		16		17		18		19		20		21	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
SERVING-CEREMONIAL VESSELS, TEMPISQUE & BAGACES																								
Unspecified Red Incised																								
SERVING-CEREMONIAL VESSELS, SAPOÁ OR OMETEPE																								
Papagayo: Variety Indeterminate			6	17	2	13	1	3	1	6					4	15	1	7	5	25	1	17	2	33
Papagayo: Alfredo	2	3	2	6			1	3					1	4			1	7						
Papagayo: Casares	2	3	1	3							2	11			1	4								
Papagayo: Cervantes			1	3	1	6					1	6							1	5				
Papagayo: Fonseca	1	2	1	3	1	6					3	17	1	4					1	5	1	17		
Papagayo: Mandador	2	3	2	6	1	6	2	6	3	18	1	6	1	4	3	12	1	7	6	30	2	33	2	33
Papagayo: Manta					1	6			1	6			1	4			1	7	1	5				
Papagayo: Pica									1	6														
Pataky Polychrome	1	2	1	3					1	6							1	7						
Granada Polychrome			2	6							1	6												
Mora Polychrome																	1	7						
Unspecified Black			1	3	1	6	2	6	2	12					4	15	2	14						
Ricardo Red	1	2	2	6			1	3	2	12	2	11	3	11	1	4								
Unspecified Red-on-White Bichrome							1	3																
Unsp. White-slipped Polychrome	2	3	1	3													1	7						
SERVING-CEREMONIAL VESSELS, OMETEPE																								
Vallejo: Variety Indeterminate	3	5					1	3																
Vallejo: Vallejo	2	3	1	3			1	3					1	4										
Vallejo: V. Unsp. w/Papa.-like fabric																								
Vallejo: Mombacho	2	3	2	6	1	6	1	3																
Castillo Engraved			1	3																				
Madeira: Las Marias	2	3																						
Madeira: Banda																								
Ometepe Red-Slipped Incised																								
Unspecified Buff	1	2	1	3																				
Unsp. White-slipped Polychrome											1	6							1	5				
UTILITARIAN VESSELS, SAPOÁ & OMETEPE																								
Rivas Red: Rivas	14	24	5	14	4	25	12	34	3	18	5	28	9	32	7	27	3	21	3	15	1	17	2	33
Rivas Red: Variety Unspecified	4	7	1	3	1	6	4	11	3	18	2	11	3	11	5	19	1	7	1	5				
Sacasa Striated	7	12	3	9	1	6	5	14					4	14	1	4	1	7			1	17		
Unspecified Unslipped Monochrome	1	2											3	11					1	5				
IND. TOO SMALL SHERDS	12	20	1	3	2	13	3	9					1	4										
TOTALS - LEVEL	59	100	35	100	16	100	35	100	17	100	18	100	28	100	26	100	14	100	20	100	6	100	6	100
Total - Serving-Ceremonial Vessels	21	36	25	71	8	50	11	31	11	65	11	61	8	29	13	50	9	64	15	75	4	67	4	67
Total - Sapoá/Ometepe S-C. Vessels	11	19	20	57	7	44	8	23	11	65	10	56	7	25	13	50	9	64	14	70	4	67	4	67
Total - Ometepe Diagnostics	10	17	5	14	1	6	3	9	0	0	1	6	1	4	0	0	0	0	1	5	0	0	0	0
Total - Utilitarian Vessels	26	44	9	26	6	38	21	60	6	35	7	39	19	68	13	50	5	36	5	25	2	33	2	33

Table 7.4b Stratigraphic distribution of types in Unit N20E30 (Levels 10-21)

Pataky Polychrome (Figure 7.8) also appears in the central strata of N20E30, a position consistent with Healy's description of the type as being transitional between the two periods (1980:191). Pataky also appears in levels that predate and overlap with the lowest strata of Ometepe-specific material in the second deepest unit, N30E10, providing supporting evidence for the transitional nature of this type. Forms included composite silhouette (54%), superhemispherical (23%) and hemispherical (15%) bowls, as well as periform or ovoid jarrones (8%). The appearance of the single rim sherd of a Mora Polychrome bowl, a Costa Rican type, in a very deep context (level 18) in N20E30 is consistent with previous work that has placed this type in the early half of the Sapoá Period (Healy 1980:154).

Potential New Types. Two of the three potential new types noted above, Ricardo Red and Unspecified Black (Figure 7.9), seem to bear some similarities to Pataky and Granada polychrome in they ways in which they are distributed in the stratigraphy of the mound. While neither type is completely absent in the uppermost levels, most occurrences of sherds placed in these two classes were found in contexts that predate or overlap with the first appearance of Ometepe-specific material, as was the case with Pataky Polychrome. This pattern is especially clear in the two deepest units, N20E30 and N30E10 (Tables 7.4, 7.5). It is therefore possible that these two types may also be transitional between the late Sapoá and early Ometepe periods, though perhaps it would be premature to assign them a definite chronological position at this point without supporting radiocarbon data. In addition to these chronological similarities, the distribution of Ricardo Red in the shovel tests towards the eastern and southern sides of the mound also tends to parallel the distribution of other Sapoá-Ometepe serving-ceremonial vessel types (Figure 7.10). On the other hand, the shovel test distribution of the small sample of Unspecified Black also tends towards the eastern side of the mound, but seems to be oriented to the north rather than the south side.

Ricardo Red was first noticed and named in the lab in 2001 by Ruth Edelstein while sorting the previously unexamined Santa Isabel monochromes, and it seems likely that the material that has been included in this class would have been placed in the Rivas Red type by Healy (1980:205). Following Healy's practice of including ceramics ranging in colour from red to maroon in the Rivas Red type (1980:206), Edelstein originally included some very

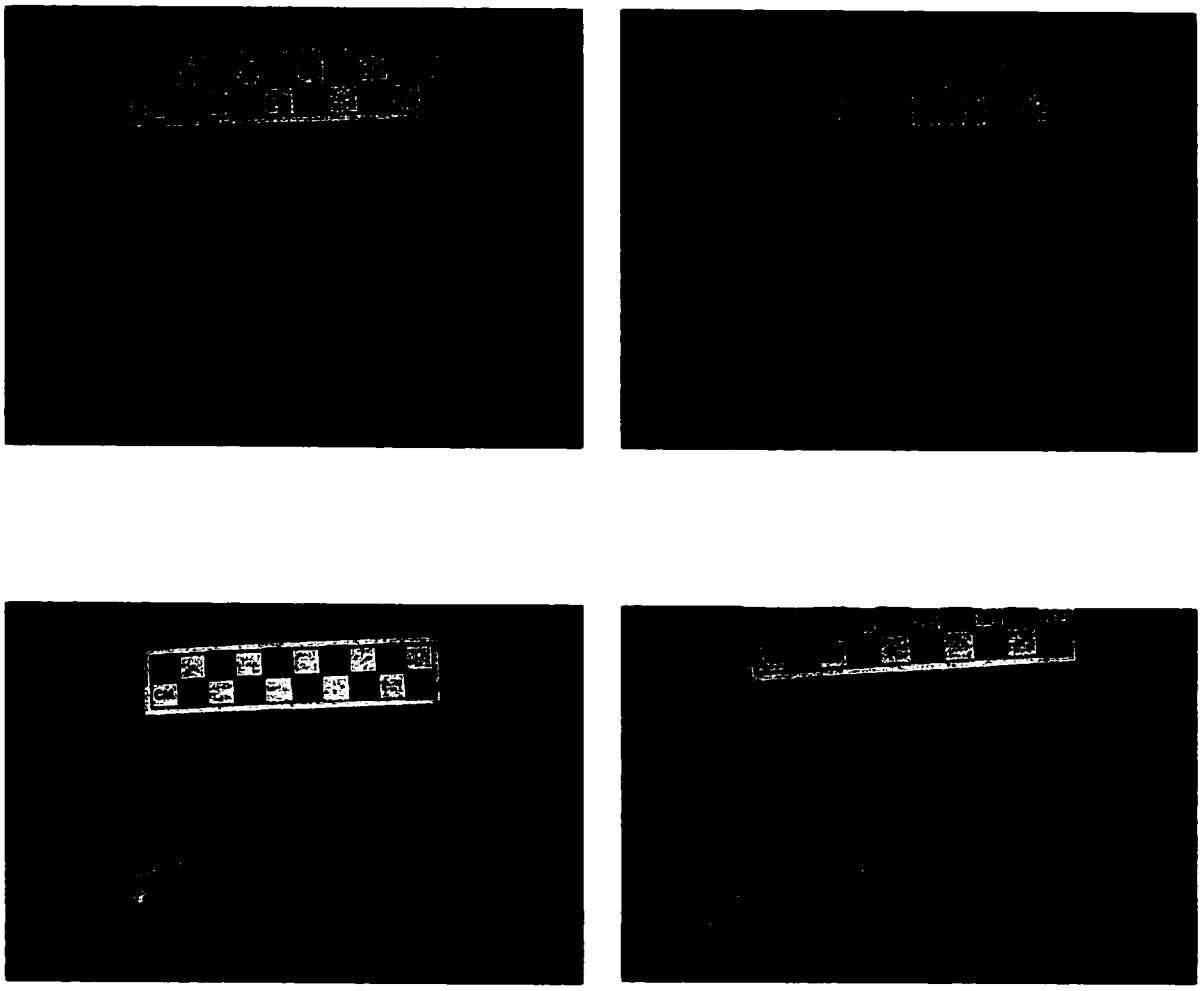


Figure 7.8 Pataky Polychrome

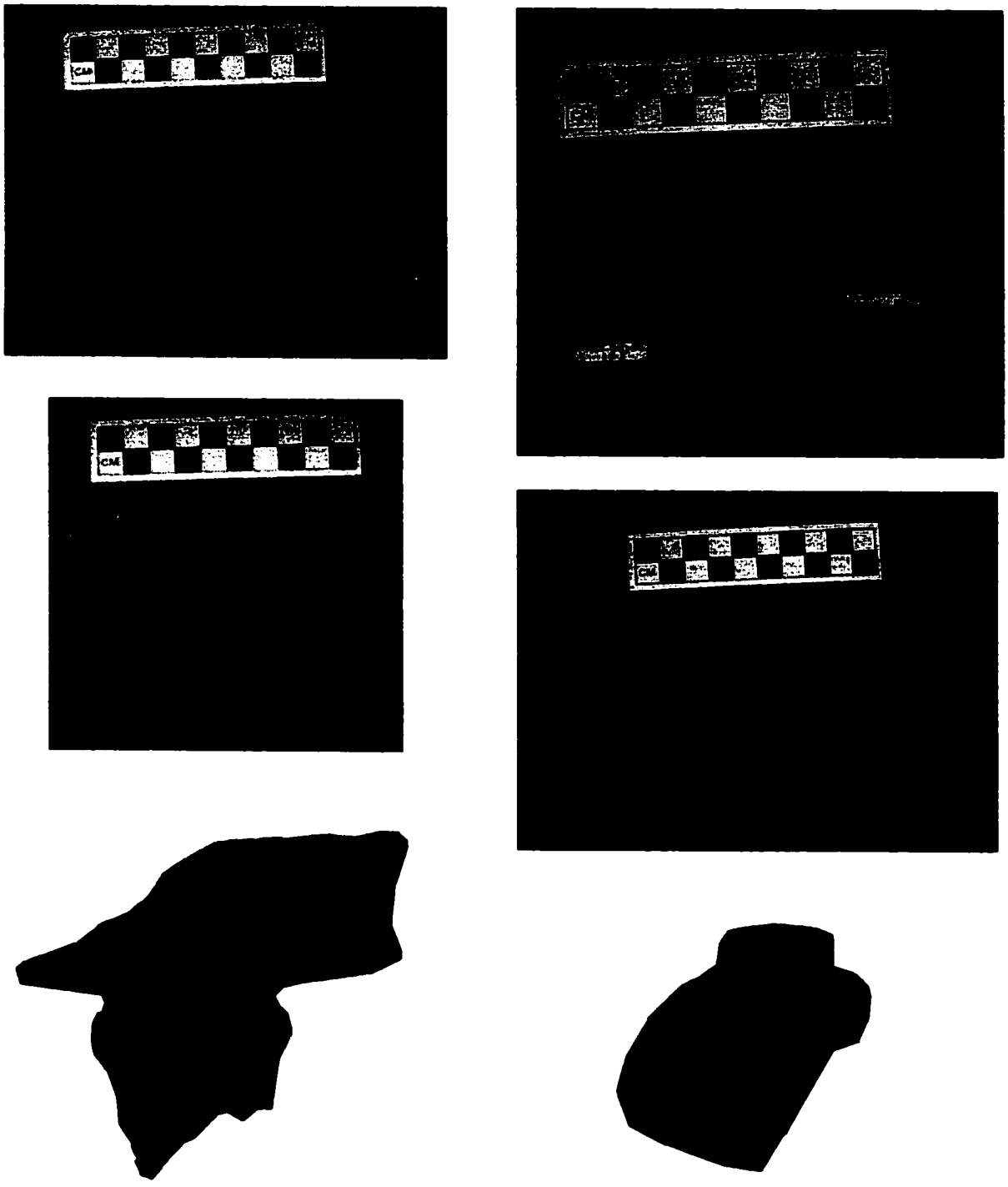
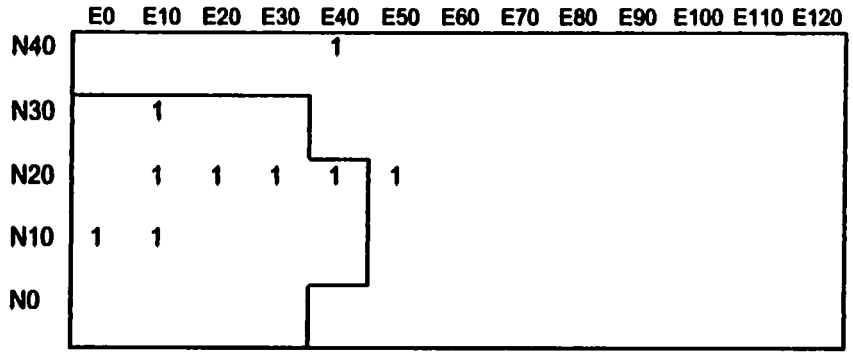


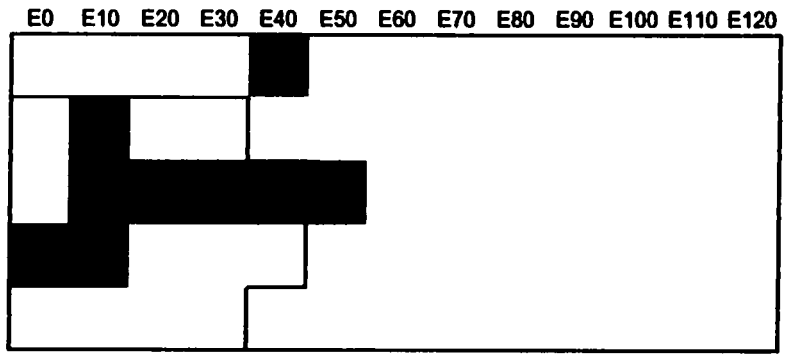
Figure 7.9 New monochrome types. Right column: Ricardo Red.
Left column: Unspecified Black

UNSPECIFIED BLACK

Rim sherds per shovel test (n=9)

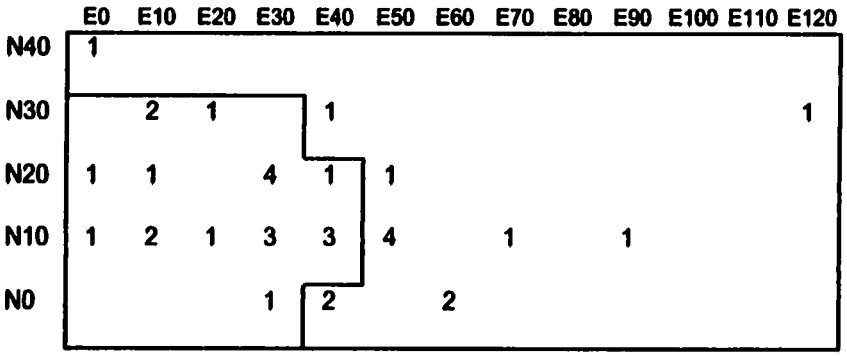


Percentage of sherds per shovel test

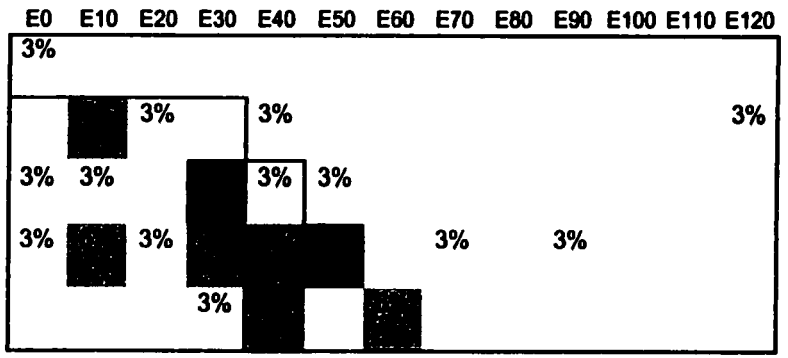


RICARDO RED

Rim sherds per shovel test (n=35)



Percentage of sherds per shovel test



5-9% 10% and greater

Figure 7.10 Distribution of Unspecified Black and Ricardo Red in shovel tests

dark-coloured materials in her own Ricardo Red category. When additional analysis of the monochrome material appeared to justify the creation of a second, Unspecified Black monochrome type, I moved some of the material originally included in Edelstein's type into the new type, but the possibility that the two types are somewhat confounded remains, since some of the material classified as Unspecified Black may actually represent Ricardo Red material that has darkened as the result of taphonomic processes. However, the generally distinct vessel shapes associated with each of the two types (discussed below) seem to support a distinction between fine red and black monochromes.

Ricardo Red vessels are much more similar in appearance to the most typical forms of common Sapoá-Ometepe polychromes than are Unspecified Black vessels, and the relative frequencies of Ricardo Red bowl forms–composite silhouette (42%), hemispherical (31%) and superhemispherical (11%)–are very similar to those of Papagayo (Figure 7.11). The similarity between Ricardo Red and Papagayo is in fact so great that one large sherd included a portion of a modelled support that was virtually identical to those found on Papagayo: Fonseca and Cervantes vessels (Figure 7.9). Periform or ovoid jarras (1%) are also found in this type. More atypical (and less common) forms associated with Ricardo Red that do not have polychrome analogues include plates or very shallow bowls (4%), composite silhouette bowls with bulbous bodies (3%) and necked bottles (11%). The latter category is the most likely to overlap with Unspecified Black, inasmuch as necked bottle-jars are the most common form associated with this type, accounting for more than half (53%) of the identifiable sample. Other Unspecified Black forms are also quite distinct from those that typify the Santa Isabel ceramics (Figure 7.12). There are no composite silhouette and superhemispherical bowls in Unspecified Black, and many of the hemispherical bowl forms that account for approximately a quarter of the sample are morphological quite far removed from the hemispherical bowls characteristic of other types.

There are no fine undecorated red-slipped monochromes described in the Greater Nicoyan ceramic literature, and this factor alone would therefore seem to argue for the creation of Ricardo Red as a new type ... or at the very least, as a new variety, since there is reason to believe that Ricardo Red is simply Papagayo in a red slip. Unspecified Black

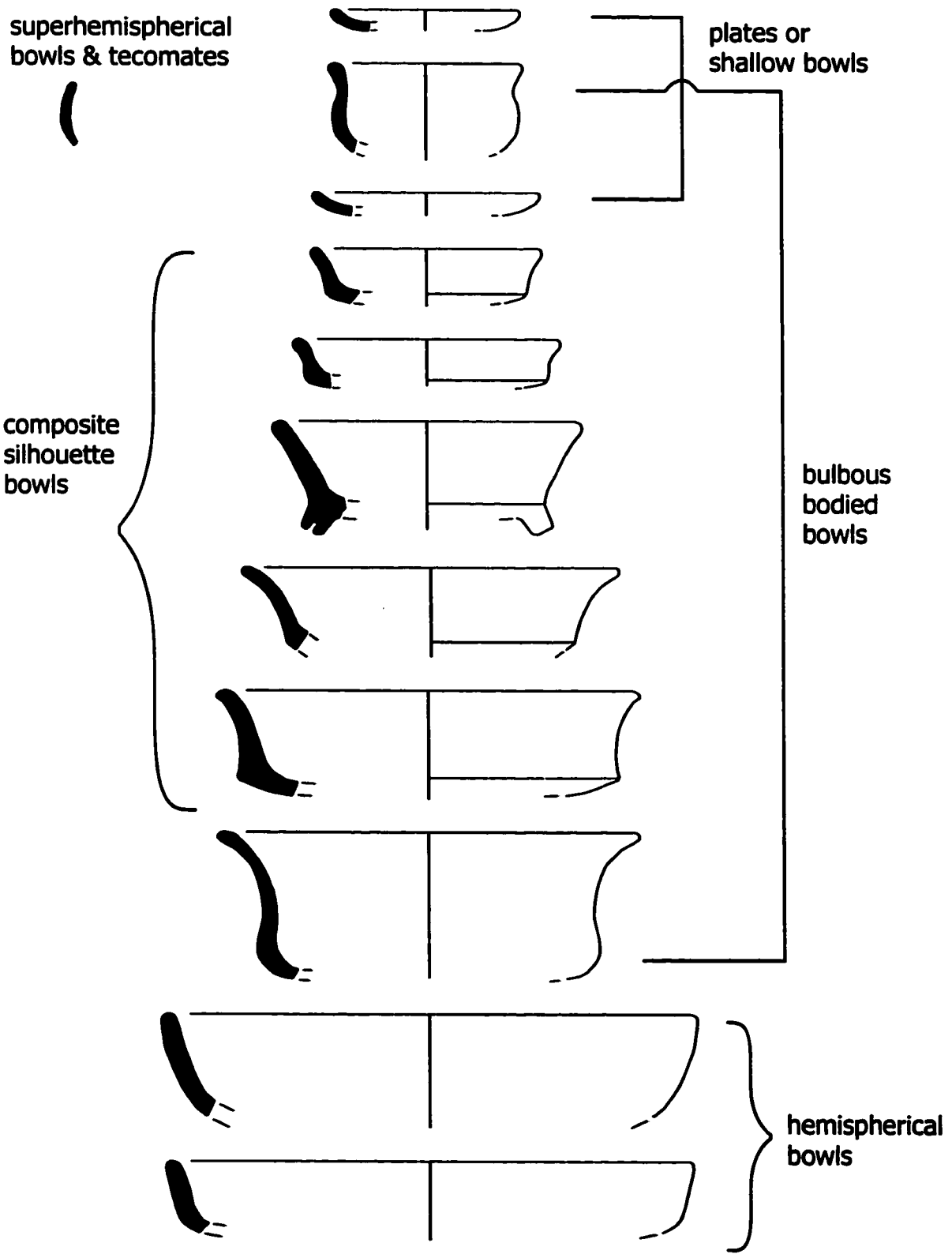


Figure 7.11 Typical Ricardo Red vessel forms (30% of original size)

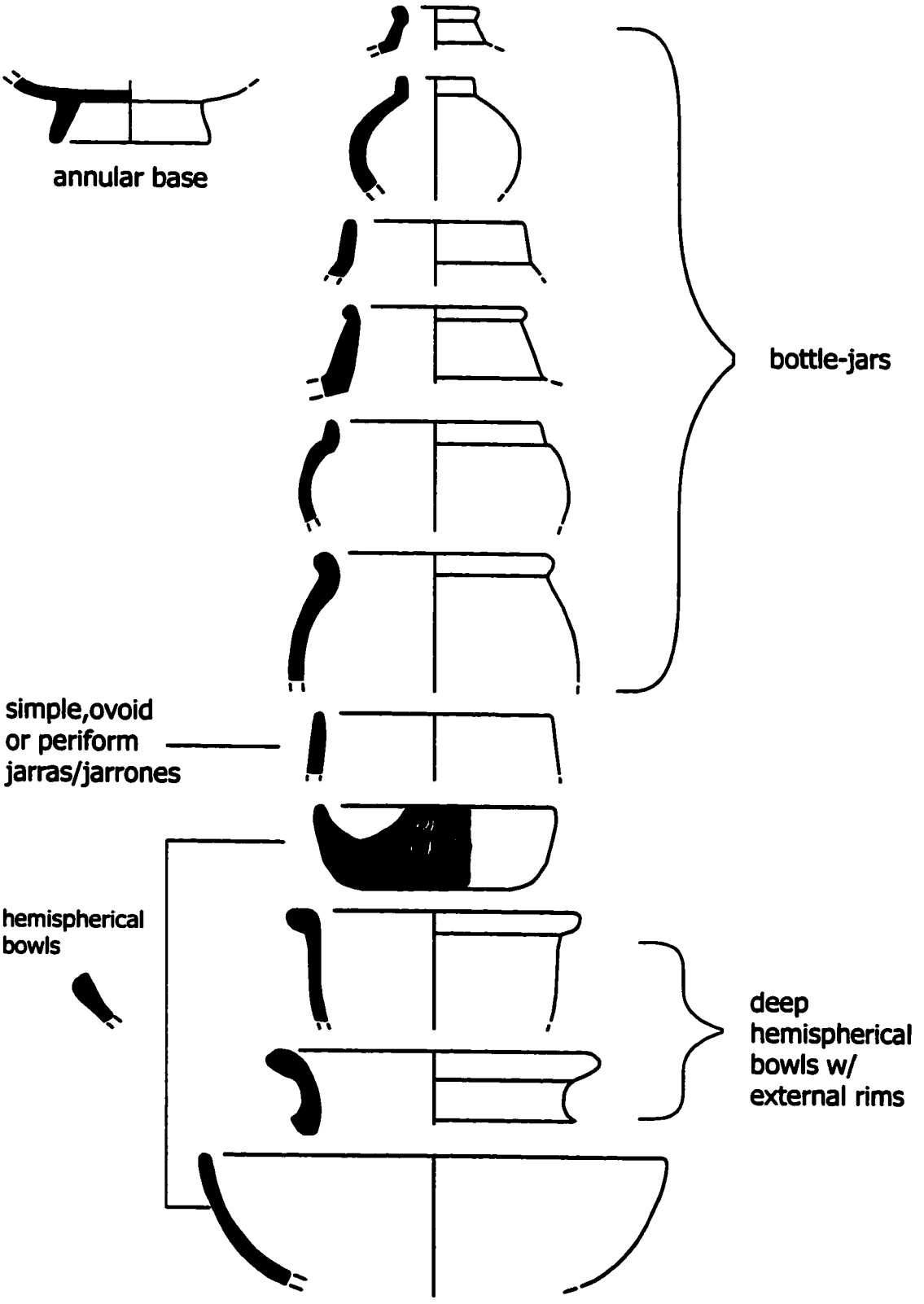


Figure 7.12 Typical Unspecified Black vessel forms (30% of original size)

presents a somewhat different problem, since there are many previously identified types characterised by a fine black polished or burnished surface, and it is likely that our type is identifiable with one of these. The most obvious candidate is Castillo Engraved, a type diagnostic of the Ometepe Period (Healy 1980:97) (Figure 7.13). In N20E30, the only unit in which the stratigraphic distribution of Castillo can be observed, Castillo starts in the middle of the aforementioned "transitional" period and overlaps with the later half of the stratigraphic distribution of Unspecified Black. Vessel shapes characteristic of both types include ovoid or periform jarrones and necked bottles (though none of the latter were found in the Castillo assemblage from our excavations), as well as hemispherical bowls (Figure 7.14). Castillo also features composite silhouette bowls (all of which appear to have been flat-bottomed bowls) which might therefore be thought of as complementary to the Unspecified Black assemblage, which includes none of these. In terms of form, there is no confusing Castillo flat-bottom bowls with contemporary Papagayo and Vallejo composite silhouette bowls, just as there is no confusing Unspecified Black hemispherical bowls with Papagayo and Vallejo bowls.

The primary reason for not identifying Unspecified Black with Castillo Engraved is that Castillo, as its name implies, is engraved with geometric patterns after firing, typically around the rim. Since none of the Unspecified Black rim sherds are similarly decorated, they therefore lack the primary diagnostic characteristic of the type. However, it is possible–perhaps even probable–that Unspecified Black represents an "unengraved" variety of Castillo, or that the engraving on these particular vessels occurred elsewhere on the body than on the preserved rim. Alternatively, Unspecified Black may be identifiable with Lago Black Modelled, another Sapoá-Ometepe type described by Healy (1980:133). Healy describes four types of Lago vessels (bowls, jars, effigy vessels and necked bottles), all of which *seem* as if they could be associated with the Unspecified Black forms already described, though unfortunately it is difficult to be certain based on the two partial vessels illustrated by Healy (1980:134, Figure 51). Yet once again, the lack of the diagnostic trait of modelled decoration on the Unspecified Black prevents an easy identification of the two types,

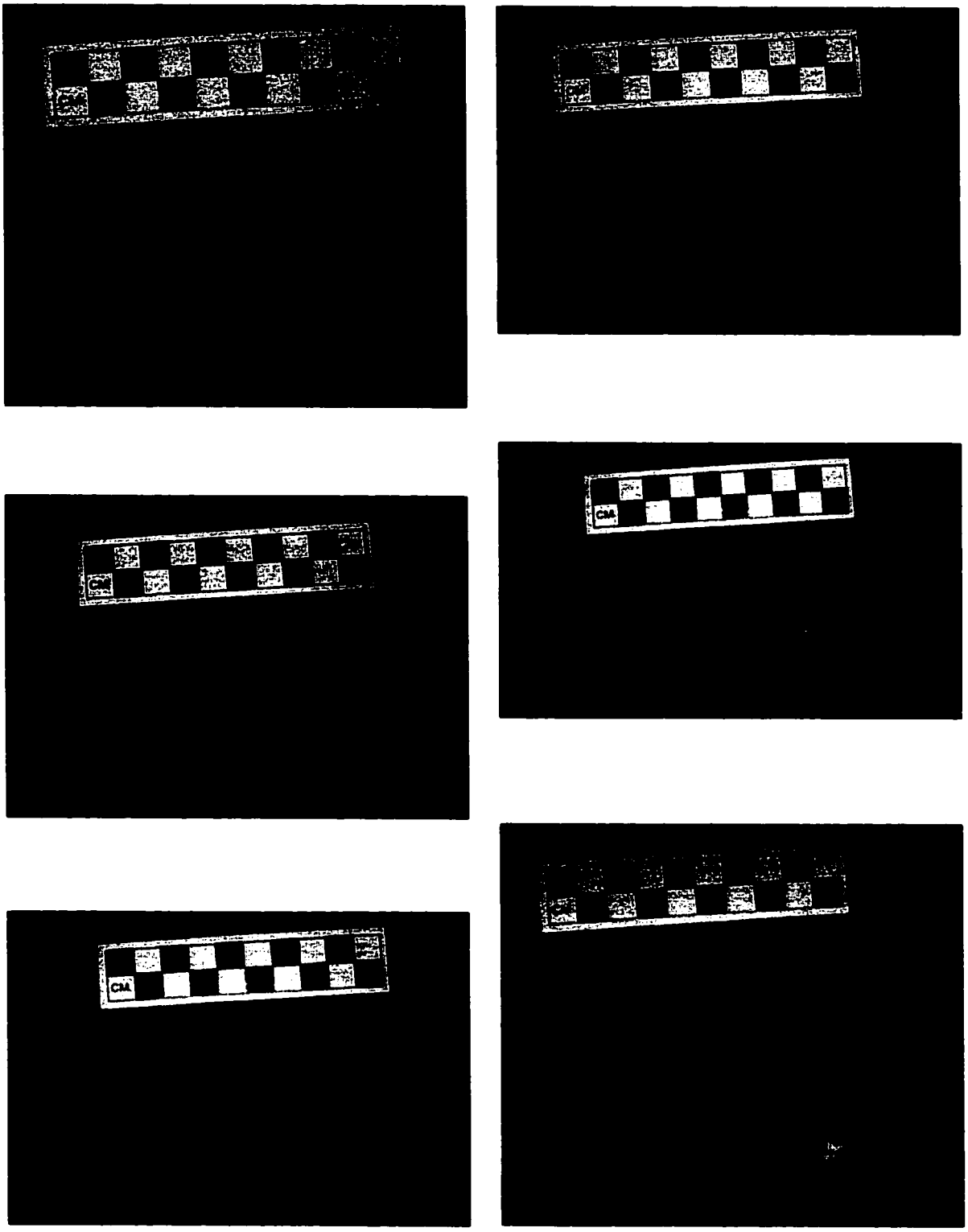


Figure 7.13 Castillo Engraved

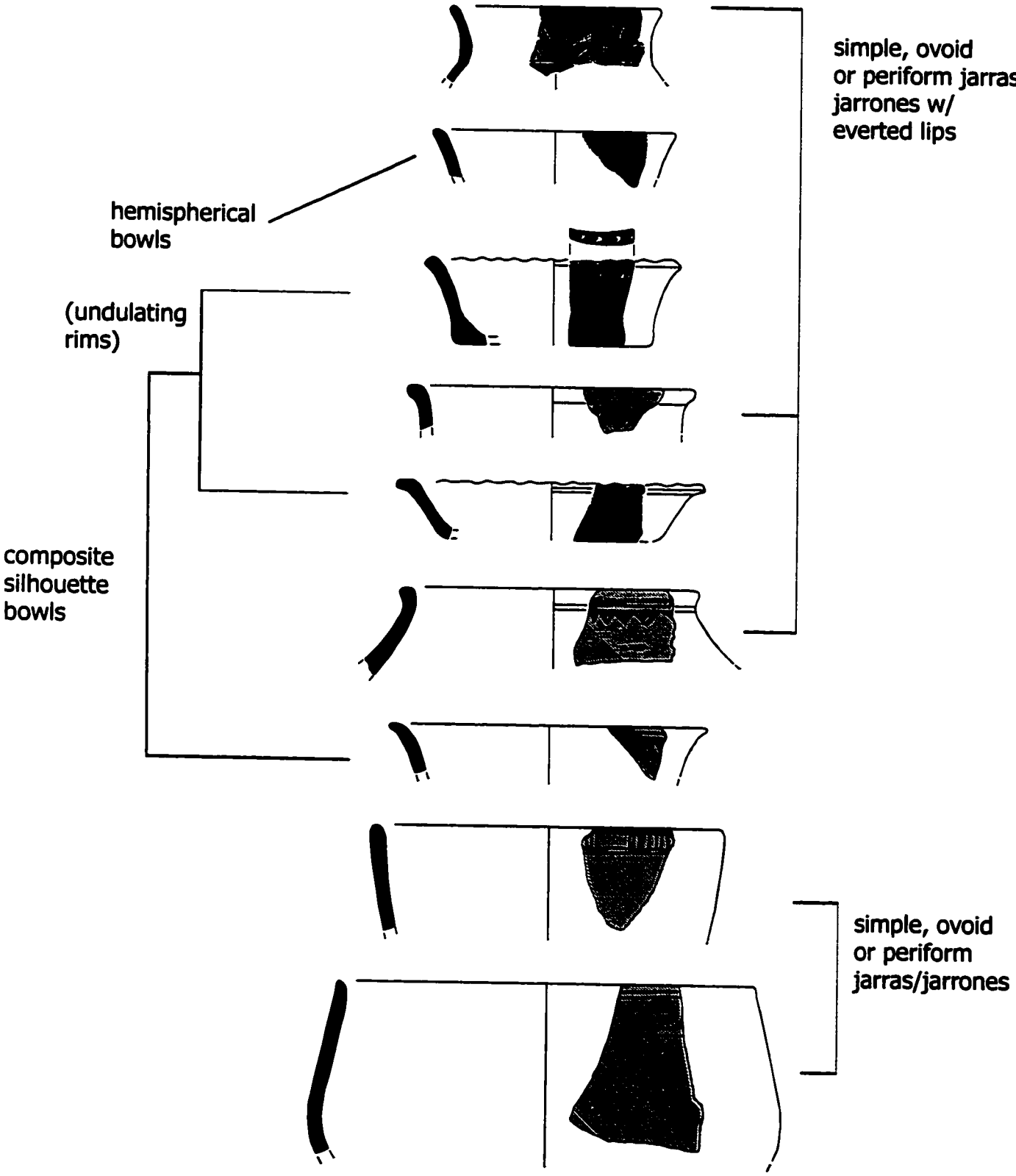


Figure 7.14 Typical Castillo Engraved vessel forms (30% of original size)

although as Figure 7.12 indicates, one small hemispherical bowl features a modelled face on its exterior.

Complicating matters is the fact that Willey and Norweb's excavations found no Lago at Santa Isabel "A" (though it was found at the earlier Santa Isabel "B" site). As in the case of Castillo, Unspecified Black may represent an undecorated variety of Lago. In fact, given the great degree of similarity between the three types, it may even be case that Castillo, Lago and Unspecified Black all represent, respectively, incised, modelled and undecorated varieties of one larger type (interestingly, Healy includes both Castillo and Lago in his "Chocolate Ware" category, as did Lothrop [1980:86]). Supporting this argument is the fact that one of the Castillo Engraved rim sherds recovered at Santa Isabel (Figure 7.13) featured a modelled animal head in addition its more typical engraved decoration, thus combining the diagnostic features of two different black-slipped types in one sherd. The complex nature of the problem clearly warrants a comparative analysis of specimens of each of these types before Unspecified Black is officially renamed "Castillo Plain" or "Lago Black Unmodelled".

The third potential new type found in Sapoá-Ometepe contexts, Unspecified Red-on-White Bichrome, consisted only of collared, white-slipped hemispherical and superhemispherical bowls with red-painted rims (Figure 7.15). Bichromes in Nicaragua are more typical of the Bagaces Period, and these may simply be relics that, like the aforementioned Tempisque-Bagaces sherds, somehow found their way into a later context. These ceramics also bear some resemblance to types like El Bosque Red-on-Buff from the Central Highlands/Atlantic Watershed region of Costa Rica (Benson 1981:198). While distinct, the three sherds of Unspecified Red-on-White Bichrome could not be associated with any previously defined Rivas-area types.

Ometepe Period Types. Thirteen per cent of Santa Isabel rim sherds (29 per cent of all serving-ceremonial vessels) belonged to as many as nine distinct types that can be associated with the Ometepe Period. Previously identified types (e.g., Bonilla L. et al. 1990; Healy 1980) included Castillo Engraved, Vallejo Polychrome, Madeira Polychrome, Bramadero Polychrome, Luna Polychrome and Ometepe Red-Slipped Incised. Three varieties of Vallejo were identified: Vallejo variety, Mombacho and an unspecified variety characterised by

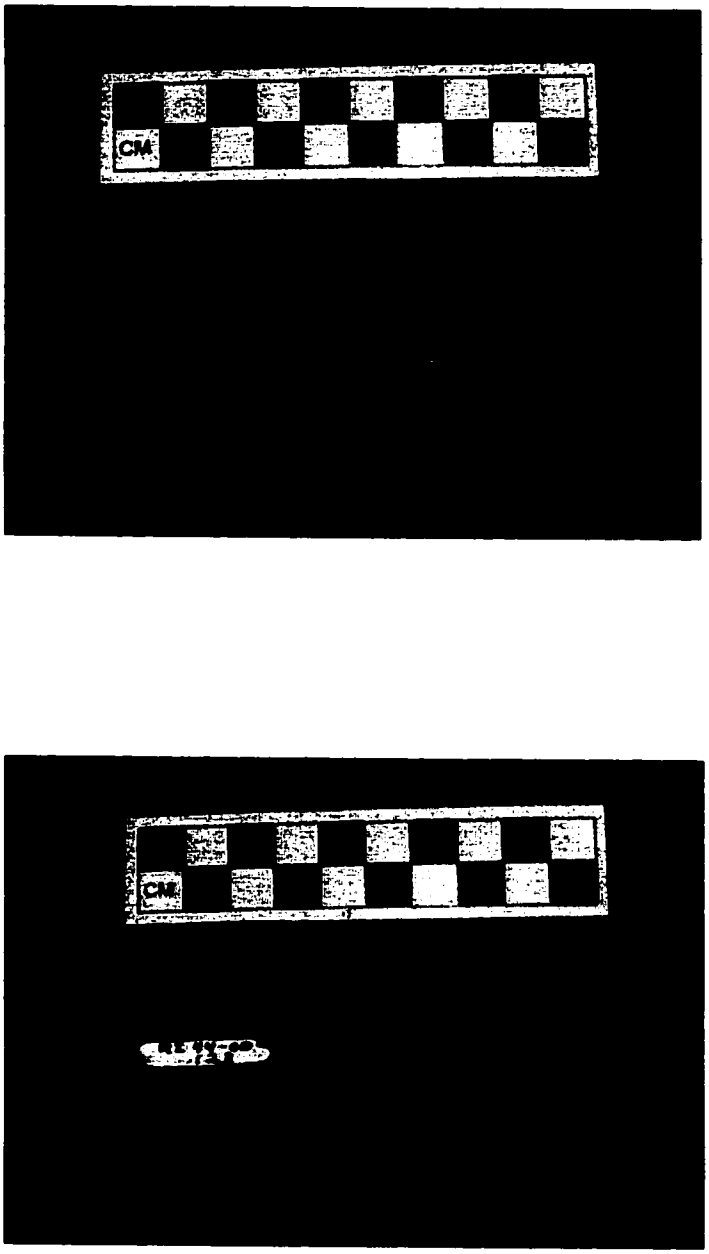


Figure 7.15 Unspecified Red-on-White Bichrome

"Papagayo-like" fabric. Three varieties of Madeira were also identified: Las Marias, Banda and an unspecified variety. Another late type supposedly of Costa Rican origin, Murillo Appliqué, was originally identified at the site solely on the basis of miscellaneous black-slipped appliqued body sherds, though these sherds might be more simply related to one of the black-slipped types discussed above. Two additional potential types, Unspecified Cream Polychrome and Unspecified Buff, were also noted.

As a group, the types classed as Ometepe-specific or diagnostic were generally distributed in increasing frequencies in the upper levels of excavated units, a pattern that was observable (albeit weakly) even in the shallowest of the excavated units. In the two units with the greatest overall concentrations of Ometepe-specific material, N20E30 and N30E10, the concentration of Ometepe diagnostics begins in the transitional zone and appears to peak before the end of the sequence, diminishing in subsequent levels. In terms of spatial distribution, Ometepe-Period ceramics, as already noted, tended to be distributed towards the northwest of the mound, and the greatest concentration and diversity of Ometepe-specific material found in any unit–24 per cent–was found in the unit located in that area, N30E10 (Table 7.5). This northwest distribution is particularly prominent with regard to the two most common Ometepe diagnostic types, Madeira and Vallejo (though to a somewhat lesser extent in the case of the latter type), but is not borne out by the other significant Ometepe diagnostic type, Castillo Engraved, which was rare in the shovel tests and is distributed more sporadically across the mound (Figure 7.16).

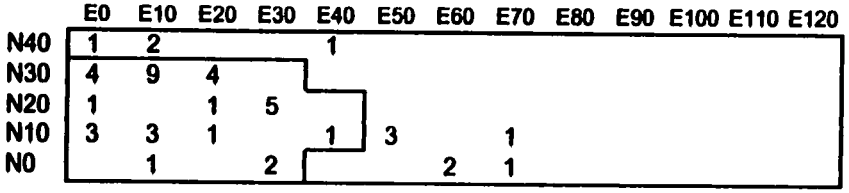
The Ometepe diagnostic types identified at Santa Isabel were found to be generally consistent with the descriptions provided in the archaeological literature, though they held a few more surprises than the Sapoá-Ometepe types. The rarest types, Bramadero and Luna bowls and Ometepe Red-Slipped Incised jarras/jarrones, are all apparent imports to the Santa Isabel area and were not found in Willey and Norweb's excavations of the site. Bramadero is a type more common in Costa Rica–particularly in the border region (Bonilla L. et al. 1990:311)–and was not reported at all in Healy's survey, while Luna and Ometepe Red-Slipped Incised are both presumed to have been manufactured on Ometepe Island itself, where Luna appears in large quantities (Healy 1980:161). Luna is extremely rare in all parts

LEVEL	1		2		3		4		5		6		7		8		9		10		11		12		13		wall		Totals	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
SERVING-CEREMONIAL VESSELS, TEMPISQUE & BAGACES																														
Leon Punctate											1	2																	1	0
SERVING-CEREMONIAL VESSELS, SAPOÁ OR OMETEPE																														
Papagayo: Variety Indeterminate					1	4			1	3	5	11	4	17			2	25	2	8	1	10	2	15					18	7
Papagayo: Alfredo											2	4											1	8			1	11	4	1
Papagayo: Casares			1	17	1	4							1	4															3	1
Papagayo: Fonseca	1	4									1	2			1	3													3	1
Papagayo: Mandador	1	4									2	4	1	4	1	3	1	13					1	8					7	3
Papagayo: Manta					1	4																							1	0
Pataky Polychrome													1	4	3	10			1	4			2	15					7	3
Unspecified Black	2	8							1	3	2	4	1	4											1	20			7	3
Ricardo Red											1	2	1	4	1	3			4	17	2	20	2	15	1	20			12	4
Unsp. White-slipped Polychrome									1	3					1	3													2	1
SERVING-CEREMONIAL VESSELS, OMETEPE																														
Bramadero Polychrome			1	17							2	4	1	4															4	1
Luna Polychrome	1	4							2	6																			3	1
Madeira: Las Marias	2	8			1	4	3	18	2	6	4	9	3	13	6	20	1	13			1	10							23	8
Madeira: Banda							1	6	1	3	1	2	1	4															4	1
Madeira: Variety Unspecified											1	2	1	4	1	3													3	1
Vallejo: Variety Indeterminate	1	4			1	4									2	7													4	1
Vallejo: Vallejo	1	4							2	6	2	4			2	7	1	13	1	4									9	3
Vallejo: Mombacho									1	3	1	2							1	4									3	1
Cream-slipped, Unidentified							1	6											1	4									2	1
Unspecified Buff					2	8			1	3																			3	1
Unsp. White-slipped Polyc., late-style fabric					2	8	1	6	5	16	1	2																	9	3
UTILITARIAN VESSELS, SAPOÁ & OMETEPE																														
Rivas Red: Rivas	10	42	1	17	2	8	5	29	3	9	12	26	6	25	5	17	1	13	6	25	3	30	2	15	2	40	6	67	64	23
Rivas Red: Variety Unspecified	1	4			1	4			3	9	3	7			2	7	1	13	4	17	1	10			1	20			17	6
Sacasa Striated	1	4									2	4	1	4	1	3	1	13	2	8	1	10					1	11	10	4
Unspecified Unslipped Monochrome					3	12	1	6	2	6	3	7	1	4							1	10							11	4
IND. TOO SMALL SHERDS	3	13	3	50	11	42	5	29	7	22			1	4	4	13			2	8			3	23			1	11	40	15
TOTALS	24	100	6	100	26	100	17	100	32	100	46	100	24	100	30	100	8	100	24	100	10	100	13	100	5	100	9	100	274	100
Total - Serving-Ceremonial Vessels	9	38	2	33	9	35	6	35	17	53	26	57	15	63	18	60	5	63	10	42	4	40	8	62	2	40	1	11		
Total - Sapoá/Ometepe Period S-C. Vessels	4	17	1	17	3	12	0	0	3	9	13	28	9	38	7	23	3	38	7	29	3	30	8	62	2	40	1	11		
Total - Ometepe Period Diagnostics	5	21	1	17	6	23	6	35	14	44	12	26	6	25	11	37	2	25	3	13	1	10	0	0	0	0	0	0		
Total - Utilitarian Vessels	12	50	1	17	6	23	6	35	8	25	20	43	8	33	8	27	3	38	12	50	6	60	2	15	3	60	7	78		

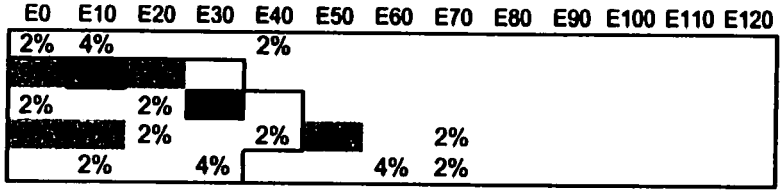
Table 7.5 Stratigraphic distribution of types in Unit N30E10

MADEIRA

Rim sherds per shovel test (n=46)

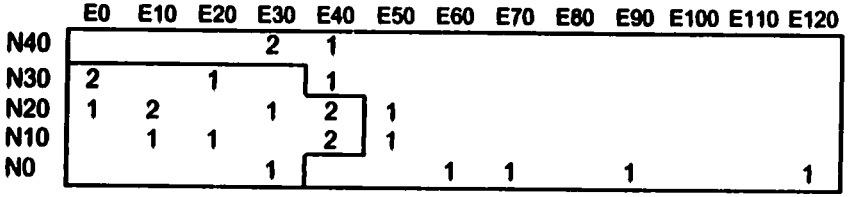


Percentage of sherds per shovel test

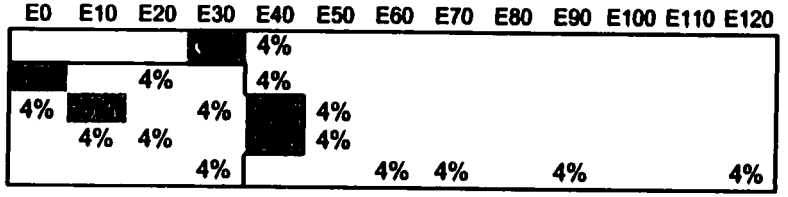


VALLEJO

Rim sherds per shovel test (n=24)

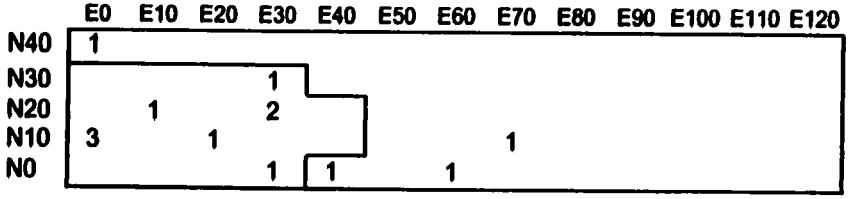


Percentage of sherds per shovel test

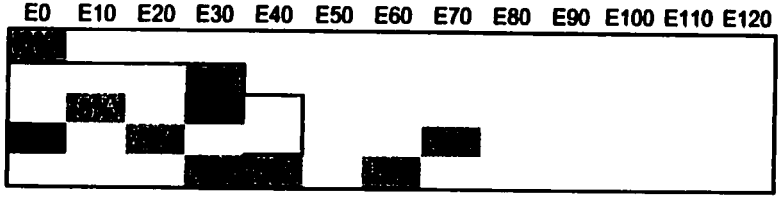


CASTILLO ENGRAVED

Rim sherds per shovel test (n=13)



Percentage of sherds per shovel test

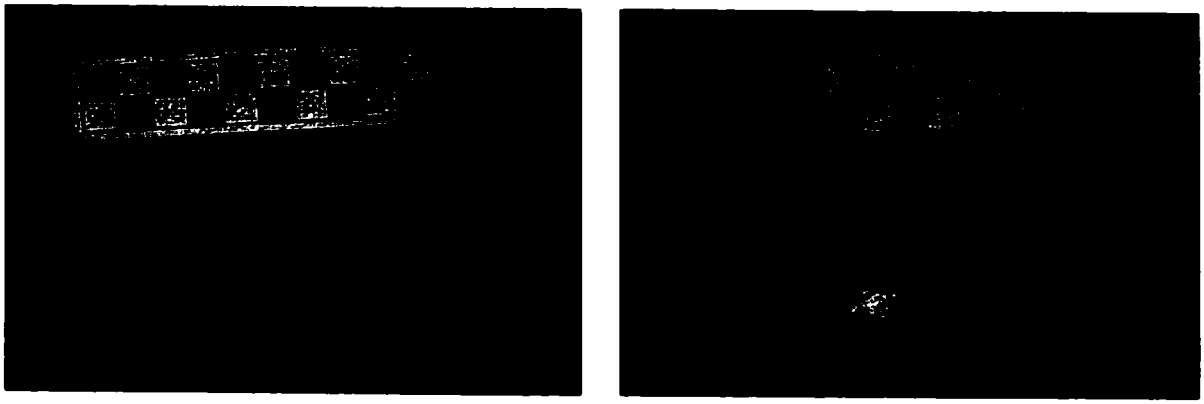


5-9% 10% and greater 20% and greater

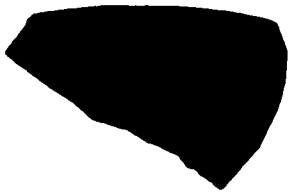
Figure 7.16 Distribution of Ometepe Period diagnostic types in shovel tests

of Nicaragua other than Ometepe Island (Gorin 1992:32; Niemel et al. 1998:679) but is nevertheless an excellent late Ometepe Period chronological marker, having been found in protohistoric burials that also included Spanish trade items as grave goods (Healy 1980:140). The apparent imported nature of Luna and Bramadero at Santa Isabel is particularly intriguing considering that NAA studies have placed samples of the two types in the same compositional groups as the more typical Rivas types Granada and Madeira, implying a somewhat common origin for all four types (Bishop et al. 1988:22). Healy suggests that Luna especially can be identified with the Nicarao because some sources indicate that they occupied Ometepe Island at the time of the Conquest (1980:140).

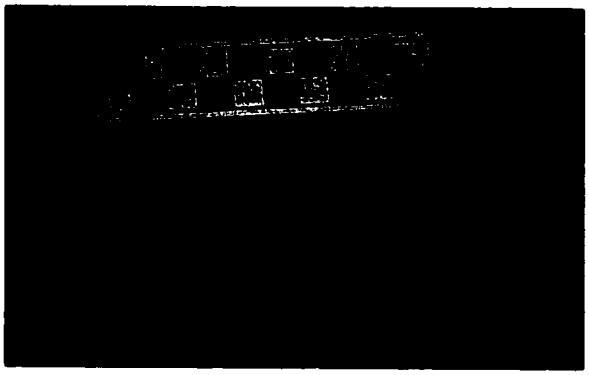
Vallejo varieties (Figure 7.17) bear a greater structural resemblance to Papagayo Polychromes than they do to the other major types of the Ometepe Period like Madeira and Castillo, and generally share the same range of vessel shapes as Papagayo: periform or ovoid jarrones (18% of the identifiable sample) and hemispherical (15%), superhemispherical (53%), and composite silhouette (14%) bowls. However, the relative frequency of these forms in the assemblage was dramatically different than that of Papagayo (Figure 7.18), and Vallejo bowls and jaronnes tend to feature slightly everted lips that give them a distinctive silhouette amongst Rivas ceramics (Figure 7.19). Vallejo Polychromes are also distinguished by slips that resemble finely-cracked latex paint and decoration that is more generically "Mesoamerican" than virtually any other Greater Nicoyan ceramic type (Quetzalcoatl and the earth monster are common reported motifs) (Healy 1980:246). While Healy observes that Vallejo paste is similar to that of Papagayo (1980:243), Niemel classified less than four per cent of our sample (which was more than three times as large as Healy's) under a distinct category characterised by "Papagayo-like fabric" and observed that this was atypical of most of the Vallejo that she had previously examined (personal communication 2000). The Greater Nicoya Ceramic Project's NAA studies confirmed the existence of at least two different compositional groups for Vallejo pottery, and found that a small proportion of the Vallejo sample (belonging to the Mombacho variety) did indeed belong to a compositional group that included the vast majority of the Papagayo and Pataky samples (Bishop et al.



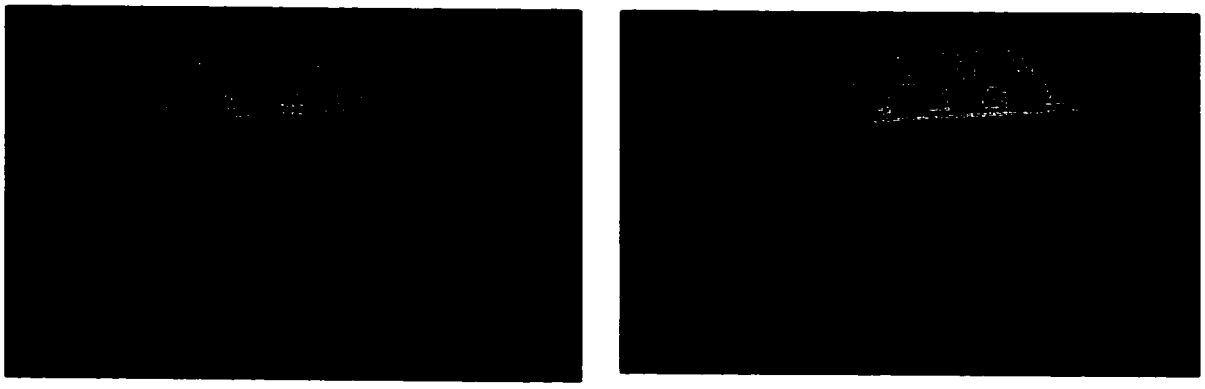
Vallejo variety



Vallejo variety



Mombacho variety



Variety Unspecified with "Papagayo-style" fabric

Figure 7.17 Vallejo Polychrome

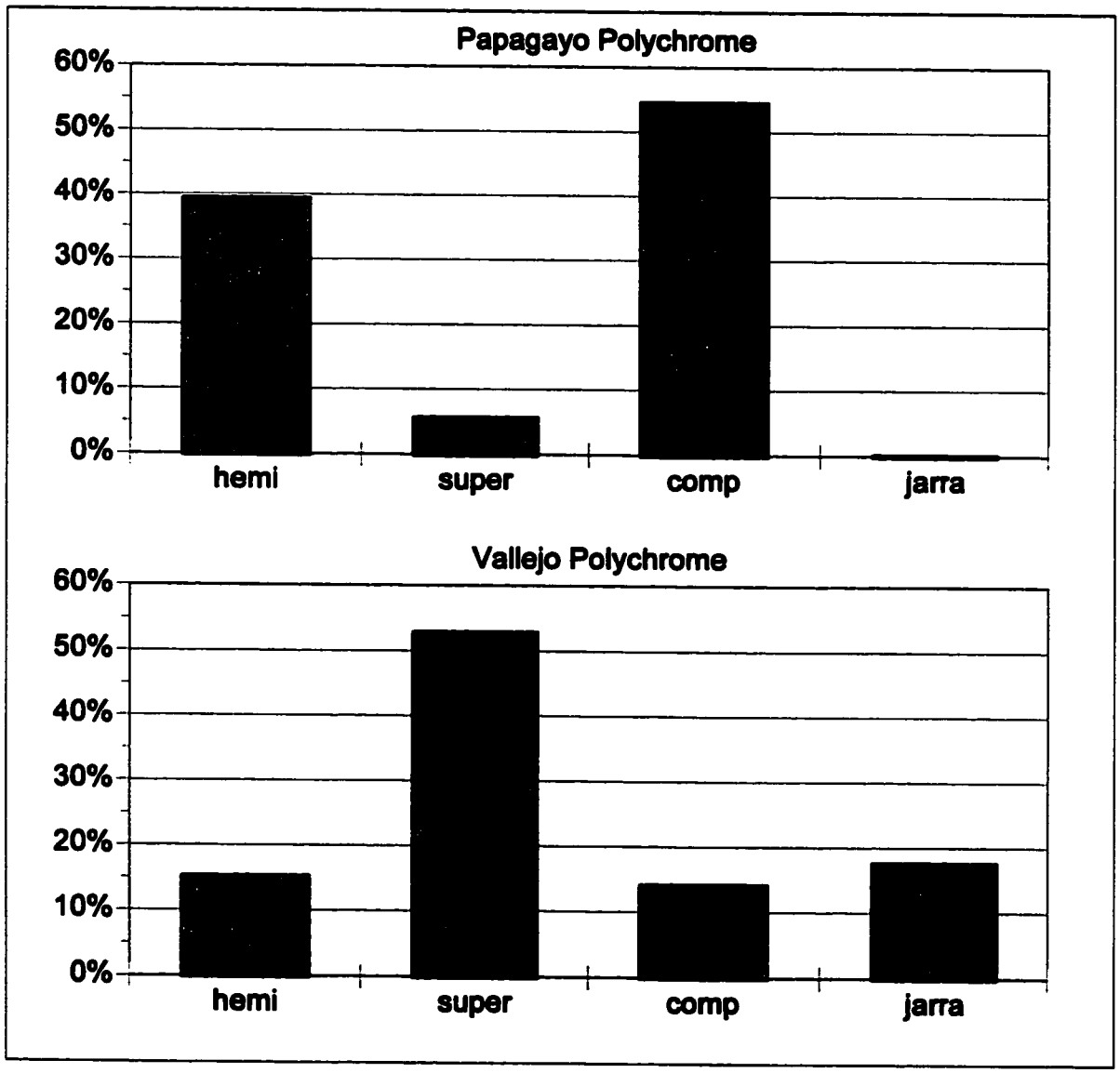


Figure 7.18 Comparison of relative frequencies of vessel forms in Papagayo and Vallejo types

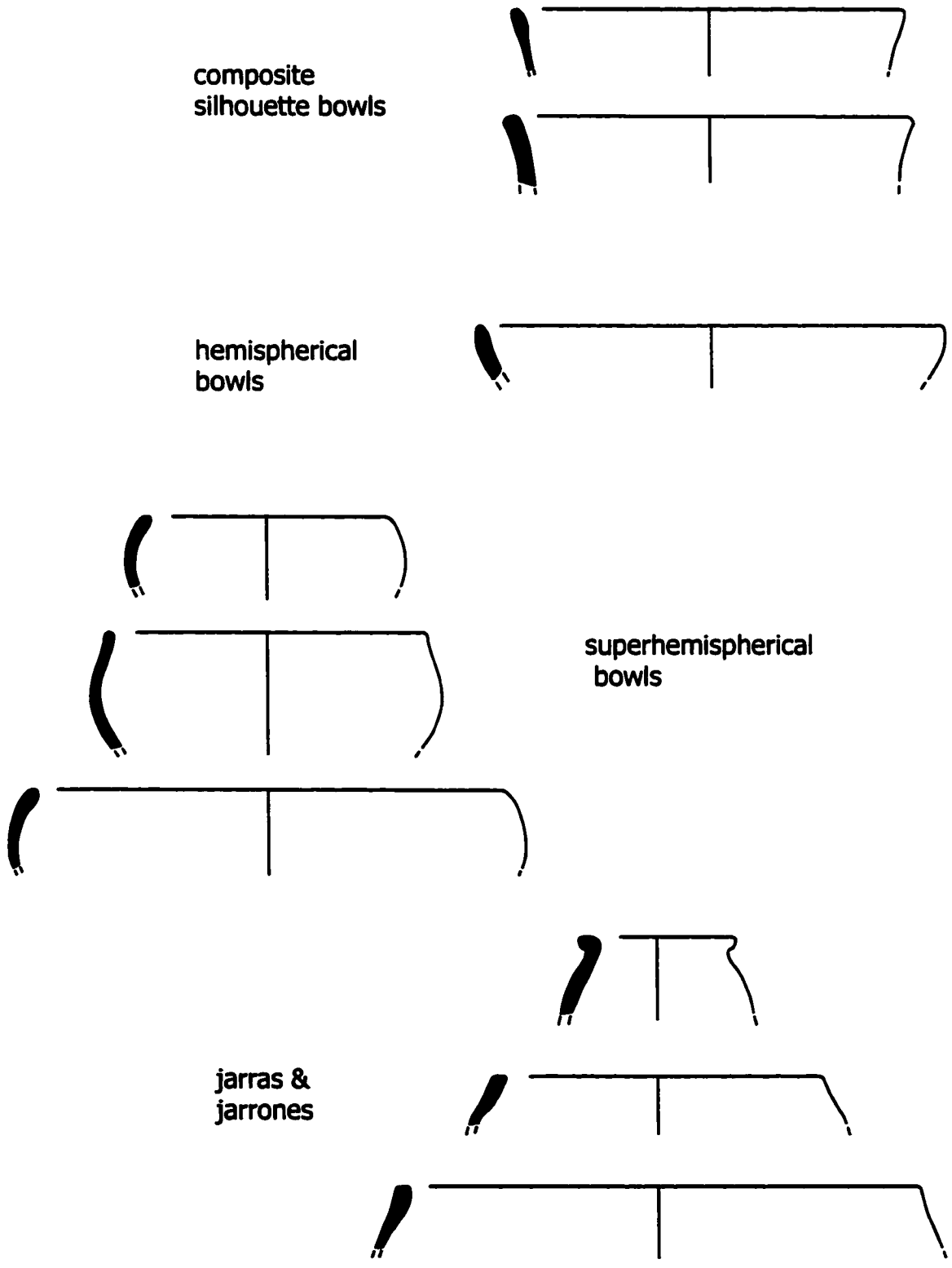


Figure 7.19 Typical Vallejo Polychrome vessel forms (30% of original size)

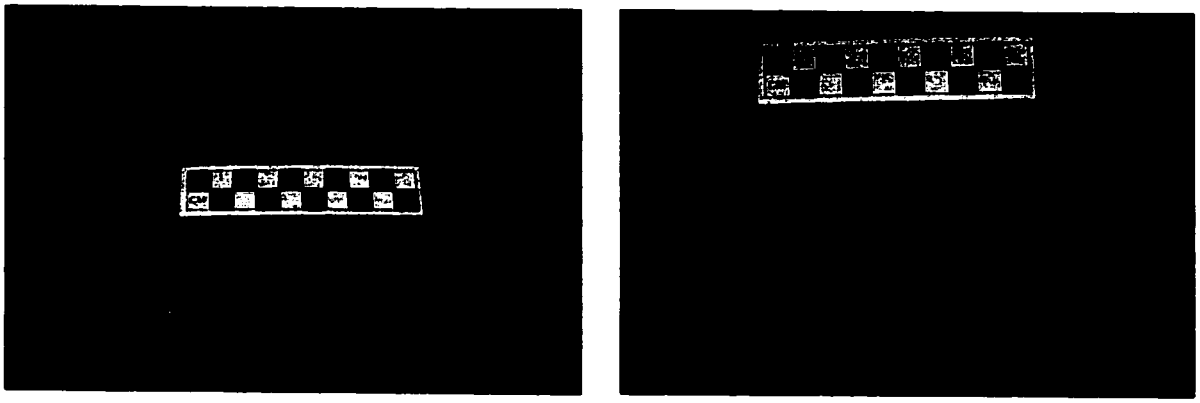
1988:22; Lange et al. 1992). This suggests a common centre of manufacture for the two types, a point to which we will return later.

While Healy suggests a rather limited temporal distribution for Vallejo in the Ometepe Period (1980:244), the stratigraphic evidence from N20E30 suggests a longer duration for the type at Santa Isabel than for either Madeira and Castillo, the two other major Ometepe diagnostics at the site (Table 7.4). Vallejo, which is more common in N20E30 than Madeira, appears in much earlier contexts than Madeira and appears in higher frequencies in the uppermost levels. In N30E10, where Madeira is twice as common as Vallejo, the stratigraphic distribution of the two types is roughly contemporaneous (Table 7.5). In N20E30, Vallejo brackets Castillo, which begins at the same approximate time as Madeira but endures for a much shorter period–a duration that, in fact, is more similar to the transitional Sapoá-Ometepe type Pataky than to the other Ometepe diagnostics. It is interesting to note in relation to this that Norweb's preliminary study of the material later analysed by Healy originally associated Castillo with the period now known as the Sapoá rather than the Ometepe (1964:555).

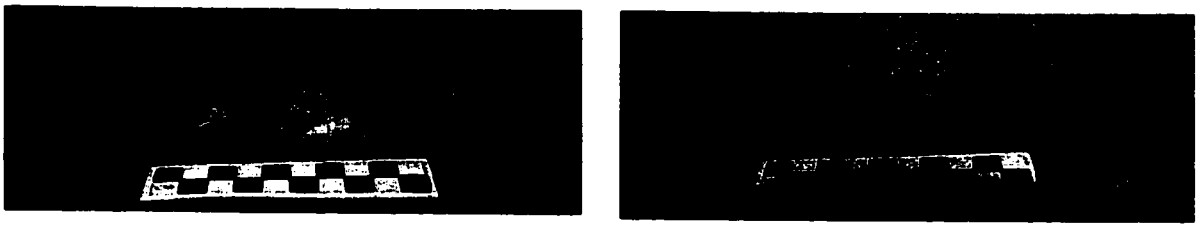
The combined evidence would seem to suggest that Vallejo perhaps has a longer history than Healy assumed, beginning in the transitional period along with types like Pataky, Granada and Ricardo Red. This interpretation appears to be supported by Salgado's work in the Granada area north of Rivas (1996:436, Table D2). The distribution of the small sample of the Mombacho variety (defined by its incised under-slip decoration and discussed as a separate type by Healy) is concentrated in the transitional zone in the only two units where it was found in stratigraphic contexts, and therefore does not appear to be quite as effective a chronological marker of the Ometepe Period as Healy (1980:148) suggests, although Healy does note that Mombacho begins in the late Sapoá, the period with which Norweb originally associated it (1964:555). Since Mombacho and Castillo are the only two Sapoá or Ometepe types identified at Santa Isabel that are defined by incised or engraved decoration, their contemporaneity may suggest a certain preference for this mode of decoration during the transitional period.

Madeira Polychrome was the most common (not to mention distinctive) of the Ometepe diagnostics at Santa Isabel (Figure 7.20). The only vessel shapes were bowls: composite silhouette (78%), hemispherical (15%) and superhemispherical (7%) (Figure 7.21). Tripod rattle supports (generally in the shapes of animal or bird heads) were common features on composite silhouette bowls; bowls in the composite silhouette category without supports were likely to be flat-bottomed bowls with undulating/dentate rims, and in this respect greatly resembled bowls in the Castillo Engraved type, the only other Ometepe type to feature these traits. Hemispherical bowls decorated on the interior surface were the only form apparent in the Banda variety, while Madeira: Variety Unspecified was predominantly composed of superhemispherical bowls that reversed this decorative scheme and which also occasionally featured orange paint, not found on other Madeira types. The Madeira: Variety Unspecified bowls were observed by Dr. McCafferty to be strikingly similar to bowls found in Cholula in Central Mexico. As already noted, NAA studies have suggested that Madeira belongs to the same compositional groups as Luna, Bramadero and Granada, and strong decorative similarities between Madeira and Granada seem to indicate a "genetic" relationship between the two types. Madeira is also common on Ometepe (where Vallejo is rare) and is more common in Rivas than in the rest of Nicaragua (Niemel et al. 1998:679).

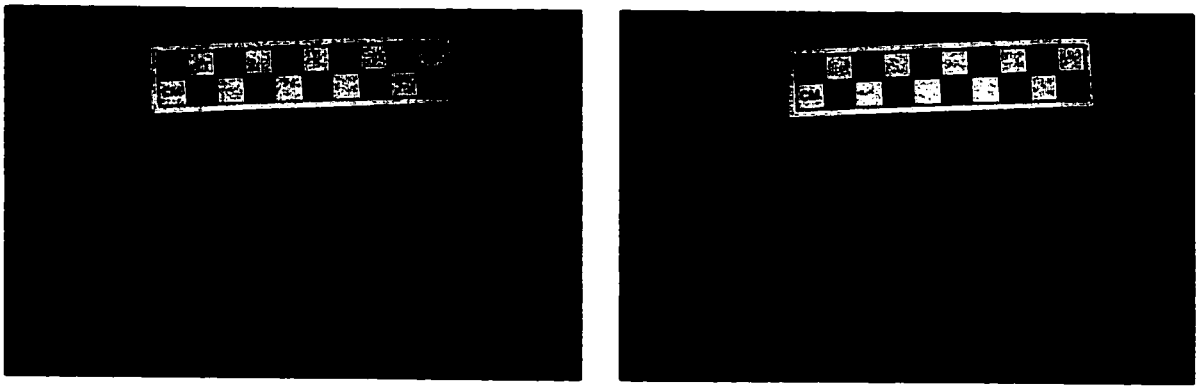
Castillo Engraved, the least common of the three main Ometepe diagnostic types, has already been discussed at some length in the context of the preceding discussion. We have already noted its likely identification with our unknown Unspecified Black type, its atypical spatial distribution (for an Ometepe type) and apparently short chronological duration during the Sapoá-Ometepe transition, its decorative similarities to Vallejo: Mombacho and its formal similarities to Madeira. Castillo is especially distinct in its formal frequencies: its most common form is the ovoid/periform jarras (65%), a rare form in all other types from this area. Other Castillo forms include flat-bottom composite silhouette bowls (27%) and hemispherical bowls (8%). Similar black or chocolate-slipped incised wares (possibly including the aforementioned pottery of Chira Island) are widely dispersed throughout Central America as far south as Panama (Healy 1980:103), but the type seems to be connected to Central Mexico as well. Healy illustrates a Castillo sherd with an incised



Las Marias variety



Banda variety



Variety Unspecified

Figure 7.20 Madeira Polychrome

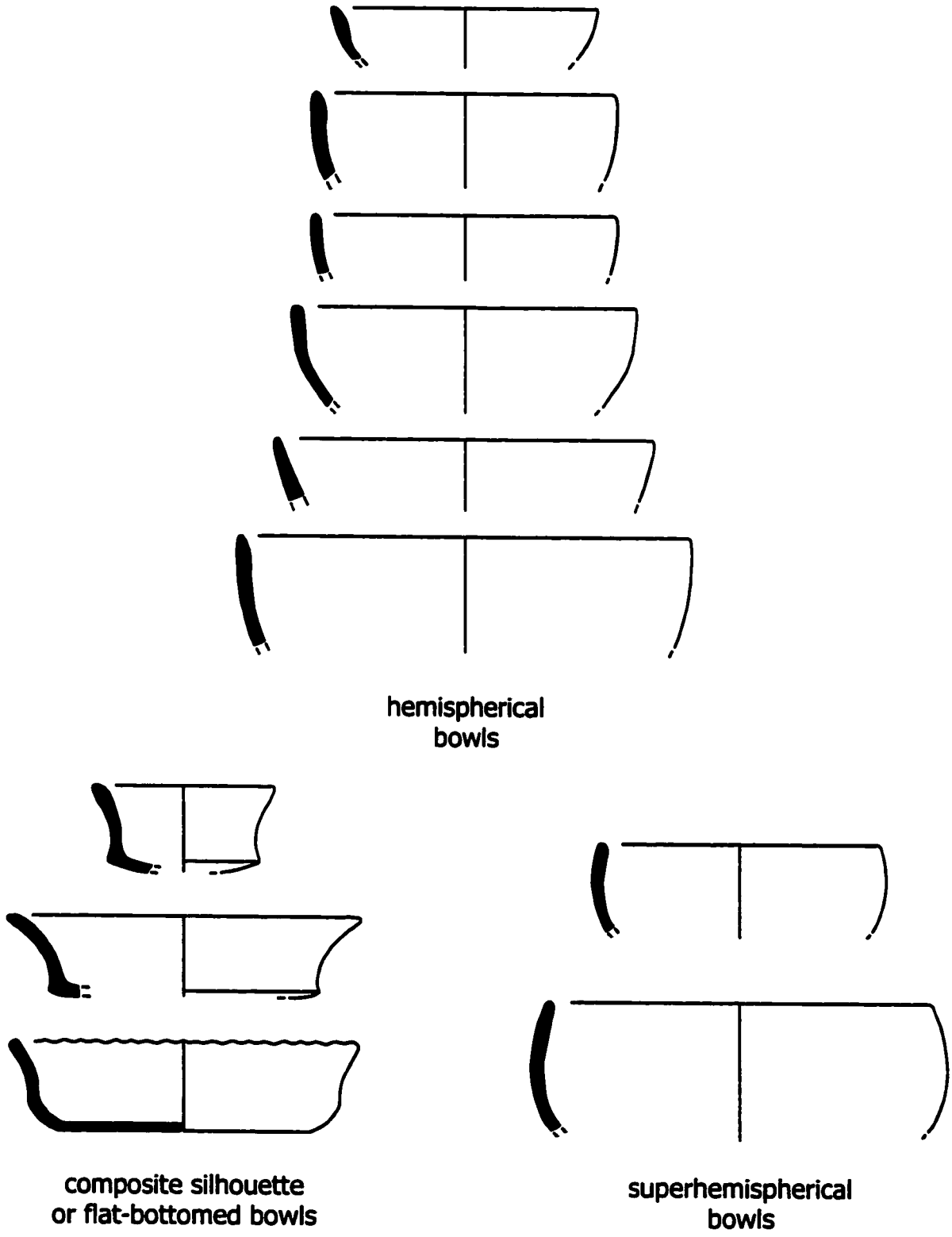


Figure 7.21 Typical Madeira Polychrome vessel forms (30% of original size)

feathered serpent design (1980:101, Figure 32), and photographs of Clara Luz Black Incised, a type found at Tula, Hidalgo, feature sherds incised with geometric designs that appear to be identical to those recovered from Rivas (Cobean 1990:104-10, Plates 33-43).

Two dozen sherds of small, buff bowls with occasionally red painted (not slipped) rims were given the tentative type name of Unspecified Buff since they could not be identified with any known vessels from the Sapoá or Ometepe periods (Figure 7.22). These sherds appeared very consistently in upper stratigraphical levels in all five excavated units, in contexts that clearly associated them with Ometepe-Period material. Unspecified Buff bowls were singular and significantly smaller than most of the pottery from the site, with average orifice diameters of about 10 cm, compared to the 16-20 cm average diameters of Papagayo, Vallejo and Madeira bowls. Most of the bowls were superhemispherical or near-superhemispherical, with everted or outflaring rims. Some bowls featured vertical walls with no thickening of the rim. The bowls appeared to be burnished rather than slipped. A second unknown type, Unspecified Cream Polychrome, was also found in Ometepe contexts in all five units. The vessel shapes of this small sample were similar to those of the known white-slipped polychromes, and included composite silhouette (43%), hemispherical (29%) and superhemispherical (29%) bowls. Decoration was very sparse in comparison with the generally more elaborate white-slipped polychromes, consisting of simple black or red lines with occasional "hook" motifs. As we have already noted, cream-slipped and buff types are much more typical of Costa Rica than Nicaragua, and both Unspecified Buff and Unspecified Cream Polychrome may represent trade items.

Utilitarian Vessels

The term "utilitarian vessel", as already noted, is used in this study to describe rather plain and typically undecorated monochrome vessels that were most likely used for such commonplace tasks as cooking, carrying water and storing food. As we have seen, utilitarian vessels as a group were marginally less common than serving-ceremonial vessels, though there are few serving-ceremonial vessel types that rival individual utilitarian vessel types in terms of rim sherd percentages. The percentage of utilitarian vessels in the assemblage increases

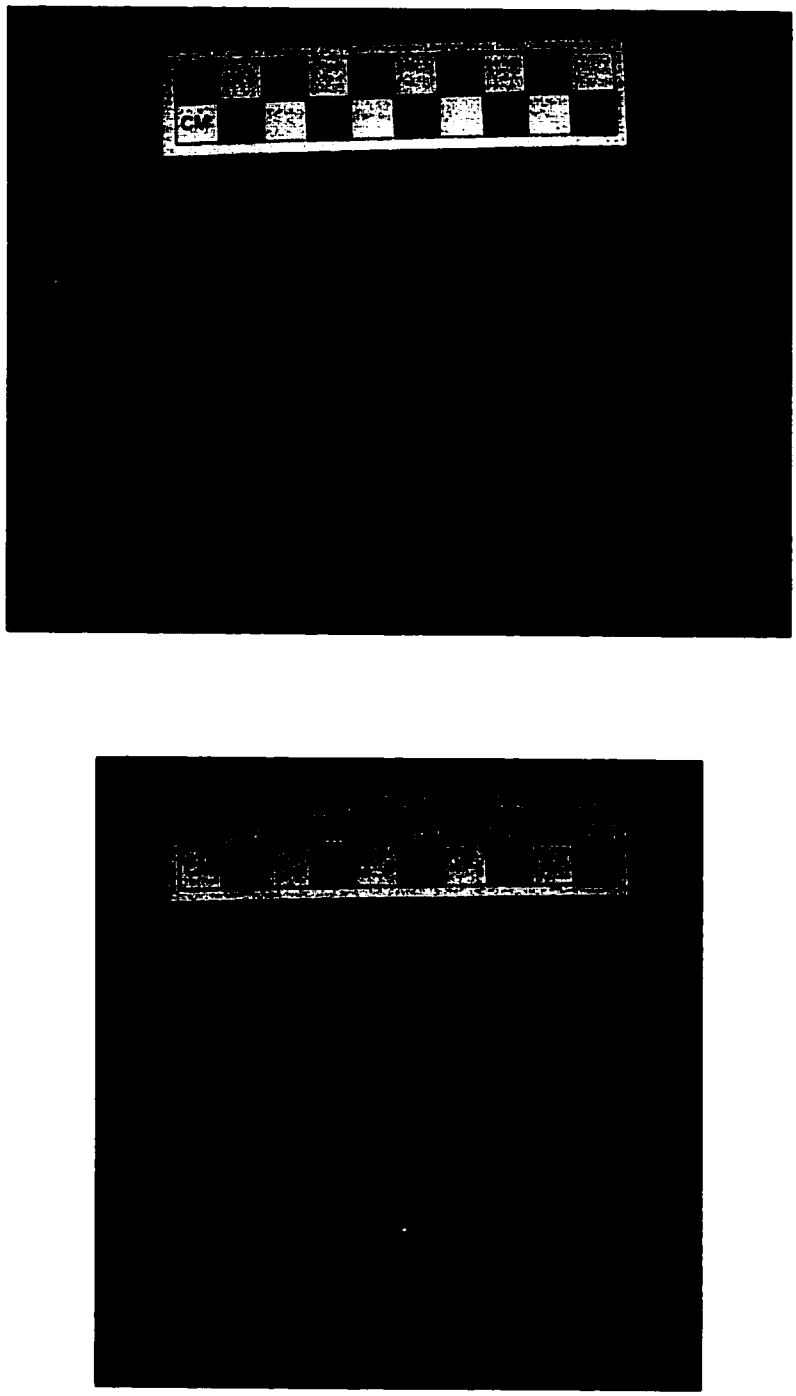


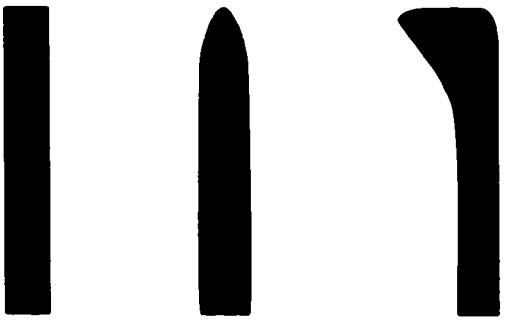
Figure 7.22 Unspecified Buff

over time as serving-ceremonial vessel frequencies decrease, and while equal amounts of utilitarian vessels were found on and off the mound as serving-ceremonial vessels, utilitarian vessel sherds were somewhat more dispersed over the rest of the surveyed area than serving-ceremonial vessel sherds.

Utilitarian vessel types are poorly known in comparison to serving-ceremonial vessel types, and are not particularly useful as temporal markers when dealing with sites dating to the Sapoá and Ometepe periods. As already noted, Healy describes Rivas Red as continuing through every period in the Rivas chronological sequence, and while Sacasa Striated has a more limited temporal distribution beginning in the Sapoá Period, it is common in contexts from both periods, and cannot therefore be used as a marker for one or the other (Healy 1980:218).

Vessel Shapes. Utilitarian vessels are typically quite different from serving-ceremonial vessels. Illustrations and descriptions of utilitarian vessel forms are rare in the literature outside of Healy (1980), and his categories were not immediately recognisable in the field. Primarily for these reasons, utilitarian vessel rim sherds were sorted according to the general shape of the rim rather than the presumed shape of complete vessels. Initially, three idealised rim classes were identified: bent, straight or wedged, and tapered rims (Figure 7.23). The nature of the orifice (restricted vs. unrestricted), which can be presumed to correlate with the respective classification of these vessels as jars (*ollas*) and pots (*cazuelas*), was also used as a secondary criterion to subdivide these three rim classes into six. However, this criterion could only be used to classify the sample of utilitarian vessels that was selected for measurement, since in many cases the nature of the orifice could not be estimated without actually applying the time-consuming curve-fitting method.

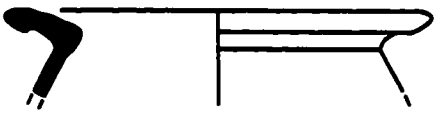
The application of the idealised rim-shape criteria proved problematic in practice for two reasons: (1) it was often difficult to assign a particular rim to a specific category because of the tremendous range of variation in rim morphology and our lack of previous experience with the forms likely to be encountered; and (2) subsequent comparison of the data on radii, wall thicknesses and orifices (not to mention the drawings of sample rim profiles) suggests that this method probably resulted in cases where very different vessels were lumped into one



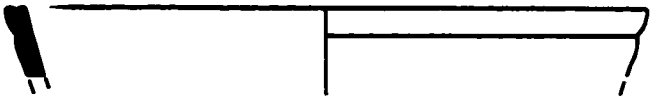
straight and wedge rims

tapered rim

bent rims



restricted orifice
olla



unrestricted orifice
cazuela

Figure 7.23 Idealized rim shape and orifice criteria used for sorting utilitarian vessel sherds

category, and where vessels that might have been grouped together if the entire vessel were available for analysis were placed in separate classes. For example, while their rim profiles were similar to others in the tapered-rim category, a later analysis of orifice dimensions and provenience for several dark-slipped tapered-rim ollas suggests that these might have been more accurately placed in the Unspecified Black category of serving-ceremonial vessel necked bottle-jars, though their "necks" are less sharply defined than is the case with the vessels otherwise associated with that category.

On the other hand, the data does also suggest that if certain rim shapes were not "mandatory" for certain kinds of vessels, they were still preferred for some forms over others. The sample data clearly indicates, for example, that in all types bent rims were preferred for ollas with restricted orifices over cazuelas with unrestricted orifices, and that straight, wedged and tapered rims were preferred for cazuelas rather than ollas (Table 7.6). This strong correlation between rim shapes and orifice types suggests that a closer comparative analysis of the distinctions between, for example, bent rims from ollas and those from cazuelas, combined with a better working knowledge of the range of utilitarian vessel forms, might allow for the future development of a more accurate system of inferring vessel form from rim shape.

Table 7.6 Utilitarian vessel rim preferences for ollas vs. cazuelas

	Bent	Straight/Wedged	Tapered
Ollas (restricted orifice)			
Rivas Red: Rivas	**80%**	30%	15%
Rivas Red: Variety Unspecified	**93%**	30%	44%
Sacasa Striated	**75%**	17%	—
Total, All Types	**82%**	27%	24%
Cazuelas (unrestricted orifice)			
Rivas Red: Rivas	20%	**70%**	**85%**
Rivas Red: Variety Unspecified	7%	**70%**	**56%**
Sacasa Striated	25%	**83%**	—
Total, All Types	18%	**73%**	**76%**

In the field analysis, one rather distinctive vessel form did emerge: a class of pots with unrestricted orifices featuring broad exterior rims. (That the rims of this form could be either wedged, tapered or squared, provides another example of the limitations of our initial efforts

to infer form from rim shape.) Once identified, this broad-rimmed cazuela form became a fourth category for classification in the field. A fifth category of a specific jar form, the *tecomate*, was also recognised in the field. Although it was originally associated with the Ricardo Red serving-ceremonial vessel type, subsequent analysis of the collected data pertaining to wall thickness and radius suggested that this form was more appropriately classed as a kind of utilitarian vessel.

As Table 7.2 indicates, bent-rim sherds, the majority of which can be presumed to have come from ollas, constituted the largest group of utilitarian vessel rim sherds in the entire Santa Isabel rim sherd assemblage (17%), followed by tapered-rim (13%) and straight or wedged rim (4%) sherds that probably came primarily from cazuelas. Broad-rimmed cazuelas (4%) and tecomates (<1%) also constituted small portions of the entire rim sherd assemblage. While it is impossible to provide an accurate statement of the relative frequency of ollas vs. cazuelas for all rim sherds, among the rim sample selected for measurement (n=154), ollas constituted 82, 27 and 24 per cent, respectively, of bent, straight or wedged, and tapered rims, while cazuelas constituted 18, 73 and 76 per cent of the sample from the same rim shapes.

Utilitarian Types. The utilitarian vessels from our sample were divided into four categories for analysis that may correlate with three types described by Healy: (1) Rivas Red: Rivas variety (27% of the entire ceramic rim sherd sample) and (2) Rivas Red: Variety Unspecified (7%), which together can be identified with Healy's Rivas Red type; (3) Sacasa Striated (6%); and (4) a small category of unidentified unslipped monochromes (3%) which may be akin to Healy's Istmo Plain type (1980:130). This latter unidentified monochrome category was not analysed beyond a simple sherd count, partially because of time constraints, but primarily because the sample consisted largely of heavily eroded sherds which would have been problematic to measure and which seemed as likely to represent especially worn samples of the other types named above as anything else. Healy notes that his own Istmo Plain type was a "catch-all" category that spanned the entire chronological sequence and probably included several poorly preserved ceramic types in addition to unslipped vessels, and there is little reason to think differently about our similar category (1980:130-31).

As already noted, Healy included sherds with slips ranging from red to near black in his Rivas Red category. The decision to separate rim sherds into two varieties–one red and the other including sherds with dark-coloured slips ranging from maroon to black–was based on the same logic that led to the separation of Unspecified Black and Ricardo Red. I was interested in challenging the assumption that variances in slip colour were meaningless and exploring the possibility that different coloured slips may have been favoured for different types of vessels (Figures 7.24 and 7.25). While the results of this inquiry did not suggest that Rivas Red: Rivas and Rivas Red: Variety Unspecified were necessarily separate types like Unspecified Black and Ricardo Red, or even find that certain vessels were present in one class that were absent in the other (other than tecomates, of which only four were identified, all Rivas Red: Rivas), it did suggest that the selection of slip colour for specific forms was not completely arbitrary amongst all types of vessels.

While bent-rim (Red: 39%, Variety Unspecified: 42%) and straight or wedge-rim (Red: 12%, Variety Unspecified: 11%) ollas/cazuelas were found in similar frequencies of the identifiable sample in both varieties, tapered-rim vessels were almost twice as common in Rivas Red: Rivas than in Rivas Red: Variety Unspecified (44% vs. 25%) and broad-rimmed cazuelas were five times more likely to feature a dark slip than a red slip (21% vs. 4%) (Table 7.7). The two varieties also appeared to be somewhat differently distributed spatially, based on the shovel test data. Rivas Red: Variety Unspecified was almost exclusively concentrated on the mound, in contrast to the more broadly distributed Rivas Red: Rivas (Figure 7.26). While this raises the possibility that the colour differences may have been related to depositional contexts–if the soil on the mound was more likely to discolour sherds than that of the surrounding fields (cf. Rice 1987:345)–it does not explain the differences in frequencies of tapered-rim vessels and broad-rimmed cazuelas. No clear chronological distinctions could be made for the two varieties, however. Stratigraphic data generally suggested that both red and dark varieties endured in relatively similar frequencies throughout the entire history of the mound, as Healy's work suggested.

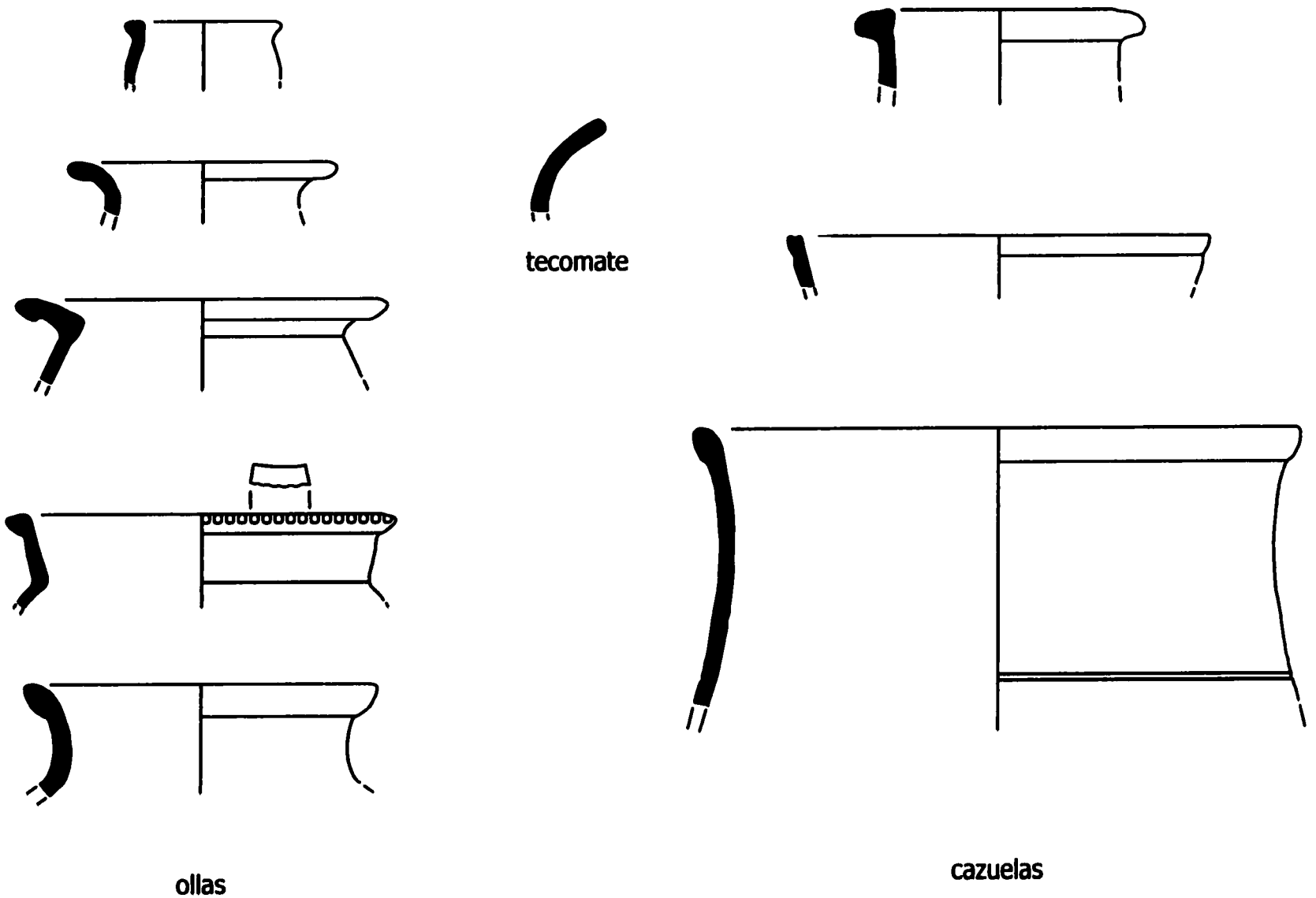


Figure 7.24 Typical Rivas Red: Rivas vessel forms (20% of original size)

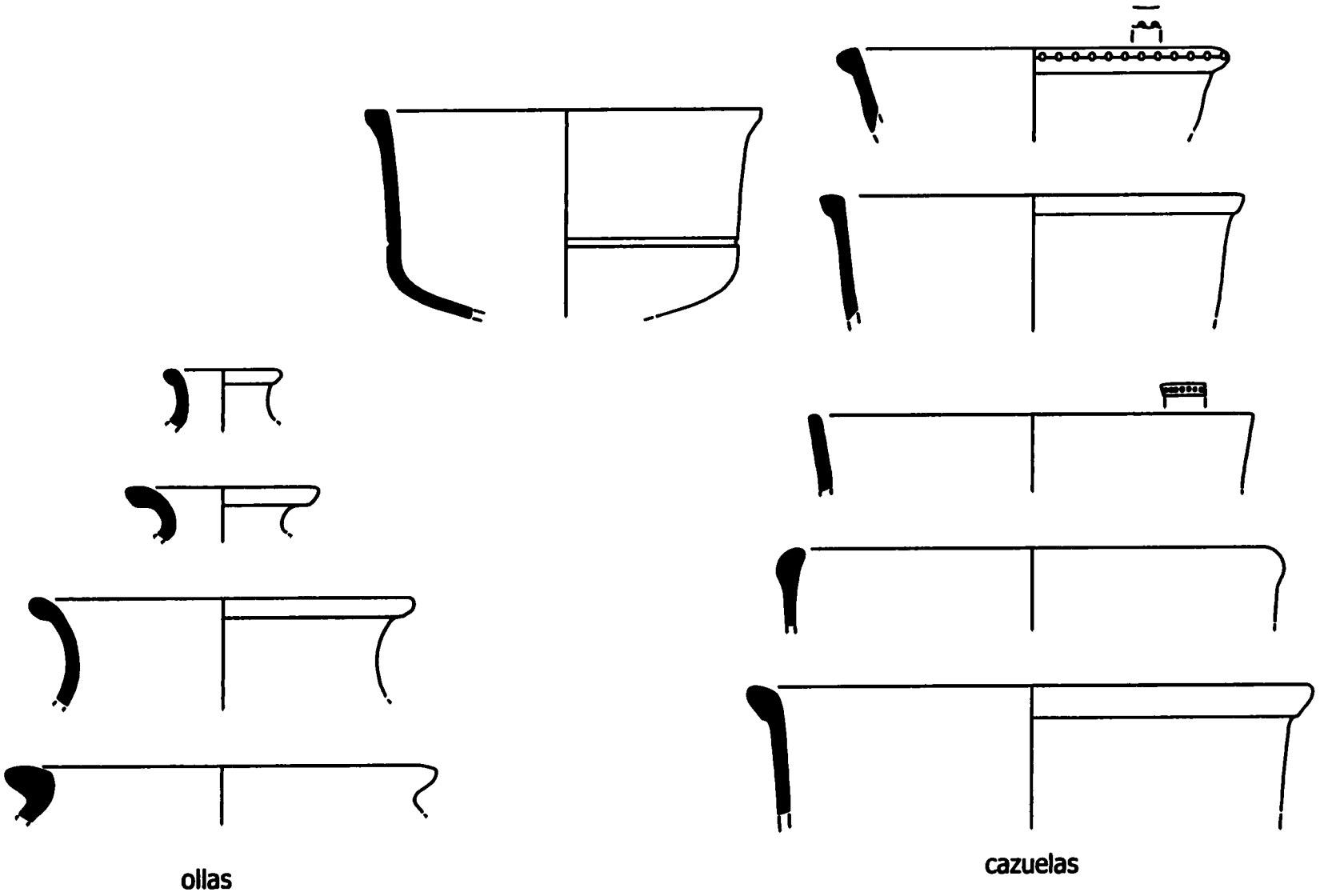


Figure 7.25 Typical Rivas Red: Variety Unspecified vessel forms (20% of original size)

RIVAS RED: RIVAS

Rim sherds per shovel test (n=232)

	E0	E10	E20	E30	E40	E50	E60	E70	E80	E90	E100	E110	E120
N40	2	3	5	1	2	2		3	1	2			
N30	8	15	4	2	8	3	1	1		1			1
N20	6	4	4	19	5	2	1	6		1		2	1
N10	4	13	10	5	9	8	1	11			1	1	1
N0	2	5	2	8	3	2	18	3	2	2	3	1	1

Percentage of sherds per shovel test

	E0	E10	E20	E30	E40	E50	E60	E70	E80	E90	E100	E110	E120
N40	1%	1%	2%	0%	1%	1%		1%	0%	1%			
N30	3%		2%	1%	3%	1%	0%	0%		0%			0%
N20	3%	2%	2%		2%	1%	0%	3%		0%		1%	0%
N10	2%		4%	2%	4%	3%	0%				0%	0%	0%
N0	1%	2%	1%	3%	1%	1%		1%	1%	1%	1%	0%	0%

RIVAS RED: VARIETY UNSPECIFIED

Rim sherds per shovel test (n=38)

	E0	E10	E20	E30	E40	E50	E60	E70	E80	E90	E100	E110	E120
N40	1												
N30	6	1						1					
N20		4	1	3	1								
N10	1	4		1	3	1							
N0		2	2	1	3	1	1						

Percentage of sherds per shovel test

	E0	E10	E20	E30	E40	E50	E60	E70	E80	E90	E100	E110	E120
N40	3%												
N30		3%						3%					
N20			3%		3%								
N10	3%			3%		3%							
N0				3%		3%	3%						

SACASA STRIATED

Rim sherds per shovel test (n=32)

	E0	E10	E20	E30	E40	E50	E60	E70	E80	E90	E100	E110	E120
N40						1							
N30	3	1											
N20		4	1	2	1	1							
N10		3	1	1	1			2					
N0		1		2				7					

Percentage of sherds per shovel test

	E0	E10	E20	E30	E40	E50	E60	E70	E80	E90	E100	E110	E120
N40						3%							
N30	3%												
N20		3%		3%		3%							
N10		3%		3%	3%								
N0	3%				3%								

5-9% 10% and greater 20% and greater

Figure 7.26 Distribution of utilitarian vessel types in shovel tests

Table 7.7 Relative frequencies of forms per utilitarian vessel type

	bent rim	straight/ wedge rim	tapered rim	tecomates	broad rim cazuelas	total sherds in sample
Rivas Red: Rivas	39%	12%	44%	1%	4%	590
Rivas Red: Var. Unsp.	42%	11%	25%	0%	21%	146
Sacasa Striated	74%	6%	0%	0%	20%	122

Most of the rim forms identified for the Rivas varieties were identifiable with forms presented in Healy (1980:207-8, Figures 92 and 93), with the notable exception of the broad-rimmed cazuela. In turn, several forms mentioned by Healy were not found at Santa Isabel, but this is likely explained by the fact that his forms are derived from the entire chronological sequence, while ours are more temporally limited. As well, several of the forms classified by Healy as Rivas Red likely pertain to vessels classified in this study as Ricardo Red, as previously noted. Rivas Red: Variety Unspecified may also overlap somewhat with a serving-ceremonial vessel type or types, specifically the Castillo-Lago-Unspecified Black ceramics. We have already noted that several tapered-rim Rivas Red: Variety Unspecified vessels may have been Unspecified Black bottles and were found in contexts in unit N20E30 that associated them with Unspecified Black and Castillo material, and more than half of the Rivas "Black" broad-rimmed cazuelas (17 of 31) were recovered from this same context. The pronounced rims on some Unspecified Black hemispherical bowls are more typical of utilitarian vessels than serving-ceremonial vessels.

Sacasa Striated represents a second major utilitarian vessel type that occurred in much smaller quantities than the Rivas varieties and in rather different frequencies in terms of vessel forms (Figure 7.27). Sacasa Striated is characterised by brushed or striated exteriors (and is therefore easily identifiable); only the rim and the interiors of the vessel are slipped with a red slip. The major distinction between Sacasa and Rivas in terms of choices of forms is that Sacasa completely lacks tapered-rim ollas and cazuelas as categories. As a result, other forms are correspondingly more prevalent within this type than they are in the Rivas varieties: bent-rim forms are almost twice as common (74% vs. 40% for both Rivas varieties combined) and broad-rimmed cazuelas are even more commonplace (20% vs. 8% for

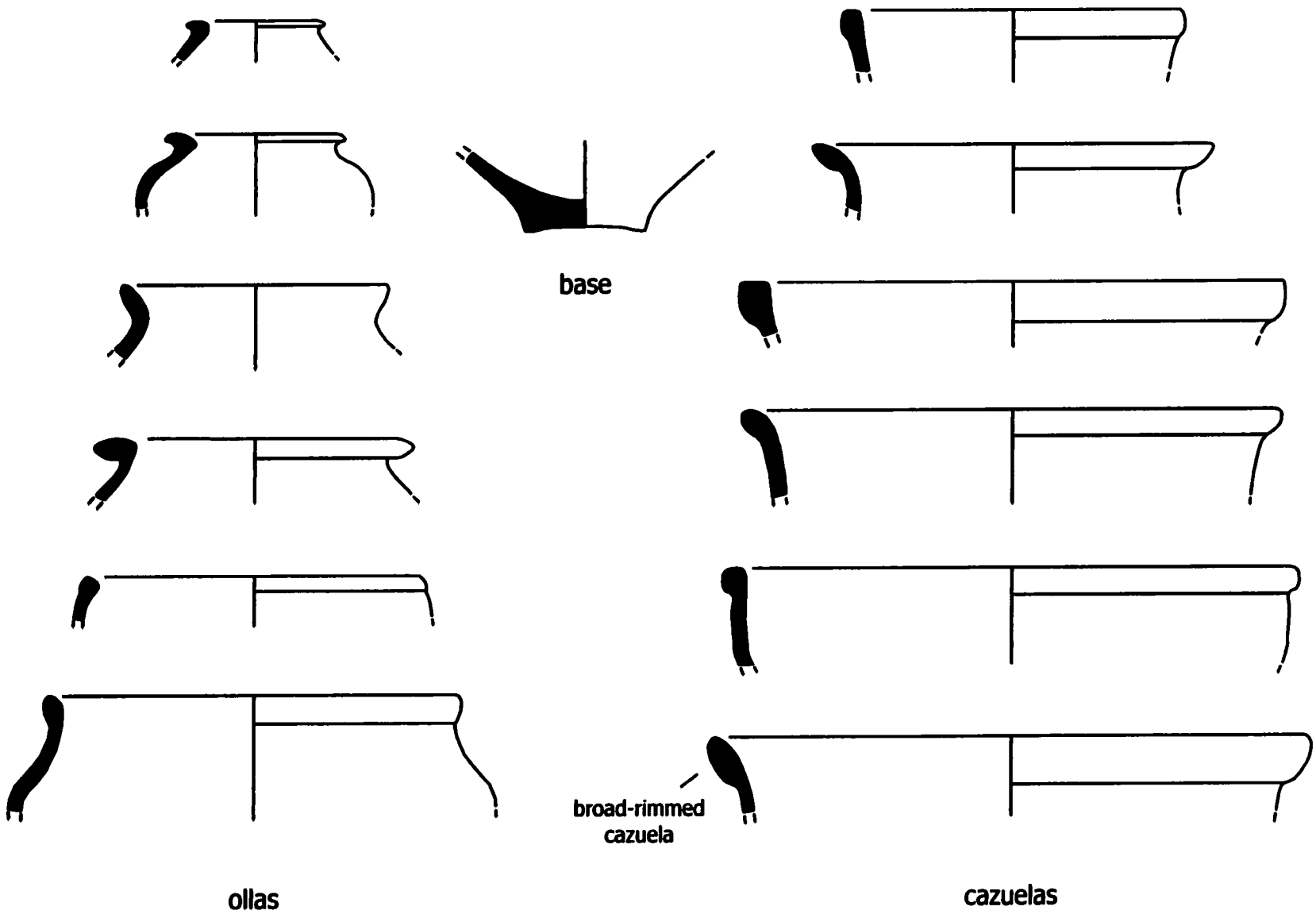


Figure 7.27 Typical Sacasa Striated vessel forms (20% of original size)

combined Rivas varieties). Healy observes that the most typical forms are "outflaring and outcurving-rim jars" (1980:216) which appear to be identical to vessels subsumed in our bent-rim category. Healy also notes the presence of a category analogous to our broad-rimmed cazuela category (adding that these vessels tend to be shallow, no more than 8 or 9 cms), and observes that the rims tended to be "squared" (1980:216). This same observation was made independently in the field, although it is not well reflected in Figure 7.27. Other typical Sacasa Striated forms such as tecomates and shoe-shaped urns–often used for burials, though not necessarily created for this purpose (Healy 1980:216)–were not identified in our collection but may have been subsumed in the various rim shape classes, especially the "square or wedge-rim" class, which included a number of sherds that appeared to belong to vessels with unusual body shapes.

Despite the different frequencies of vessels between Sacasa Striated and the Rivas type, the spatial and chronological patterning of the two types was not especially dissimilar. Shovel test data suggested that the distribution of Sacasa on the mound was similar to that of Rivas Red: Variety Unspecified (Figure 7.26), and the stratigraphic analysis revealed a continuous Sacasa presence through the sequence, though always in much smaller numbers than the Rivas type. These small numbers, in fact, were rather surprising, based on Healy's comment that Sacasa Striated marked a 'break with earlier traditions" and was "the most common (and important) utilitarian ware" from the beginning of the Sapoá Period to the Conquest (1980:219). Yet while Healy reports that Sacasa in some contexts provided upwards of 50 per cent of the material in an excavated level (1980:218), these contexts appear to have been limited to sites on Ometepe Island. At Santa Isabel "A" the percentages found by Willey and Norweb were more typically under 20 per cent–roughly similar to the frequency of Rivas Red: Rivas, which was curiously even less common (Healy 1980:54, Table 9). In our own excavations, percentages of Sacasa Striated over 10 per cent in any given level were rare. Based on our own data, therefore, Sacasa Striated can hardly be considered to be a more important "utilitarian" type than the Rivas varieties–at least, not at this particular site.

FORMAL VARIATION

Having documented the various ceramic types in the Santa Isabel collection, the "traditional" next step would be to attempt to identify each of these types with a specific ethnic group–more specifically, with one of the various Mexican groups that Nicaraguan ethnohistory tells us migrated to Nicaragua centuries before the arrival of the first European migrants documented in our own ethnohistory. To do this, however, is to assume that the distinctions between the types, which as we have seen are based largely on decorative variation, are "real" in the sense that they were recognised as discrete (and therefore potentially meaningful) entities by the people who created and/or used these ceramics. A comparison of decorative variation with formal variation may help to clarify whether or not this was the case. While different types do not necessarily *need* to be manufactured by potters following different potting traditions–that is, by potters with different habitus–evidence that they are will of course support the distinction between these types, and increase the likelihood that they may have been ethnically salient. Evidence that types that appear later in the chronological sequence, such as the various Ometepe types, are the products of a different pottery tradition(s) would also support the association of these types with incoming migrant groups. Similarly, while evidence that different types *are* made by potters in the same tradition will not necessarily invalidate the distinctions between types made by archaeologists or negate the possibility that they were used as markers, it will at very least cast doubt on this approach while also suggesting possible affiliations between types that have been overlooked by researchers focussing on other factors, such as contemporaneity or decorative similarities.

Orifice Diameters and Wall Thickness

The influence of habitus makes it reasonable to expect that similar vessels produced by different potting traditions might betray systematic (if subtle) variations in formal aspects such as orifice diameter and wall thickness, and that if different types based on decoration are indeed the product of different traditions, then these formal variations should be identifiable within these types. While both of these aspects of form are of course partially

determined by functional concerns–orifice diameters being partially dictated by the primary economic use of the vessel, and wall thickness often representing a compromise between the physical properties of the material and desired mechanical properties such as weight, durability and thermal conductivity (Orton et al. 1993:220-22; Rice 1987:227; Smith 1985:273, 281)–different groups are likely to have their own ideas about such matters as the best size for a water jug's mouth or the relative merits of lightweight vs. durable serving dishes. As already noted, these ideas are likely to be inculcated in potters at a young age, and might therefore be expected to subtly influence their handiwork even if, as adults, they are faced with a challenge such as imitating a ceramic form produced by another potting tradition.

Serving-Ceremonial Vessels. While data on orifice diameter and wall thickness was collected for almost the entire range of serving-ceremonial vessel types described previously, only a selected assortment of types were included in the analysis. Most types that were excluded were particularly small samples (i.e., less than a dozen sherds). The exception was Unspecified Buff, which was excluded not because of sample size but because I felt that the unusual and cup-sized bowls typical of this type were not directly comparable to the vessel forms found in the other types. On the other hand, four types with available samples smaller than the Unspecified Buff sample–Pataky Polychrome, Granada Polychrome, Castillo Engraved and Bramadero Polychrome–were included in the analysis because they were well-known types that could be grouped with other types according to the NAA compositional groups identified by the Greater Nicoya Ceramic Project (Bishop et al. 1988) (Table 7.8).

The decision to analyse serving-ceremonial vessel types by NAA *compositional group*–a conceptual entity not to be confused with *ceramic group* as defined according to the Type-Variety system, which (as previously noted) refers to a group of ceramics with similar decorative treatments (Gifford 1976:17)–was made primarily to address the problems created by small sample sizes and the lack of some vessel forms within some types. Grouping Pataky with Papagayo, for example, creates an analytical "mega-type" that includes jarras/jarrones, which are lacking in the Papagayo type. Of course, the use of compositional groups is based on the untested hypothesis that the ceramics of Santa Isabel, which have *not* been subjected

to NAA analysis, probably would fall into the same compositional groups identified by the Greater Nicoya Ceramic Project. However, it is reasonable to make this assumption, since as noted above, the Ceramic Project consistently found that types tended to be homogenous in terms of their compositional origins, no matter where the sample sherds were found. Furthermore, the Santa Isabel types that group together in terms of composition tend to be types that have a certain "familial" resemblance anyway and might therefore have been grouped together for study on that basis.[13] The combination of these two factors therefore suggests that a comparison of compositional groups is an appropriate way in which to approach our ceramic sample.

Table 7.8 Compositional groups represented in Santa Isabel serving-ceremonial vessels (based on Bishop et al. 1988:22, Table 2.2)

	GN11	GN12	GN15	GN22	GN23	GN24
Papagayo Polychrome	X					
Pataky Polychrome	X					
Vallejo Polychrome	O		X			
Castillo Engraved		X				
Granada Polychrome				O	X	O
Madeira Polychrome	O			O	X	
Luna Polychrome				X	O	
Bramadero Polychrome				O	X	

X = Most common compositional group for this type in the sample. O = Other compositional groups for this type.

Data from seven types was combined to create four compositional groups (Table 7.9). Papagayo was grouped with Pataky to form the first group (Papagayo-Pataky) while Madeira was grouped with Granada and Bramadero to form a second (Madeira-related). Vallejo and Castillo Engraved were examined as separate groups, and the two major new types identified at Santa Isabel, Unspecified Black and Ricardo Red, were also examined separately, producing a total of six groups for examination. A summary of the comparison of radii and wall thickness for various vessel forms from these six groups is presented in Table 7.10.

[13]It should be noted that my own perception of "familial" resemblances between types does not match Healy's, since his ceramic groups bring together types in a fashion that is dramatically different from my own interpretation. For example, Healy places Casares (now considered to be a variety of Papagayo) and Pataky Polychrome in his Madeira ceramic group, leaving Papagayo in a separate ceramic group by itself (1980:83).

Table 7.9 Serving-ceremonial vessel forms in analysed types (identifiable sample only)

	Hemi	Super	Comp	Jarra	Bottle	Plate	
Papagayo-Pataky	85	40	145	2	—	—	272
Vallejo	10	6	21	20	—	—	57
Castillo Engraved							21
Madeira-related*	49	4	44	—	—	—	97
Unspecified Black	11	—	—	10	24	—	45
Ricardo Red	27	8	32	1	9	3	80
TOTAL SAMPLE							572

*No sherds from Granada composite silhouette bowls were available for analysis.

Table 7.10 Average radius and thickness of vessels according to compositional groups

	BOWLS								JARRAS/JARRONES			
	Hemispherical		Super-hemispherical		Composite Silhouette		All Bowls Combined		Jarras		Bottle-Jars	
	rad. (cm)	thk. (mm)	rad. (cm)	thk. (mm)	rad. (cm)	thk. (mm)	rad. (cm)	thk. (mm)	rad. (cm)	thk. (mm)	rad. (cm)	thk. (mm)
Papagayo-Pataky Group (n=272)												
Average	9	6	8	6	9	7	9	7	5	6	—	—
Range	4 - 17	4 - 10	3 - 12	4 - 9	3 - 15	4 - 10	3 - 17	4 - 10	5	5 - 6	—	—
Vallejo (n=57)												
Average	9	6	7	6	10	7	10	7	8	6	—	—
Range	6 - 13	5 - 9	3 - 13	5 - 7	5 - 14	5 - 9	3 - 14	5 - 9	5 - 13	5 - 8	—	—
Madeira-related Group (n=97)												
Average	10	5	9	7	9	5	9	5	—	—	—	—
Range	4 - 17	3 - 8	7 - 10	5 - 7	4 - 14	4 - 9	4 - 17	3 - 9	—	—	—	—
Castillo Engraved (n=21)												
Average	5	6	?	5	9	7	8	6	12	6	—	—
Range	4 - 6	5 - 6	?	5	7 - 11	6 - 8	4 - 11	5 - 8	6 - 19	5 - 7	—	—
Unspecified Black (n=45)												
Average	8	7	—	—	—	—	8	7	8	7	5	7
Range	6 - 12	6 - 8	—	—	—	—	6 - 12	6 - 8	5 - 13	6 - 8	1.5-9	5 - 9
Ricardo Red (n=80)												
Average	10	7	10	10	8	7	9	7	13	5	5	7
Range	5 - 17	4 - 11	6 - 13	6 - 10	3 - 14	5 - 8	3 - 17	4 - 11	13	5	4 - 9	5 - 9
ENTIRE SAMPLE												
Average	9	6	8	6	9	7	9	7	9	6	5	7

? = unmeasurable

One of the most striking things about the diameters and wall thicknesses indicated in Table 7.10 is that, despite the impressively wide range of *potential* vessel sizes found among all forms in all types or compositional groups in the Santa Isabel assemblage, *average* sizes still turn out to be relatively uniform across all of the various groups. For example, the average radius for hemispherical bowls across the various groups (excepting Castillo Engraved, for which the average is based on a small sample of only two vessels) varies within a range of only 2 cm (4 cm in terms of diameter). Looking at the average sizes for all bowl forms combined for the different compositional groups, the similarities in diameter are even more pronounced: the average radius of all bowls in the entire sample is 9 cm, and the average radius of bowls within each group is either equal to this or only 1cm greater or smaller. An implication of this is that while bowls at Santa Isabel might have varied tremendously in decoration, no particular decorated type appears to have been preferred for a specific size of bowl; that is, there is no strong evidence that Papagayo, for example, was preferred for tiny bowls that might have been used to contain a sauce, while Vallejo was preferred for single serving vessels and Madeira for large serving platters. In other words, if a vessel form is present within a compositional group, it is generally present across the entire gamut of sizes typical of that specific form.

A comparison of the average radius and thickness of different bowl shapes (excluding jarra/jarrón forms because they are generally absent as vessel classes in most types) within given compositional groups against the averages of these shapes based on the entire sample reveals some interesting patterns. By "scoring" compositional groups based on the total number of centimetres of divergence from the average radius for all groups and the total number of millimetres of divergence from the average thickness for all groups, it is possible to illustrate relative degrees of divergence for given groups from the "norm" established by the averages taken from the entire sample.[14] Table 7.11 provides an example:

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[14]To the best of my knowledge, this simple method of "divergence scoring" that I have developed and applied here is a unique approach that has not been previously used in any other ceramic analysis. While it proved useful for my purposes, I suspect it would become unwieldy if more than two variables were compared.

Table 7.11 Calculating divergence score

	hemispherical	super-hemispherical	composite silhouette	divergence score
Avg. radius of all bowls	9	8	9	
Avg. radius of Madeira-related compositional group bowls	10	9	9	
cm of divergence from average	1	1	0	2

Calculating the Madeira-related compositional group's divergence in wall thickness by the same method (average all vessels: 7, 8, 7; Madeira averages: 5, 7, 7) produces a divergence score of 4. Divergence scores for the various compositional groups are summarised in Table 7.12 below (Unspecified Black is not included because it lacks superhemispherical and composite silhouette bowl categories and therefore could not be properly scored).

Table 7.12 Divergence scores for serving-ceremonial vessel compositional groups

Compositional Group (bowls only)	Divergence Score: radius (cm)/thickness (mm)
Papagayo-Pataky (n=270)	0/0
Vallejo (n=37)	2/0
Madeira-related (n=97)	2/4
Ricardo Red (n=67)	4/3
Castillo Engraved (n=7)	– /1*

*A radius score for Castillo could not be calculated because the sample in one form category was unmeasurable.

It is not particularly surprising that the divergence score for the Papagayo-Pataky group is 0/0, considering that this group constitutes almost half of the entire sample and is therefore likely to skew the average in its favour, but this is not a problem if we think of Papagayo-Pataky as establishing the norm for Santa Isabel ceramics. Since this is the most ubiquitous serving-ceremonial vessel category, it makes sense to take a particular interest in how the other compositional groups measure up to its standard. As Table 7.12 indicates, Vallejo, a type which as we have already noted is very similar in many respects to Papagayo, diverges from the average–and therefore, from the Papagayo-Pataky norm–only in terms of diameter; wall thickness does not show any divergence. The Madeira-related group, on the other hand, not

only diverges as much from the norm as Vallejo in terms of radius but also very dramatically in terms of wall thickness. The average thicknesses of Madeira-related group hemispherical and composite silhouette bowls–the most common forms within the group–were both less than the average, and this is in keeping with the aforementioned field observations regarding Granada Polychrome in particular. Yet while the Madeira-related group divergence was somewhat expected, the divergence of Ricardo Red was not, and seemingly contradicts our previous identification of this group with Papagayo. Unfortunately, the relative lack of data on Castillo Engraved (the entire bowl sample contained only seven bowls, and the diameter of the single superhemispherical bowl could not be measured) limits our ability to say anything meaningful about this class.

Confining our examination only to the average measurements for all bowl forms combined provides another perspective. Here, the expected similarities between the Papagayo-Pataky and Ricardo Red groups do seem to be apparent, as these are the only two groups in the sample that feature the same average radius and wall thickness. The ranges of possible radii and thickness are also closer than in any other groups, with the radius ranges in particular being identical (3 to 17 cms). The Madeira-related group bowls appear to conform to the norm in terms of overall vessel size (being the same as Papagayo-Pataky bowls in this respect), but the average wall thickness is 2 mm less than the norm, the greatest deviation within any group. While 2 mm of difference may seem trivial, it should be kept in mind that this would suggest that Madeira-related vessels were almost 30 per cent thinner than most of the other bowls found at Santa Isabel, producing a difference that can be distinguished even by touch. It is also worth noting that this compositional group produced the thinnest measured wall thickness in the assemblage: 3 mm, thinner than the rim of a modern coffee mug. Finally, it should be noted that the Castillo Engraved and Unspecified Black, two other types that I have suggested may be related, demonstrate some similarity inasmuch as they are the only two bowls with average diameters below the norm. The maximum measured thickness for both types is also lower than for any of the other compositional groups.

The more significant sample sizes of the Papagayo-Pataky, Vallejo, Madeira-related and Ricardo Red compositional groups makes it possible to refine our comparison of these categories and focus exclusively on vessels with common diameters, since it can be assumed that wall thickness will vary somewhat according to vessel size. A comparison of vessels with relatively common diameters should allow us to gauge differences in wall thickness between vessels more accurately. Since the average radius of all bowls in the entire sample was 9 cm, vessels with radii of 8-10 cm were compared (Table 7.13).

Table 7.13 Average wall thickness (mm) in compositional groups/types (bowls with 8-10 cm radius)

	hemi	super	comp	all bowls
Papagayo-Pataky Group (n=118)	6	6	8	7
Range	4 to 10	5 to 8	5 to 11	4 to 11
Vallejo (n=15)	7	5	7	7
Range	5 to 9	5	5 to 9	5 to 9
Madeira-related Group (n=34)	5	7	6	6
Range	4 to 8	7	4 to 9	4 to 9
Ricardo Red (n=22)	8	6	7	7
Range	7 to 9	6	5 to 8	5 to 9
Average, This Sample	6	6	7	7
Average of Averages	7	6	7	7

The results of this more specific comparison between vessels of similar dimensions were more in keeping with previous expectations about the relatedness of Papagayo to Ricardo Red as well as to Vallejo and the difference of these types with the types in the generally thinner-walled Madeira-related group. Using the divergence score approach to compare the individual compositional groups with each other produced an interesting, if weak, pattern: comparisons of the Papagayo-Pataky, Ricardo Red and Vallejo compositional groups with each other always produced a lower divergence score than the comparison of any of these groups with the Madeira-related compositional group (Table 7.14).

Table 7.14 Divergence score of compositional groups vs. compositional groups (8-10 cm radius bowls)

Papagayo-Pataky Group vs. Vallejo	3
Papagayo-Pataky Group vs. Madeira-related Group	4
Papagayo-Pataky Group vs. Ricardo Red	3
Vallejo vs. Madeira-related Group	5
Vallejo vs. Ricardo Red	2
Madeira-related Group vs. Ricardo Red	5

Comparing compositional groups against average thicknesses derived from the entire sample, the Madeira-related group again diverged the most (Table 7.15).

Table 7.15 Relative divergence of average compositional group wall thickness from entire sample (8-10 cm radius bowls)

Compositional Group	Divergence Score: Thickness	
	Vs. averages based on entire sample	Vs. averages of averages for each compositional group
Papagayo-Pataky (n=118)	1	2
Vallejo (n=15)	2	1
Madeira-related (n=34)	3	4
Ricardo Red (n=22)	2	1

And as Table 7.15 also illustrates, when compositional groups were compared against averages of average thickness taken from each group in order to compensate for the skewing factor introduced by the Papagayo-Pataky group, the divergence of bowls in the Madeira-related group became even more pronounced. Again, this divergence is generally caused by the thinner nature of Madeira pottery, although curiously vessels in the superhemispherical bowl category (a small sample of four almost all derived from the unspecified variety) were thicker than superhemispherical bowls in the other groups. Comparing the average thicknesses of all bowl forms combined also illustrates the similarities between all of the compositional groups in comparison to the Madeira-related group: once again, pottery from the latter group is, on average, thinner than pottery from the other three groups.

Summing up, this comparison of serving-ceremonial vessel orifice sizes and wall thickness suggests that the different serving-ceremonial vessel types found at Santa Isabel are much more likely to be distinguished by differences in wall thickness than they are by apparent preferences for certain sizes of pots. The relative consistency of average orifice dimensions of various bowl shapes across the various types seems to suggest that if potters from different potting traditions were producing the ceramics consumed by the residents of Santa Isabel, then they shared a common ideal regarding the appropriate size for their pots–or alternatively, that the actual consumers of the pottery had a well defined idea of what they wanted, and tended to obtain pottery that conformed to that expectation.

On the other hand, the makers of the Santa Isabel ceramics seem to have been of (at least) two minds with regard to wall thickness. The consistently thinner walls of Madeira-related material in particular sets it apart from the other sampled material and suggests that it may be the product of a different pottery tradition guided by a different ideal of how thick a pot should be–in other words, by a different habitus. In this case, then, this aspect of formal variation does correlate in a very broad way with decorative variation inasmuch as some of the serving-ceremonial vessel types with more dramatic decorative differences (such as Madeira and Papagayo) also displayed formal differences. However, the comparison of wall thickness also provided evidence of potential relationships between types like Papagayo, Vallejo and Ricardo Red that might be otherwise ignored in a study that focusses too finely on individual decoration (since Vallejo is typically considered more "Mexican" than Papagayo and Ricardo Red is not decorated at all). This suggests that a focus on formal variation has the potential to provide a very different holistic perspective on the entire ceramic assemblage of a site.

Utilitarian Vessels. Data on orifice diameter and wall thickness was collected for all three of the previously described categories of utilitarian vessel ceramics–i.e., Rivas Red: Rivas, Rivas Red: Variety Unspecified and Sacasa Striated (Table 7.16).

Table 7.16 Utilitarian vessel forms in analysed types (identifiable sample only)

	OLLAS/CAZUELAS												TECO.		CAZ.	
	Bent				Straight/Wedge				Tapered				Tecomate		Broad-rimmed	
	Res.		Unres.		Res.		Unres.		Res.		Unres.		Res.		Unres.	
	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T
Rivas Red: Rivas (n=64)																
Average	7	8	9	10	8	8	10	10	8	12	14	11	20	10	18	10
Range	3-11	6-12	5-11	7-14	4-13	7-9	6-16	7-14	7-9	10-13	10-25	7-20	16-23	9-11	9-24	5-14
Rivas Red: Variety Unspecified (n=49)																
Average	7	9	9	8	4	7	10	9	8	8	12	8	—	—	16	10
Range	4-14	6-12	9	8	4-18	5-10	5-18	6-10	5-17	6-10	5-15	7-10	—	—	13-24	8-11
Sacasa Striated (n=44)																
Average	8	8	7	8	n/a	9	13	9	–	–	–	–	–	–	16	9
Range	3-14	6-10	6-8	6-11	n/a	9	9-18	6-11	–	–	–	–	–	–	7-23	5-12
Avg sample	7	8	8	8	6	8	11	9	8	10	14	10	20	10	17	9
Avg of Avgs	7	8	8	8	6	8	11	9	8	10	13	10	20	10	17	10

R=radius T=Thickness n/a=no measurement available

Unfortunately, while the sample of approximately 50 sherds from each type (which in practice amounted to total samples of 64, 49 and 44 sherds, respectively, owing primarily to later regrouping of some red and black-slipped material between the serving-ceremonial and utilitarian vessels) originally seemed adequate to study four classes based on rim shapes (i.e., bent, straight/wedge, tapered and broad-rimmed cazuelas; tecomates were originally grouped under Ricardo Red), especially when an effort was made to collect at least 10 samples from each form, it proved to be often meagre when the subdivision of the first three of these classes into restricted and unrestricted forms created a total of seven categories (Table 7.17). As a result, of the 19 samples representing specific forms of specific types (Sacasa Striated lacking tapered-rim categories), 10 of these included less than five sherds, and two included only single sherds. Nevertheless, while it would therefore be foolish to make claims about the "average" diameter and wall thickness of some rim-shape classes in some types (for example,

the single straight/wedge-rimmed Sacasa Striated sherd in the "restricted orifice" category could not even be used to provide an orifice size estimate), certain patterns are visible in categories with larger samples.

Table 7.17 Sample sizes for utilitarian vessel forms

	bent		straight/ wedge		tapered		teco.	brd.	total
	R	U	R	U	R	U	R	U	
Rivas Red: Rivas	16	4	3	7	3	17	4	10	64
Rivas Red: Var. Unspecified	14	1	3	7	4	5	—	15	49
Sacasa Striated	15	5	1	5	—	—	—	18	44

R= Restricted orifice U=Unrestricted orifice

Specific Rivas Red: Rivas and Rivas Red: Variety Unspecified forms, not surprisingly, were often characterised by the same average diameter: Rivas bent-rim ollas had smaller mouths (radius=7 cm) than Sacasa Striated forms (radius=8 cm), while Rivas bent-rim cazuelas were larger (radius=9 cm) than their Sacasa Striated counterparts (radius=7 cm). Straight or wedge-rimmed cazuelas were smaller among the Rivas varieties (radius=10 cm) than among Sacasa Striated (radius=13 cm). A noteworthy divergence between the Rivas varieties was in the broad-rimmed cazuela category: Rivas Red: Variety Unspecified cazuelas shared the same average diameter as Sacasa Striated examples of this form (radius=16 cm), while Rivas Red: Rivas cazuelas were larger (radius=18 cm). This is potentially interesting considering that this form is of approximately equal prominence within the total Rivas Red: Variety Unspecified and Sacasa Striated assemblage (constituting 21% of the former and 20% of the later) while rare in the Rivas Red: Rivas assemblage, where it constitutes only four per cent of the assemblage.

Grouping the data into ollas and cazuelas (Table 7.18; tecomates were excluded since the form is unique to Rivas Red: Rivas and features unusually large orifices that skew the average diameter for the variety) revealed that Sacasa Striated vessels as a group featured larger average orifices than the Rivas varieties. Only Rivas Red: Rivas cazuelas provided equally

large average orifices. Within the Rivas type, the average size of Rivas Red: Variety Unspecified orifices was never larger than in Rivas Red: Rivas.

Table 7.18 Summary of average radius and wall thickness for restricted vs. unrestricted orifice vessels

	OLLAS		CAZUELAS		ALL VESSELS	
	radius (cm)	thickness (mm)	radius (cm)	thickness (mm)	radius (cm)	thickness (mm)
Rivas Red: Rivas	7	9	14	10	11	10
Rivas Red: Var. Unsp.	7	8	13	9	10	9
Sacasa Striated	8	8	14	9	12	9

A comparison of the average thicknesses presented in Table 7.16 reveals no clear distinctions between Rivas varieties and Sacasa Striated analogous to those observed in the serving-ceremonial vessel categories. There was usually never more than a 2 mm difference in the average thickness of specific vessel shapes within any variety, and the two Rivas varieties were as likely to differ from each other as they were from Sacasa Striated. The Rivas varieties are especially distinct in the tapered-rim category (lacking in Sacasa), where Rivas Red: Rivas rims tended to be 3-4 mm thicker than Rivas Red: Variety Unspecified rims. The combined data presented in Table 7.18 is a bit more intriguing, in that it suggests that Rivas Red: Rivas tends to be thicker than both Rivas Red: Variety Unspecified and Sacasa Striated, which in fact produce identical averages all across the board. However, Rivas Red: Variety Unspecified may actually be somewhat thicker than the figures suggest. While the wide range of wall thicknesses demonstrated by Rivas Red: Variety Unspecified produces similar average thicknesses to Sacasa Striated, it seems likely that some of the smaller and thinner Rivas Red: Variety Unspecified pots included in the sample ought to have been rather included in the Unspecified Black type (as previously noted), and their presence here likely skews the average thickness for the variety lower than it should be.

While the differences in *average* thickness between Rivas and Sacasa may not seem especially noteworthy, they are underlined by the differences in the *range* of thicknesses for the types. Rivas Red: Rivas vessels appear to have been available in a number of "plus" sizes,

most markedly in the cazuela class. Approximately 16 per cent of the entire Rivas Red: Rivas sample featured walls between 13-mm and 20 mm thick–thicker than the thickest Sacasa Striated or Rivas Red: Variety Unspecified vessels (Table 7.19).

Table 7.19 Range of wall thicknesses, utilitarian vessels

	Ollas (mm)	Cazuelas (mm)	All Vessels (mm)
Rivas Red: Rivas	6-13	5-20	5-20
Rivas Red: Var. Unspecified	5-12	6-11	5-12
Sacasa Striated	6-10	5-12	5-12

Divergence scoring produces mixed results, based on whether or not types are scored against averages measurements taken only from rim-shape classes present in all types and varieties (therefore excluding the tapered-rim category, since it is absent in Sacasa Striated) or against average measurements taken from ollas and cazuelas (Table 7.20). The scores based on rim-shape classes reflect a similarity between the Rivas varieties as opposed to Sacasa Striated. Rivas Red: Rivas and Rivas Red: Variety Unspecified are similar in their degree of divergence from the average radius and thickness based on the entire sample, while Sacasa Striated diverges more in terms of radius and less in terms of thickness. On the other hand, the comparison of the average measurements for ollas and cazuelas within the individual types against the average measurements taken from the entire sample suggest a greater similarity between Rivas Red: Variety Unspecified and Sacasa Striated.

Table 7.20 Divergence scores for utilitarian vessel types vs. averages based on entire sample

	Score based on averages from rim classes common to all types* radius (cm)/thickness (mm)	Score based on averages of ollas vs. cazuelas radius (cm)/thickness (mm)
Rivas Red: Rivas	3/4	0/1
Rivas Red: Var. Unspecified	3/3	1/1
Sacasa Striated	5/1	1/1

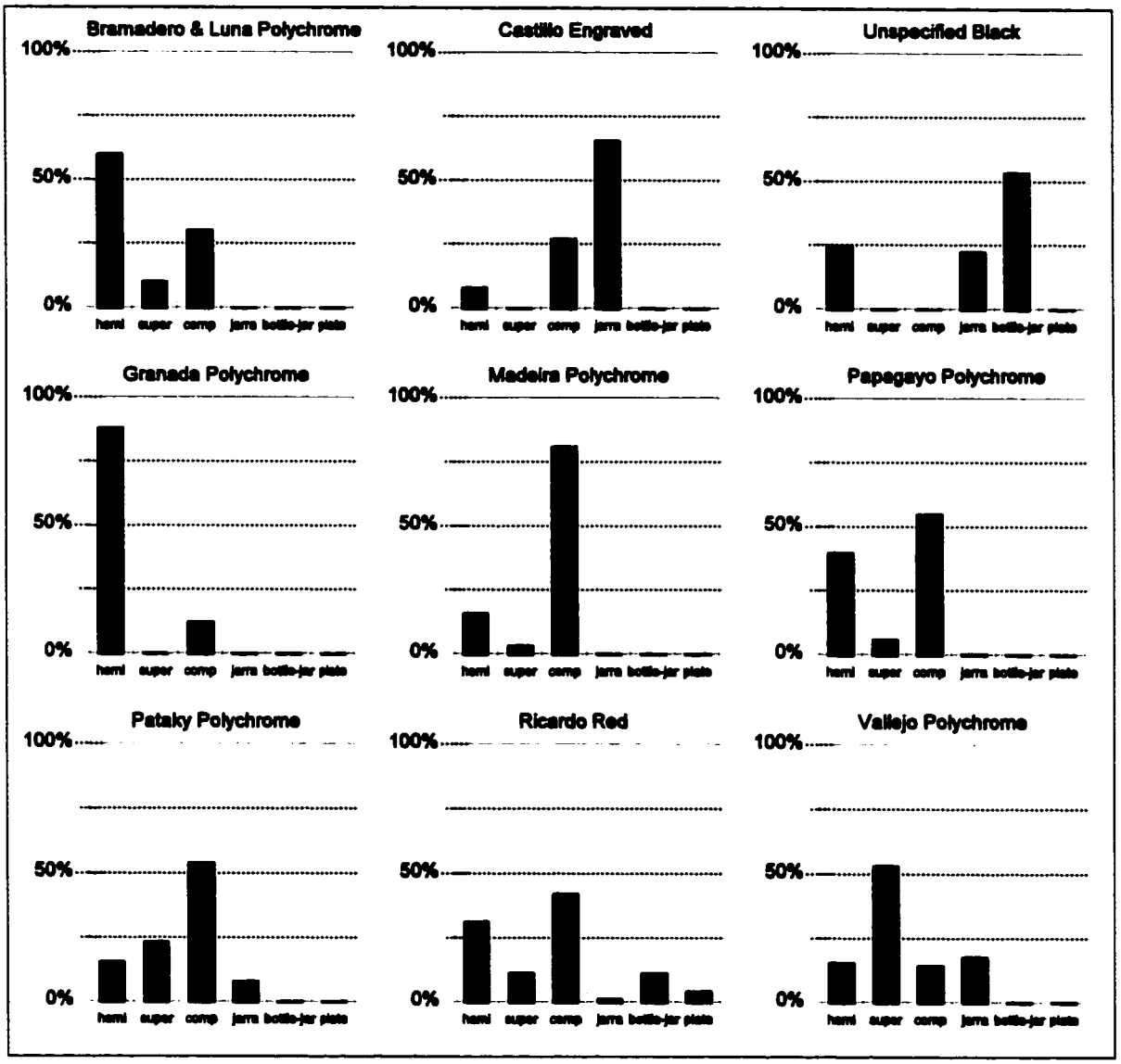
*Bent, straight/wedge & broad-rimmed cazuela rim classes.

In sum, the utilitarian vessels of Santa Isabel do not appear to be clearly distinguishable on the basis of orifice sizes or wall thickness. While the average diameter of all Sacasa Striated pottery is higher than the Rivas varieties, Rivas Red: Rivas averages are higher for more classes of vessels. Rivas Red: Rivas is typically thicker than Sacasa Striated, while Rivas Red: Variety Unspecified is typically similar to Sacasa Striated in thickness. Larger sample sizes might help to clarify the picture. However, given the small sample size, I do not feel there is sufficient data to argue that the utilitarian vessels of Santa Isabel were produced by members of more than one potting tradition.

Vessel Shape Preferences

Habitus not only "shapes" pots, it shapes preferences for specific pot shapes. It is therefore reasonable to assume that if various ceramic types are the product of a common ceramic tradition that this might be reflected in the frequencies of specific vessel forms within these types.

Serving-Ceremonial Vessels. Figure 7.28, which is based on data drawn from the entire collection of serving-ceremonial vessel rim sherds recovered from Santa Isabel, illustrates the relative frequencies of vessel forms for the major serving-ceremonial vessel types discussed above. (The few recovered sherds of Luna Polychrome excavated in 2000, which are grouped in this comparison with Bramadero Polychrome, were not available for sampling in 2001.) Several interesting trends are visible here. Castillo Engraved and Unspecified Black are very distinct from the other types inasmuch as their most common forms are generally not bowls but rather vessels that fall under the general category of jarra/jarrón: vertical-walled jarras in the case of Castillo Engraved (65% of the sample), and necked bottle-jars in the case of Unspecified Black (53%). (The pattern for this group remains unique even if the bottle-jars are considered to be a bowl form, a possibility noted earlier.) Madeira Polychrome and Granada Polychrome are each distinguished by rather overwhelming specializations on one vessel form: hemispherical bowls (88%) for Granada and composite silhouette/flat-bottomed bowls (81%) for Madeira. In fact, all of the serving-ceremonial vessel types demonstrate a certain specialization on one form over the others that accounts for at least 50 per cent of the



	hemi		super		comp		jarra		bottle-jar		plate		Total Identified
	#	%	#	%	#	%	#	%	#	%	#	%	#
Bramadero & Luna	6	60	1	10	3	30	0	0	0	0	0	0	10
Castillo Engraved	2	8	0	0	7	27	17	65	0	0	0	0	26
Unspecified Black	11	24	0	0	0	0	10	22	24	53	0	0	45
Granada	22	88	0	0	3	12	0	0	0	0	0	0	25
Madeira	15	16	3	3	77	81	0	0	0	0	0	0	95
Papagayo	187	40	27	6	258	55	1	0	0	0	0	0	473
Pataky	2	15	3	23	7	54	1	8	0	0	0	0	13
Ricardo Red	31	31	11	11	42	42	1	1	11	11	4	4	100
Vallejo	13	15	45	53	12	14	15	18	0	0	0	0	85

Figure 7.28 Relative frequencies of vessel shapes within major serving-ceremonial types

individual sample. The only exception is Ricardo Red, and even in this type, one form accounts for an impressive 42 per cent of the sample.

Focussing specifically on bowls, it can be seen that in each type there is an apparent preference for either hemispherical bowls or composite silhouette bowls. In the stratigraphic record of N20E30, hemispherical bowls appear to diminish somewhat through the course of time as a percentage of all serving-ceremonial vessels, while composite silhouette bowls increase (Figure 7.29). It is therefore not surprising that one of the two most important Ometepe Period diagnostic types for our site, Madeira Polychrome, focusses so heavily on this form, or that composite silhouette bowls from Madeira and other late types begin to supplant the predominance of Papagayo Polychrome in this form that is apparent in the earliest strata (Figure 7.30). On the other hand, what *is* surprising is the specialization of our second most important Ometepe Period type, Vallejo Polychrome, on the superhemispherical bowl form, which is proportionately rare in all of the other types. Finally, it should be observed that the similar frequencies of bowl forms within the Papagayo Polychrome and Ricardo Red types seems to provide yet another line of evidence that the latter type is perhaps best viewed as a variety of the form.

The apparent specialization on different forms within the individual types would seem to argue that different ceramic types were used together as part of an entire "tool kit" or what I have here termed a *ceramic suite*. Types belonging to the same compositional groups would therefore seem to be logical members of common ceramic suite tool kits. Following the precedent established in our analysis of diameters and wall thickness, Figure 7.31 illustrates the relative frequencies of vessel forms for five presumed compositional groups made up of the types summarised in Figure 7.28. As before, Papagayo and Pataky have been combined into one compositional group, and Madeira, Granada and Bramadero have been combined into another, which in this sample can be extended to also include Luna. Additionally, Castillo Engraved and Unspecified Black have been collapsed into one compositional group on the basis of the previously argued unity of these types.

The most striking pattern apparent in Figure 7.31 is that when Granada and Madeira (along with their associated types) are combined into one set, they generate a pattern of

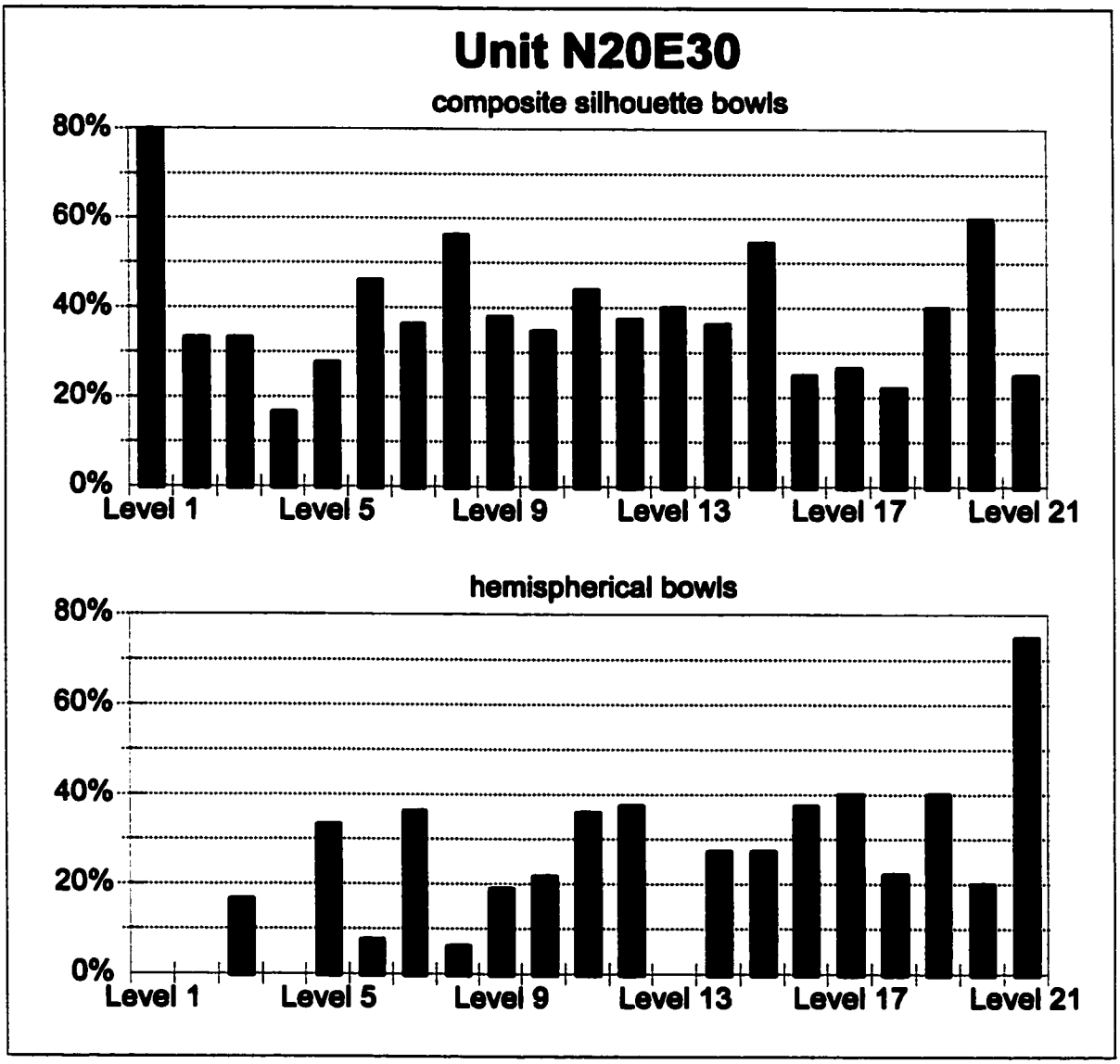


Figure 7.29 Changing frequencies of hemispherical and composite silhouette bowls through time

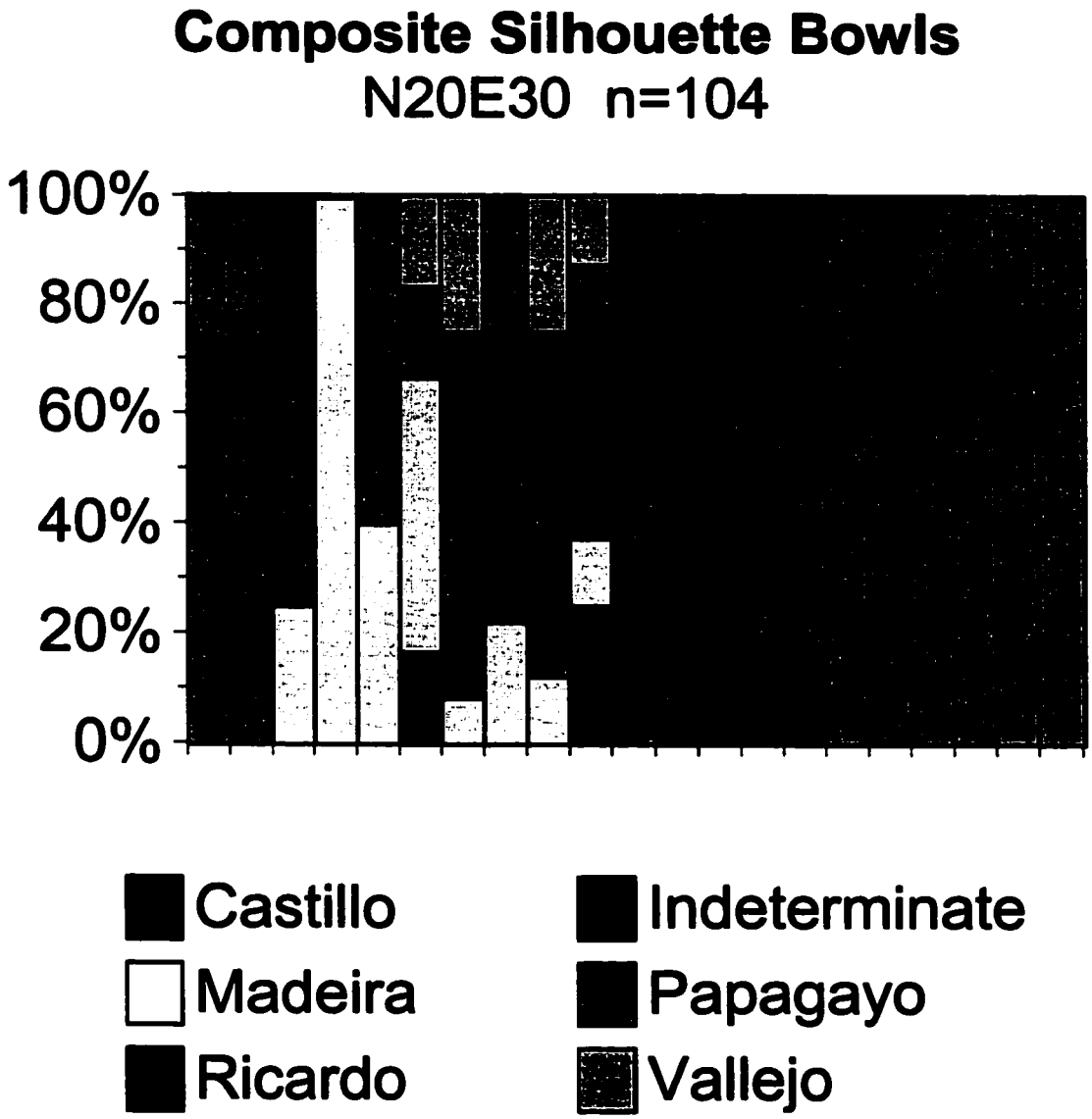
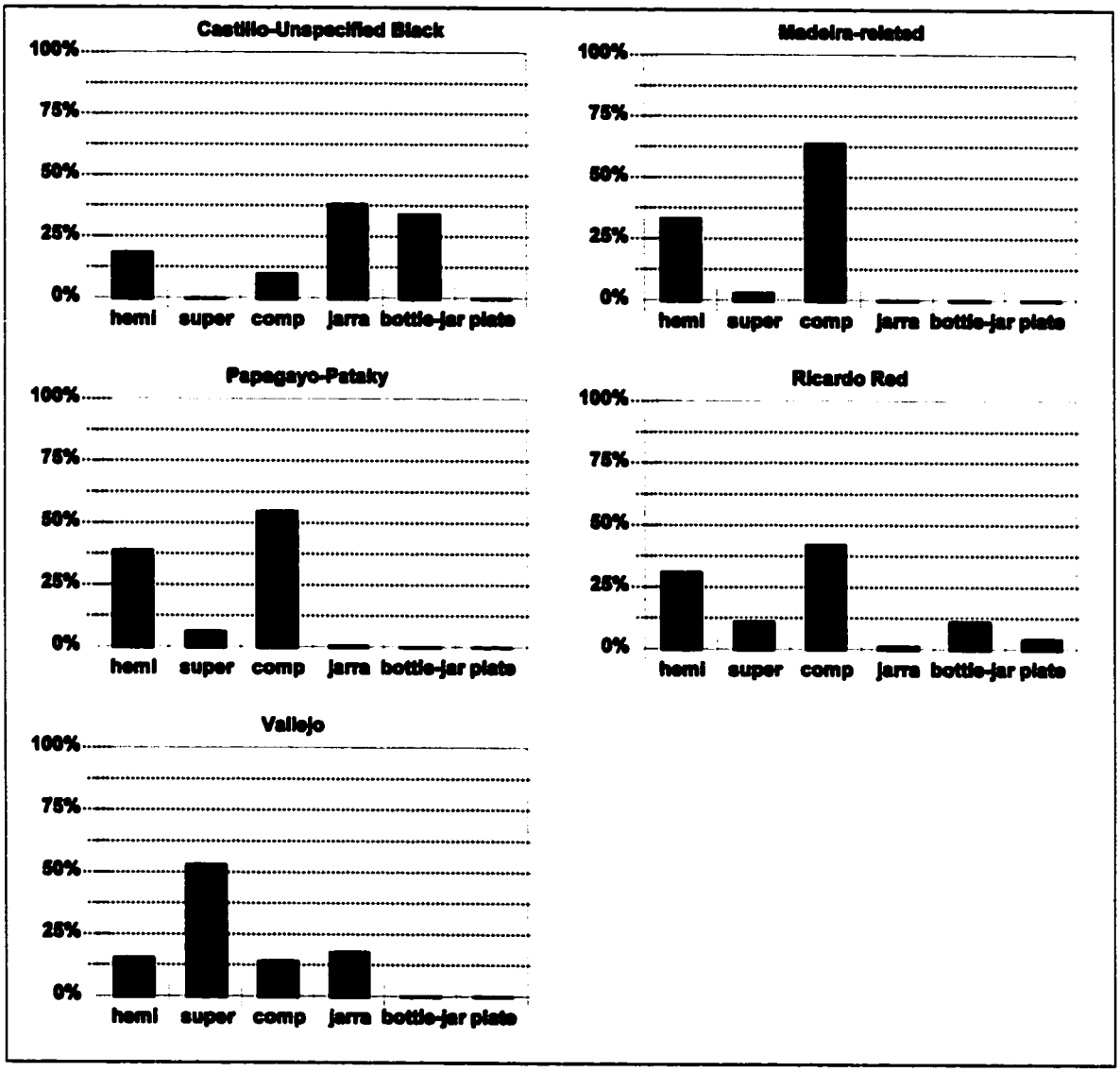


Figure 7.30 Replacement of Papagayo bowls by other types through time



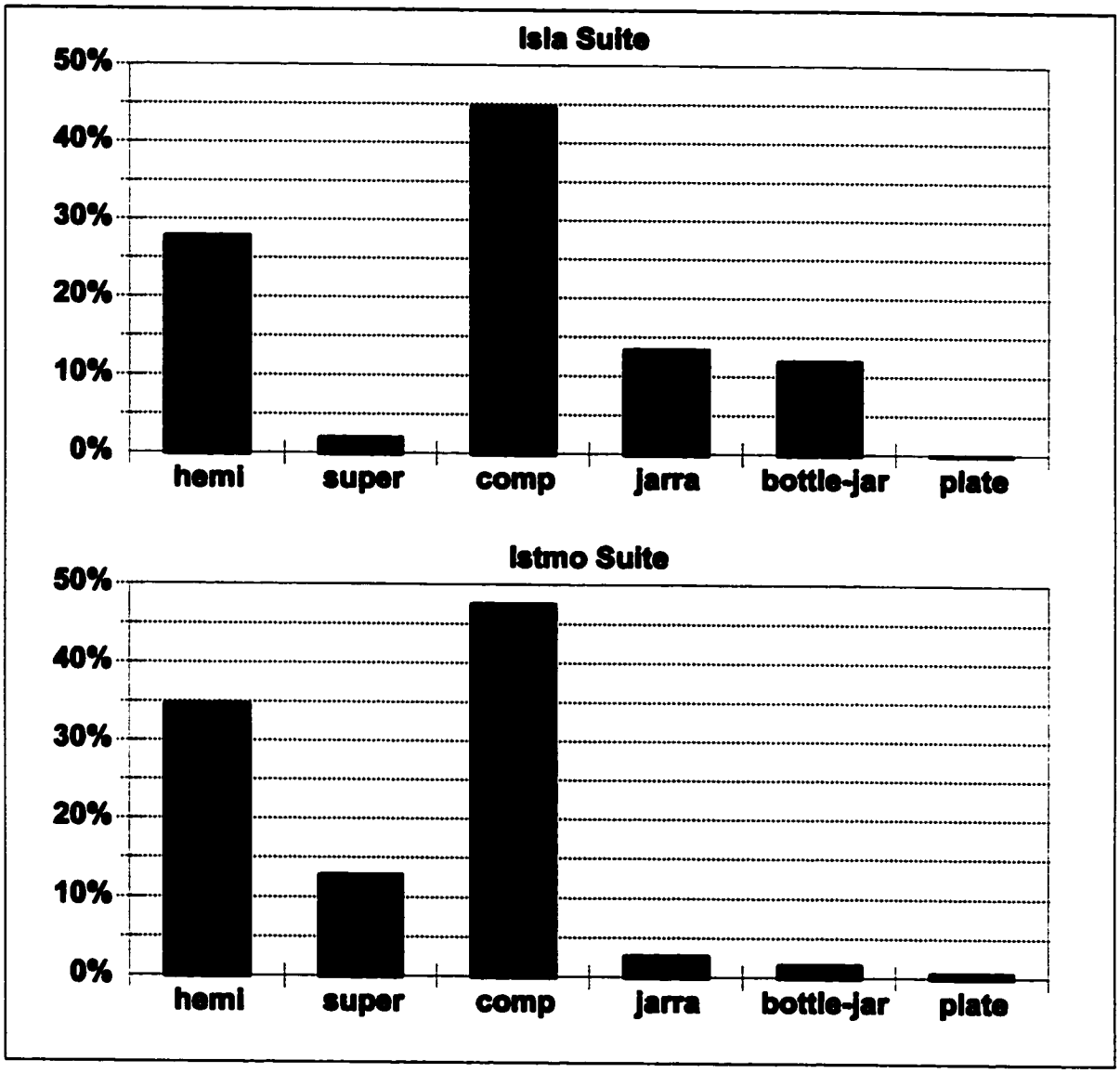
	hemi		super		comp		jarra		bottle-jar		plate		Total Identified
	#	%	#	%	#	%	#	%	#	%	#	%	#
Castillo-Unsp. Black	13	18	0	0	7	10	27	38	24	34	0	0	71
Madeira-related	43	33	4	3	83	64	0	0	0	0	0	0	130
Papagayo-Pataky	189	39	30	6	265	55	2	0	0	0	0	0	486
Ricardo Red	31	31	11	11	42	42	1	1	11	11	4	4	100
Vallejo	13	15	45	53	12	14	15	18	0	0	0	0	85

Figure 7.31 Frequencies of vessel forms in presumed compositional groups

distribution of forms within the group that mirrors the pattern characteristic of the Papagayo-Pataky group (which in turn continues to be mirrored by the Ricardo Red type). If this pattern is in any way indicative of the relative preference of the consumers of these pots for various forms, then this would seem to provide additional evidence that the Madeira-related compositional group does in fact represent the "competing" potting tradition hinted at by the preceding analysis of aspects of formal variation. Yet if the three similar patterns are supposed to represent "potting traditions" in some way, then what are we to make of the patterns generated by the Castillo-Unspecified Black ceramics–which continues to demonstrate a focus on jarras and bottle-jars even when the two types are combined–and the especially aberrant Vallejo pattern? Once again, if we accept the proposition that ceramic suites or tool kits were made up of various types, then we might assume that these two "aberrant" groups might each have been affiliated with one or the other of the suites formed by the other compositional groups.

Figure 7.32 combines the five compositional groups of Figure 7.31 to create two possible ceramic suites that, individually, could have theoretically met the presumed needs of ceramic users at Santa Isabel for specific types of serving-ceremonial vessels (though in practice there was probably a lot of mixing, as our very assemblage of course demonstrates!). The frequently reiterated similarities between Papagayo and both Vallejo and Ricardo Red make the grouping of these three types into one ceramic suite a logical choice. For the purpose of discussion, I have named this the "Istmo Suite" after the Isthmus of Rivas. The grouping of Castillo with the Madeira-related ceramics is somewhat more tentative, but is based on the chronological affiliation of these types, their mutual strong association with Ometepe Island, and the aforementioned similarities in vessel form (particularly the presence of flat-bottomed bowls with dentate rims and the evidence that Castillo Engraved vessels were thinner than the site's norm). As well, Castillo might been seen as presenting a complimentary alternative to Vallejo forms (see below). I have named this grouping the "Isla Suite" because of the Ometepe Island connection.

As combined units, the Istmo and Isla suites preserve the similar relative preferences for different bowl forms that was the initial impetus behind their grouping. Both ceramic suites



	hemi		super		comp		jarra		bottle-jar		plates		Total Identified
	#	%	#	%	#	%	#	%	#	%	#	%	#
Isla Suite	56	28	4	2	90	45	2	13	24	12	0	0	201
Istmo Suite	233	35	86	13	319	48	1	3	11	2	4	1	671
													872

Figure 7.32 Possible serving-ceremonial vessel ceramic suites

clearly favour composite silhouette (or flat-bottomed) bowls over hemispherical bowls, with superhemispherical bowls running a poor third. The difference between frequencies of composite silhouette bowls in the two ceramic suites is only three per cent (45% in the Isla Suite vs. 48% in the Istmo Suite). In fact, the major differences between the two suites are in the minor vessel categories: superhemispherical bowls are much more common in the Istmo Suite, while jarras/jarrones and bottles play a more prominent role in the Isla Suite. Yet even in this respect, the differences between the two ceramic suites may not be cut and dried, since Vallejo bowls and Unspecified Black bottle-jars may have been more similar than their names suggest. Complete Vallejo vessels illustrated in Canouts and Guerrero (1988:232, Plate 28) feature vertical flaring rims that might well be called necks if the distinction between the rim and the body were a bit more pronounced.

While the relative frequencies of the vessel forms *within* the individual ceramic suites are similar, the ceramics in the Isla Suite were considerably less common at Santa Isabel than the Istmo Suite ceramics, comprising only 23 per cent of the serving-ceremonial vessel sample that was used to create the two ceramic suites (Figure 7.33). The makeup of the two ceramic suites also appears to have changed over time (Figure 7.34): in the early levels of N20E30, the relative frequencies of the forms in the two ceramic suites are quite dramatically different, with the Isla Suite favouring bottles and jarrones/jarras as forms and favouring hemispherical over composite silhouette bowls. In the latter levels of the unit, however, the profile has shifted in a direction that begins to resemble that of the Istmo Suite, with the production of bottle-jars and hemispherical bowls decreasing dramatically while the production of composite silhouette bowls skyrockets. In contrast, the profiles for the Istmo Suite remain relatively constant across the entire sequence, being characterised only by a slightly greater emphasis on composite silhouette and superhemispherical bowls at the expense of hemispherical bowls.

Utilitarian Vessels. Figure 7.35 illustrates the relative frequencies of rim shapes/vessel forms for Rivas Red: Rivas, Rivas Red: Variety Unspecified, and Sacasa Striated based on the entire collection of Santa Isabel utilitarian vessel rim sherds. The relative frequencies of forms within the Rivas Red: Rivas and Rivas Red: Variety Unspecified categories are clearly similar,

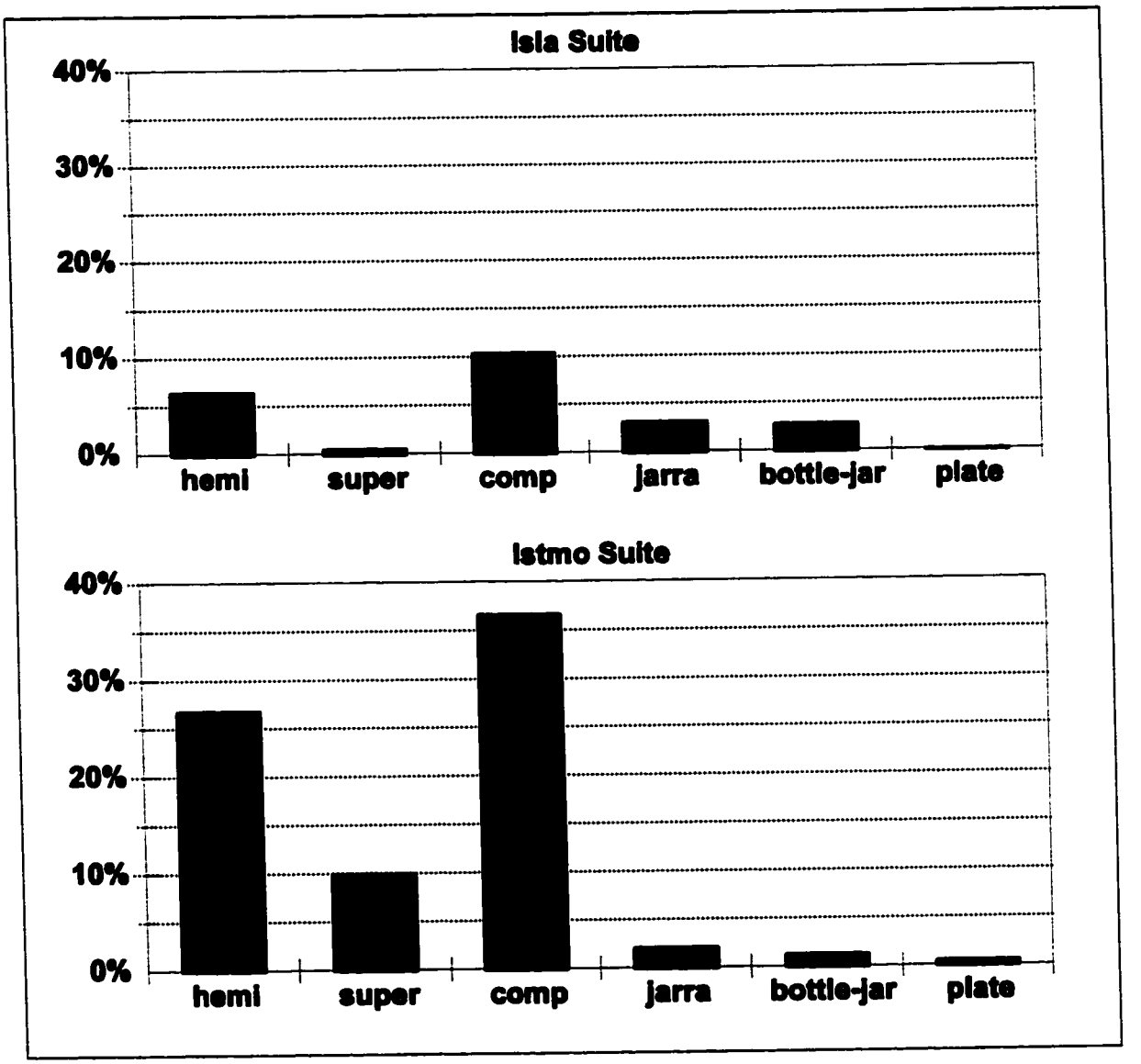


Figure 7.33 Vessel forms as percentages of entire serving-ceremonial vessel sample incorporated into Isla and Istmo suites

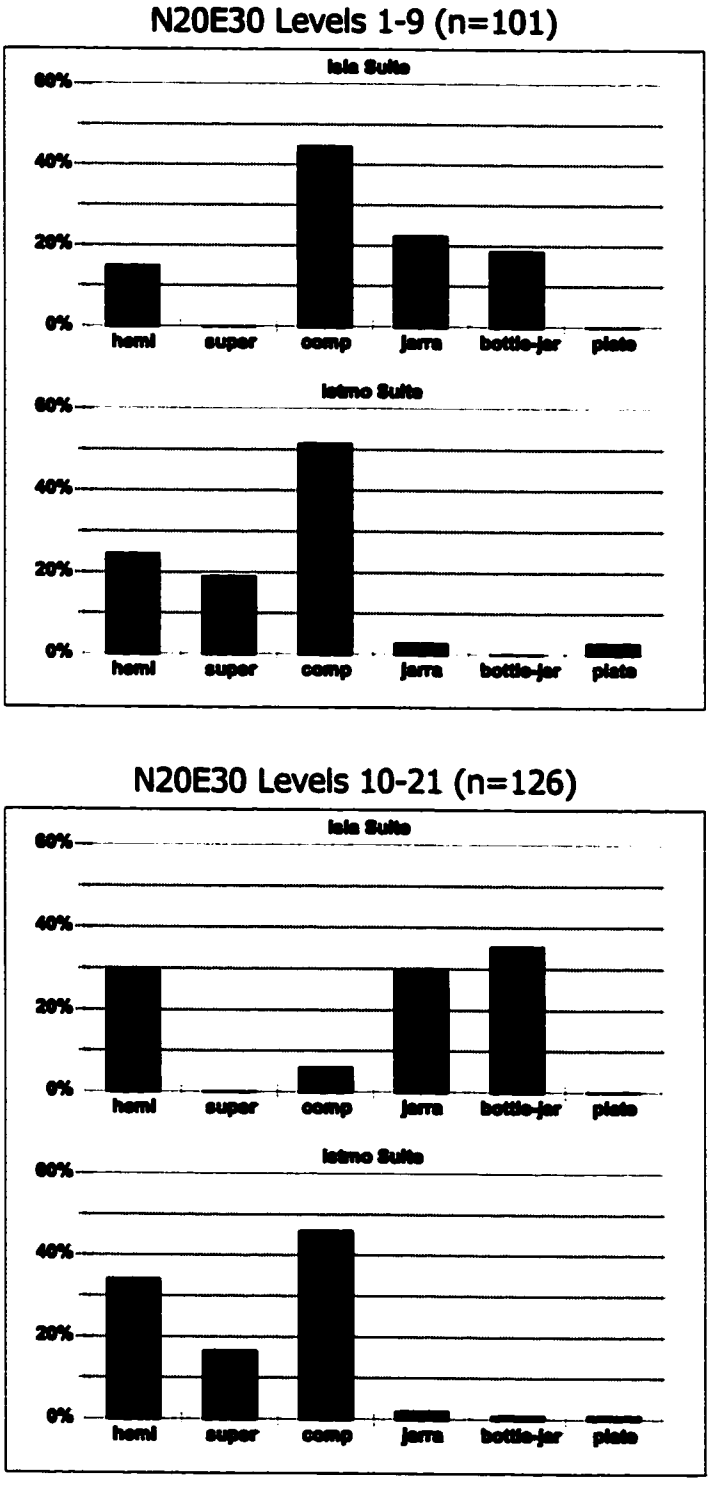
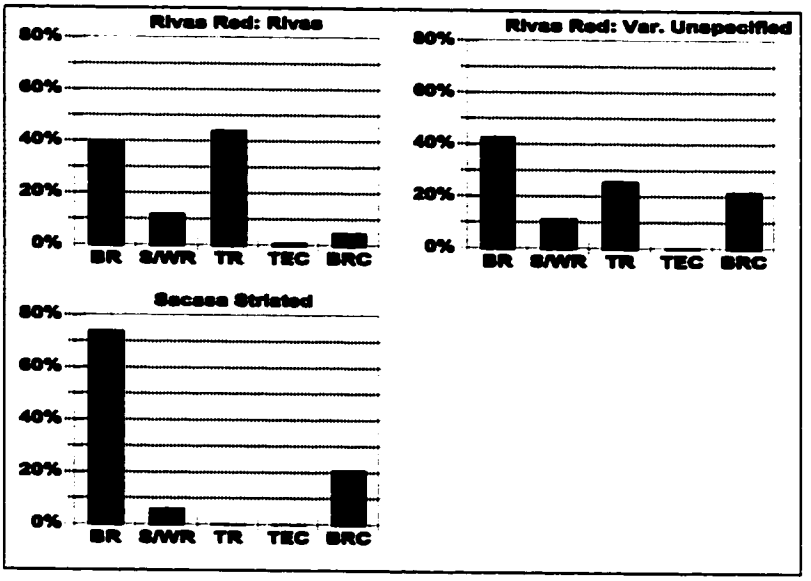
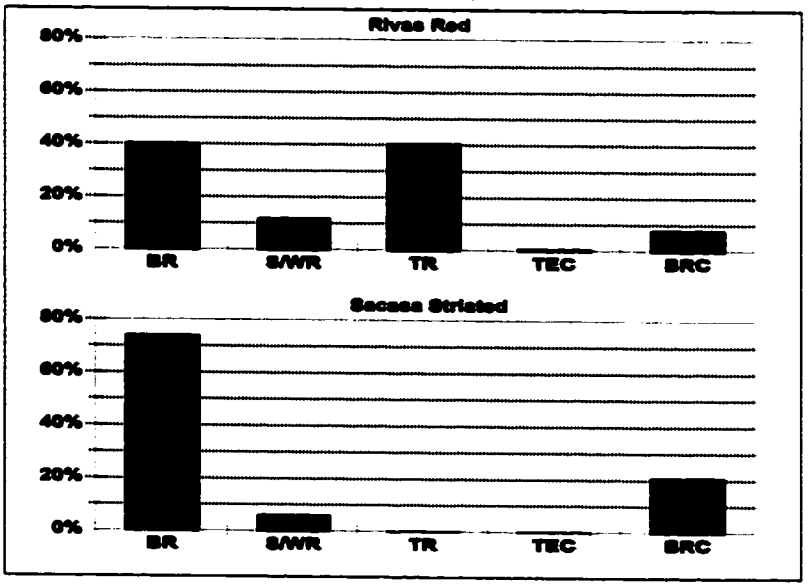


Figure 7.34 Changes in ceramic suite frequencies over time

Individual Varieties



Type vs. Type



	OLLAS/CAZUELAS						OLLAS		CAZUELAS		TOTALS
	Bent Rim (BR)		Straight/Wedge Rim (S/WR)		Tapered Rim (TR)		Tecomate (TEC)		Broad Rim Cazuela (BRC)		
	#	%	#	%	#	%	#	%	#	%	#
Rivas Red: Rivas	232	39	69	12	259	44	4	1	26	4	590
Rivas Red: Var. Unsp.	62	42	16	11	37	25	0	0	31	21	146
Sacasa Striated	90	74	7	6	0	0	0	0	25	20	122

Figure 7.35 Relative frequencies of utilitarian vessel rim shapes/forms

though perhaps not quite so similar as we might expect (the similarity between Papagayo Polychrome and Ricardo Red was apparently greater, for example). The two Rivas varieties diverge significantly in the tapered-rim and broad-rimmed cazuela categories, and in the case of the latter class of vessel, the frequency observed for Rivas Red: Variety Unspecified seems more similar to that of Sacasa Striated. However, it should be noted that the broad-rimmed cazuela form was originally identified as a sub-class of the tapered-rim category, at least in the case of the Rivas varieties (in the case of Sacasa Striated, the squared broad rim clearly did not fit in the "tapered" category), so the two divergences have a common explanation. Comparing the Rivas type as a whole to Sacasa Striated, the most significant difference is that Sacasa completely lacks a tapered-rim category, and makes up the difference with a correspondingly much larger bent-rim category and a somewhat larger broad-rimmed category.

Preferences for utilitarian vessel forms do not appear to have changed dramatically over time at Santa Isabel (Figure 7.36). The profiles generated by the material in Levels 10 to 21 of N20E30 are not profoundly dissimilar to those generated by the material in the upper strata of the unit. However, there does seem to be a increased preference for tapered-rim vessels at the expense of bent-rim vessels in the Rivas Red: Rivas variety, and bent-rimmed vessels also decrease in the Rivas Red: Variety Unspecified category, though in this case the decrease is in favour of the broad-rimmed cazuela form. This form actually disappears in the upper levels in the case of Sacasa Striated, and it is possible that consumers shifted their preference from the one type to the other in the case of this particular vessel form. Straight or wedged rim Sacasa Striated vessels also vanish in the upper strata, and it is tempting to see this type as gradually being replaced by Rivas varieties, though the stratigraphic evidence presents an inconclusive chronological picture of Sacasa Striated (Figure 7.37).

SUMMARY

Earlier in this chapter, I observed that systematic variations in ceramic form might constitute good evidence for different patterns of habitus, and that the correlation of formal

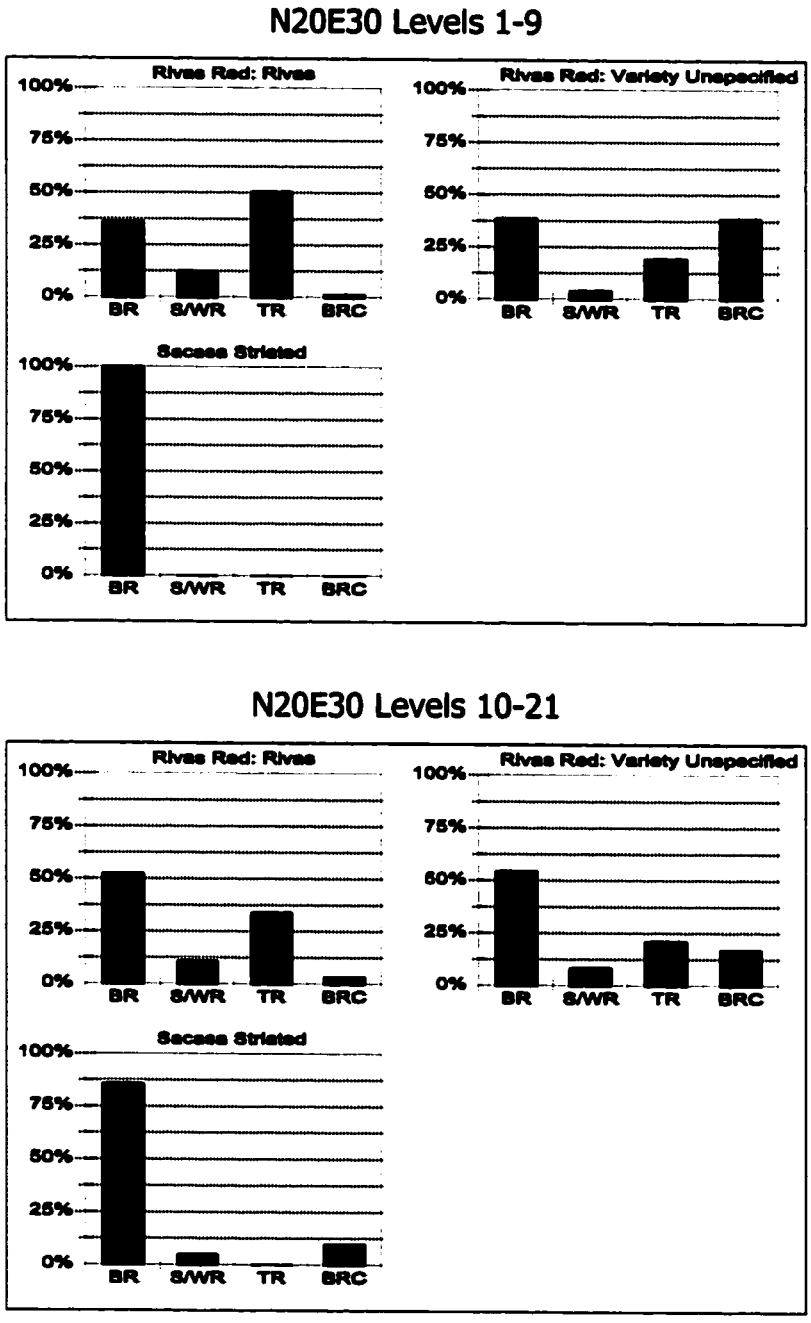


Figure 7.36 Changes in frequencies of utilitarian vessel types over time

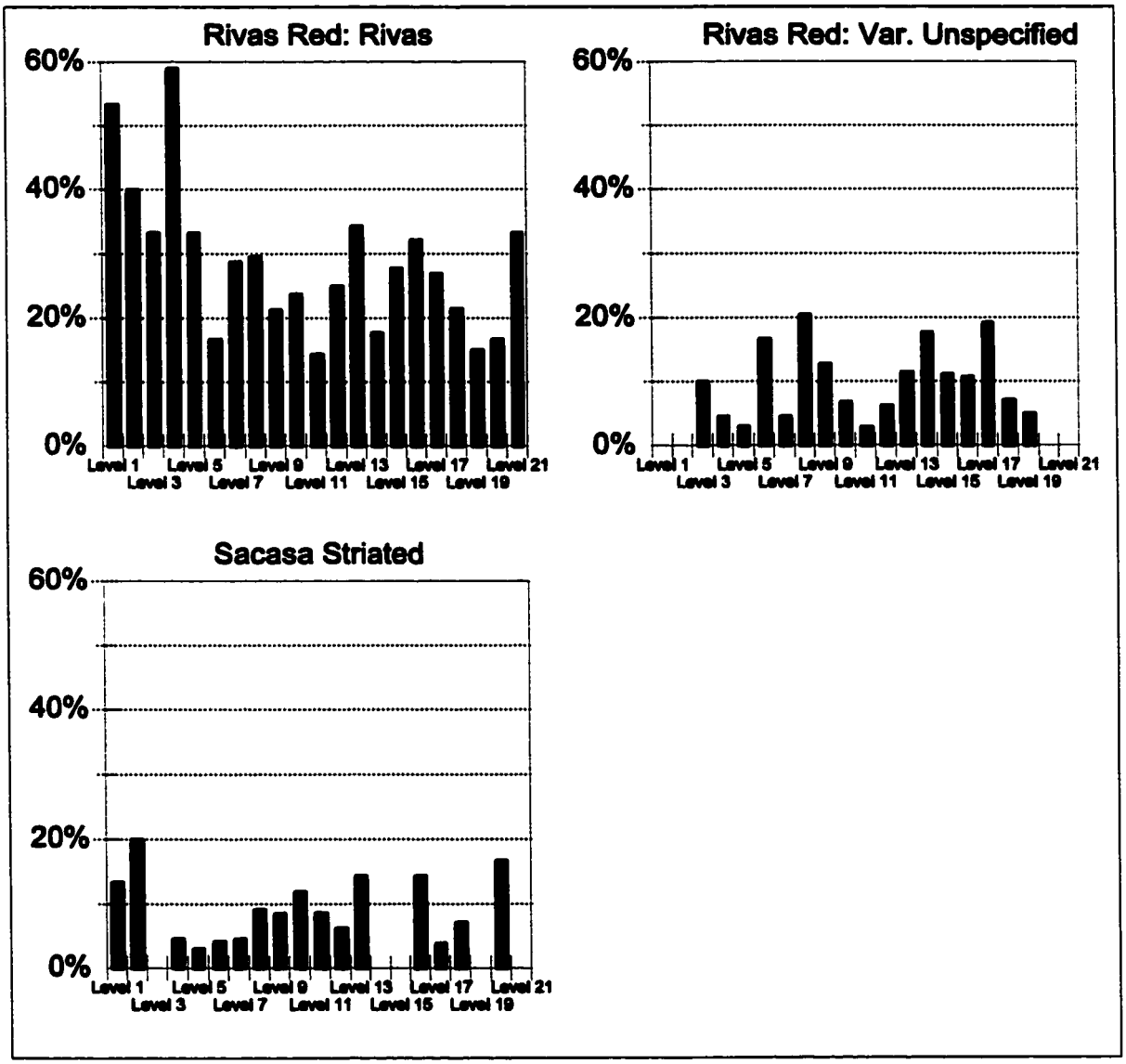


Figure 7.37 Changes in frequencies of utilitarian vessels in Unit N20E30 over time

variation with decorative variation would provide even better evidence. In the course of this chapter, we have observed patterns of variation in orifice diameters, wall thicknesses, and preferences for specific vessels which often did appear to demonstrate significant correlations not only with each other, but also with the previously established type categories based on decorative variation. We have also noted instances where decorative variation could not be correlated with certain kinds of formal variation: for example, while variations in wall thicknesses could be correlated in a general way with ceramic types or groups of types, variations in orifice diameters could not. Finally, we observed how patterns of variation in the selection of ceramic forms within types may suggest the presence of ceramic suites that may be correlated with groups with different habitus. In the following final chapter, we will discuss the implications of these findings for the problem of ethnicity in ancient Nicaragua.

Chapter 8
DISCUSSION AND CONCLUSIONS

Throughout this study I have taken the stance that the identification of patterns of habitus is a good first step towards identifying ethnicity archaeologically. Given that habitus often provides the raw material for ethnic identities, as we saw in chapter 5, it is logical to assume that if the archaeological record of a given area reveals the presence of different groups guided by different habitus, and if the ethnohistorical record gives us reason to believe that different ethnic groups were present in the area, then it may be possible to make a connection. This being the case, the first question that must be answered is: does the ceramic evidence provide evidence of different habitus?

CERAMIC EVIDENCE OF HABITUS AT SANTA ISABEL

In the preceding chapters it was suggested that the subtle influence of habitus on formal variation in ceramics might be detected in preferences for such things as specific wall thicknesses, orifice diameters and vessel shapes. With regard to the first of these aspects of ceramic form, the evidence presented in chapter 7 supports the argument that Santa Isabel serving-ceremonial vessels were produced by at least two different potting traditions–in other words, two groups with different habitus–each of which can be associated with one of the two ceramic suites that I have called Istmo and Isla. The tradition that produced the former ceramic suite is responsible for the majority of the assemblage, including the ubiquitous Papagayo Polychrome and the previously unknown Ricardo Red, as well as the Pataky and Vallejo polychromes. This material featured walls with an average thickness of 7 mm, though this naturally varies somewhat between the different compositional groups that make up the ceramic suite and between the different vessel forms within the groups. The potting tradition (or traditions) associated with the Isla Suite, in contrast, appeared later on the scene, can be associated with only about a third as much material in total, and produced ceramics with an average wall thickness of 6 mm. The influence of habitus must be particularly subtle indeed

to produce only a 1-mm difference in average wall thickness–especially when the ranges of recorded wall thicknesses for each ceramic suite overlap significantly–but a subtle difference is not a trivial difference, as we observed in the previous chapter. The difference is quite real, and is even reflected in the recorded ranges of wall thickness for bowl forms from both ceramic suites (Table 8.1). In this case, the subtlety of the difference in wall thickness seems to provide more convincing evidence for different habitus groups than more clear-cut differences might, since if one group of potters consciously decided to produce a "thin" ware to complement their "thick" ware, we might expect them to be more obvious about it.

Table 8.1 Range of wall thicknesses, Istmo and Isla ceramic suites

	Hemispherical bowls (mm)	Superhemispherical bowls (mm)	Composite silhouette bowls (mm)	Total range (all bowls) (mm)
Istmo Suite	4-11	4-10	4-10	4-11
Isla Suite	3-8	5-7	4-9	3-9

Utilitarian vessel wall thicknesses, in contrast, reveal no clear distinctions between Rivas-type and Sacasa Striated vessels that might suggest that the two different types were each produced by a different potting tradition, despite the obvious differences between them. In fact, if wall thickness alone were used in this case as the criterion for defining types, then the ceramics in the Rivas Red: Variety Unspecified category would need to be grouped with Sacasa Striated rather than with the larger Rivas Red: Rivas category. Such a grouping might in fact be quite sensible, since every vessel in a type category does not necessarily have to come out of the same kiln, as it were. Santa Isabel utilitarian vessels might have been produced by various groups of potters who shared a common technological tradition and produced the same pottery types, but who developed styles distinct enough to produce patterns that can be discerned archaeologically. One of these groups might have "specialised" in producing Sacasa Striated ceramics as well as black or maroon-slipped vessels with similar wall thicknesses (a possibility that might also find some support in the aforementioned similar distribution of Rivas Red: Variety Unspecified and Sacasa Striated on the mound, as well as in the similar frequencies of broad-rimmed cazuelas–another "speciality", perhaps?–between

the two types). In such a scenario, the average thickness (and diameter as well) of Rivas Red: Variety Unspecified vessels may have gradually drifted somewhat from the Rivas Red: Rivas "standard" established by another workshop or workshops favouring a more clearly red slip. However, we can only speculate about such things at present: with regard to the utilitarian vessels, our database seems to have been too small to provide us with clear evidence for different habitus groups.

Our comparison of orifice diameters was also largely inconclusive in demonstrating that different serving-ceremonial vessel types were manufactured by different groups, since the evidence for different preferences for orifice sizes that I had expected to find did not materialise. As we noted, while individual vessel sizes ranged greatly, the average radius of all bowls in each of the various compositional groups fell within a centimetre of the 9 cm mean. There is perhaps a weak pattern visible in the way that Istmo Suite bowls either equal or exceed the average radius (with averages of 9, 10 and 9 cm respectively for Papagayo-Pataky, Vallejo and Ricardo Red) while Isla Suite bowls are more likely to fall *below* the average than to equal it (the averages for the Madeira-related group, Castillo Engraved and Unspecified Black were 9, 8 and 8 cm, respectively). Yet while this may seem to be appropriate, considering the thinner walls of the Isla Suite, in fact the smallest Isla bowl orifice averages came from Castillo and Unspecified Black, both of which had thicker walls, on average, than the more common Madeira-related compositional group with the largest average orifices.

That the lack of evidence for different orifice size preferences simply reflects the fact that all of the ceramics of Santa Isabel were produced by one potting tradition seems very unlikely, in light of the evidence derived from the comparison of wall thicknesses as well as the sourcing of the serving-ceremonial vessels to such a variety of compositional groups. It is possible that the apparent lack of evidence for different preferences is simply a sampling problem: larger samples for poorly represented types like Castillo Engraved, for example, might have yielded different results. Another possibility is that potters from the various potting traditions supplying Santa Isabel with ceramics subscribed to a widespread ideal (with potentially great time depth) regarding bowl orifice sizes. For example, the average diameters

reported for Ulúa Polychrome bowls from the Late Classic sites of El Nispero and La Mariposa in Southwestern Honduras would have fit comfortably into our 8-10 cm radius range (Urban 1993a:178-179). While these Honduran sites predate our site, they may have been part of the same great ceramic tradition: Ulúa Polychrome has been connected to Greater Nicoya by various researchers who have seen a relationship between the earliest appearing polychrome type in Greater Nicoya, the Galo Polychrome[15] of the Bagaces Period (Healy 1980:124). On the other hand, bowls with broadly similar vessel forms from a more contemporary Honduran pottery type, Late Postclassic Nolasco Bichrome from Honduras's Naco Valley, typically feature average diameters several centimetres greater than Santa Isabel pottery (Urban 1993b:57-58), so there are obviously limits to how far we can explain away similarities between different types by appealing to universalist principles.

A third possibility is that we are looking for the wrong kind of habitus in this case, and that rather than finding evidence of potters' preferences, we have been provided with evidence of the preferences of consumers (Lind 1987:4). If we assume that the potting tradition associated with the Istmo Suite was local to or at very least more closely tied to Santa Isabel (since the products of this tradition are more common and are present over the entire chronology of the site), then it is logical to assume that this more dominant tradition also set (or reflected) the standard expectations of pottery consumers of the site. The success of the new tradition that seems to have appeared during the transition between the Sapoá and Ometepe periods might therefore have depended on how well it could meet these expectations, since a consistent supply of bowls that were considered to be too small or too large might have ultimately led to the rejection of its wares in favour of locally produced material that was "just right". Wall thickness, in contrast, may have been a negligible factor from the consumer's perspective (though not the potter's), and might therefore have remained relatively unaffected by consumer preferences.

A possible way that this might be tested would be to look for changes in Isla Suite ceramics over time that might indicate that the ceramic suite was not only converging with

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[15]Healy refers to Galo Polychrome by the name "Gonzales Polychrome".

the Istmo Suite in terms of preference for vessel forms (as we noted in chapter 7), but also in preferences for orifice diameters. The assumption here is that as potters learned their new market they might have responded accordingly by producing more vessels in a more acceptable size. Alternatively, and especially if the potters of the new potting tradition were located elsewhere and shipping their products to Santa Isabel, the new tradition potters (or their intermediaries) might have simply learned to be more selective about the pots they sent to Santa Isabel (a theory that might also be tested by a comparison of Isla Suite orifice diameters based on material excavated in different parts of Nicaragua). Unfortunately, our data collection strategy does not permit an analysis of potential patterns in changes in orifice diameters within types over time, since in most cases proveniences were not recorded for the individual sherds that were sampled for radius and thickness data. However, the average radii of hemispherical bowls in three varieties of Isla Suite pottery that can be put in a rough chronological sequence–Granada Polychrome, Madeira: Las Marias and Madeira: Banda–does support the hypothesis that these ceramics as a group were converging upon the norm (Table 8.2). Granada Polychrome first appeared during the Sapoá-Ometepe transition, primarily in the form of large hemispherical bowls (a bowl form that diminished in popularity throughout the sequence, as noted in chapter 7). In contrast, hemispherical bowls of Madeira: Banda (which appeared at our site somewhat later than the Las Marias variety of Madeira), averaged 2 cm smaller than Granada. Meanwhile, the focus of Isla Suite ceramics had shifted from hemispherical bowls to composite silhouette bowls, a trend mirrored in all of the serving-ceremonial vessels from the site. In this case, therefore, the convergence of preference for vessel forms coincided with a convergence of preferences for orifice size.

Table 8.2 Diminishing orifice sizes for Isla Suite hemispherical bowls over time

Type	Period	Average radius (cm)	Range (cm)
Granada (n=10)	Sapoá-Ometepe transition	12	8-15
Madeira: Las Marias (n=4)	Ometepe	11	7-14
Madeira: Banda (n=16)	Late Ometepe	10	6-17*

*One vessel with a 17 cm radius was an outlier; the contiguous range for this type was smaller (6-13 cms).

The comparison of orifice diameters of utilitarian vessels provided no more conclusive evidence of different potting traditions than did the serving-ceremonial vessel study, since there was even less of a variance in the average diameters of ollas as well as cazuelas in both the Rivas Red varieties and Sacasa Striated than there was between many vessel forms belonging to different compositional groups in the serving-ceremonial vessel category. This was to be expected, since both of the utilitarian vessel types found at the site were present throughout the entire sequence, and neither represented a new development (at least, not during the Sapoá and Ometepe periods) that might need to be explained in terms of a new outside influence. There is therefore little reason to think that Rivas Red and Sacasa Striated were not the products of one locally-based potting tradition–the simplest explanation based on the size and ubiquity of these vessels at any rate. This would suggest that the utilitarian vessels of Santa Isabel may have been produced by the same potters who produced the serving-ceremonial vessels of the Istmo Suite, since that ceramic suite seems more likely to have been produced locally as well.

The distinct preferences for different vessel forms expressed in each of the two serving-ceremonial vessel ceramic suites seem to provide good evidence for different habitus groups. As we have seen, the Istmo Suite was characterised by a preference for composite silhouette bowls over hemispherical bowls over superhemispherical bowls, while jarra/jarrón and bottle forms were rare. This pattern of preference, which likely reflected the habitus of the potters and ceramic consumers at Santa Isabel, was so strongly expressed that it endured throughout the entire chronological sequence (with the preference for composite silhouette bowls becoming even greater through time) and was mirrored in the two most common serving-ceremonial vessel ceramic types found at the site: Papagayo Polychrome and Ricardo Red. While the Isla Suite was also characterised by a similar ranking of the three bowl categories and similar frequencies of the two most important bowl forms, the variance in the minor vessel form categories, where superhemispherical bowls were far less important than either jarra/jarrón or bottle forms, gave the suite a character distinct from the Istmo Suite. Moreover, the stratigraphic evidence seems to suggest that the similarities between the two ceramic suites were not due to a common potting tradition (and therefore, a shared habitus)

but rather to the same factors that seem to have produced the aforementioned uniformity in orifice sizes–that is, to the need for the Isla Suite potters to adapt to the demands of Santa Isabel ceramic users. When the ceramic suite first appeared its composition was rather dramatically different, emphasising the importance of bottles, jarras/jarrones and hemispherical bowl forms to a much greater extent than composite silhouette bowls. This pattern was reflected in the Castillo-Unspecified Black ceramics, just as the Istmo Suite preferences were reflected in Papagayo and Ricardo Red. The Isla Suite changed over time to more closely approximate the pattern set by the Istmo Suite, but never entirely lost its unique character. This hypothesis that different vessel form preferences might reflect different habitus groups might be tested in the same way as the hypothesis that orifice size might reflect the same thing: by comparing relative frequencies of different vessel forms in types associated with the Isla and Istmo suites excavated in other Greater Nicoya sites. This approach might even lead to the identification of the production centre (or centres) for the Isla Suite.

In sum, it would seem that, based on the evidence of systematic variation in wall thickness between ceramics belonging to different compositional groups and the preferences for certain vessel forms in certain types, the answer to our initial question regarding whether or not the Santa Isabel ceramics provide evidence of groups with different habitus must be yes. There appears to be very clear evidence that the pottery of this site was produced by at least two different potting traditions. One of these was probably located nearby and supplied most of the site's serving-ceremonial vessels (i.e., those belonging to the Istmo Suite) for the entire chronological sequence, and likely also supplied the majority of its utilitarian vessels. The other tradition, which may have been located elsewhere (possibly on Ometepe Island), began supplying the site with Isla Suite serving-ceremonial vessels during the Sapoá-Ometepe transition and appears to have adapted its production over time to conform to the expectations of Santa Isabel ceramic consumers. This being the case, we must now ask a second question: can this evidence of habitus be used to identify the ethnic groups–or more specifically, the ethnic groups descended from Mexican migrants–known to have been in Nicaragua?

HABITUS AND ETHNICITY AT SANTA ISABEL

Most of the ceramics that I have included in the Istmo Suite–specifically, the various varieties of the Papagayo and Pataky polychromes–have been previously associated with the arrival of the first group of Mexican migrants, the Chorotega, sometime between AD 800 and AD 900–at the beginning of the Sapoá Period, in fact (Healy 1980:169; Salgado 1996:297). Healy, for example, connects Papagayo and the broad range of new vessel forms and decorative motifs that are associated with it (including composite silhouette bowls, pear and ovoid-shaped jars, stepped frets, and feathered serpent and jaguar designs) with "the arrival of strong, Mesoamerican influences", and suggests that this connection is confirmed by the simultaneous appearance of a new utilitarian type, Sacasa Striated (Healy 1980:169). This connection does not seem particularly inappropriate, especially since it is based on two lines of evidence rather than one–that is, it considers changes in vessel form in addition to decorative changes that might have served other purposes, as discussed in chapter 7. It is also supported by more recent evidence that "Chorotega" sites seem to differ from earlier Bagaces Period sites in other ways that suggest the introduction of a new habitus: this includes the appearance of large basalt sculptures, widespread changes in settlement patterns (such as the relocation of the nucleus of the greater Santa Isabel site from the area of Willey and Norweb's Santa Isabel "B" to the area of our own site), and changes in lithic complexes and mortuary practices (Niemel 2000:3; Salgado 1996:296-97). As noted in chapter 5, patterns of co-variation between different classes of archaeological evidence can be a good indicator of the orchestrating effects of habitus. Since there seems to be evidence of a change that can be connected to the ethnohistorically documented arrival of a new ethnic group, it seems reasonable to assume that, in this particular case, the new habitus *can* be roughly correlated with the ethnic group known to the Spanish as the Chorotega, and that certain assemblages of serving-ceremonial and utilitarian vessels might therefore be used as ethnic markers by archaeologists, though they may not have been intended to serve this purpose by their makers or users. (This is not to say that the group remained ethnically intact–i.e., "Mesoamerican"–by the time the Spanish arrived; however, the extent to which they

assimilated and/or otherwise integrated with their indigenous predecessors–a likelihood suggested by their apparent continued use of the same red-slipped utilitarian vessels used by those predecessors–must remain a question for future research.)

The identification of the second important group of Mexican migrants with ceramic materials is more problematic. In practice, virtually all material that is considered to be diagnostic of the Ometepe Period is associated with the later-arriving Nicarao. This connection is based almost entirely upon the "Mesoamerican" nature of Ometepe-diagnostic decoration–despite the fact that this very same quality supposedly distinguishes the ceramics associated with the Chorotega–and on the assumption that the Nicarao "displaced" the Chorotega in the Rivas area upon their arrival (Healy 1980:337-39). Motifs on types like Castillo Engraved and Vallejo Polychrome have long been connected to the Postclassic Mixteca-Puebla tradition often associated with Cholula, Oaxaca and the Valley of Mexico in general (e.g., Coe 1962:176; Day 1994:237; Healy 1980:102, 326-27; Norweb 1964:557; Smith and Heath-Smith 1980; Snarskis 1981:36). As noted in chapter 7, Vallejo varieties in particular are usually considered to be "unquestionably Mesoamerican in orientation" (Healy 1980:152; cf. Lothrop 1926:193).

While it may seem a natural step to associate the new Mesoamerican motifs appearing in ceramic decoration during the Ometepe Period with the most recently arrived Mesoamerican group–especially since we seem to be able to make such an association in the Sapoá Period–the situation in the Ometepe Period is quite different than in the Sapoá. The main problem is that there are no other significant archaeological changes that can be correlated with the decorative innovations in ceramics and the dramatic cultural differences described in the ethnohistories. Ometepe ceramics are always found in sites that were already occupied during the preceding period–there is not a single known exclusively "Nicarao" site in Greater Nicoya–and always in contexts in which they are outnumbered by the serving-ceremonial vessel ceramics that first appeared in the Sapoá and which are associated with the Chorotega. There are no discernable changes in settlement patterns that might indicate the reorganisation of communities under the Nicarao, and no changes in other categories of

material culture, with the possible exception of "a more numerous and diversified" assemblage of stone tools (Healy 1980:338).

Even the ceramic changes themselves are relatively minor compared to the introduction of the new "ceramic tradition" at the beginning of the Sapoá Period. While Ometepe diagnostics feature new decorations and occasionally new colours–such as the distinctive blue-grey paint of Vallejo (Healy 1980:243)–as we have seen, they continue to utilise the same range of vessel shapes as Sapoá Period serving-ceremonial vessels and are very often consistent with earlier types in formal attributes such as wall thickness. No new utilitarian vessel types analogous to Sacasa Striated or even new vessel forms like comals (which ethnohistoric accounts would seem to suggest the Nicarao possessed) can be associated with the Ometepe Period. In short, there is no evidence for the replacement of one habitus with another that might support the assumption that the Nicarao "displaced" the Chorotega–at least, not based on our present knowledge of the Nicaraguan archaeological record. Rather, the evidence derived from most "Nicarao" sites is more suggestive of an uninterrupted occupation from the Sapoá to the Ometepe Period, an interpretation that is supported by the evidence presented in this thesis.

The lack of evidence for population replacement does not necessarily dispute the Spanish accounts of "Nicarao" communities, but it does suggest that the nature of the Nicarao migration was rather different than the Chorotegan migration centuries earlier. The evidence for continuity suggests that the Nicarao migrant population might have comprised a small group or groups–probably of predominantly elite males, who might be expected to have less of an impact on the current group's habitus (cf. Burmeister 2000:549-50)–rather than a more representative demographic sample of a Nahua population somewhere in Mexico. Rather than pushing the Chorotega out of Rivas and setting up shop in their former communities, small groups of Nicarao may have instead taken control of Chorotegan communities that then became, by extension, "Nicarao" communities in the eyes of their neighbours. This may have been done with an eye towards controlling trade, since the Rivas area presented an excellent position from which to control the aforementioned distribution of ceramics from the northern to southern sector of Greater Nicoya, as well as possible trade with Ometepe

Island as well. Small Nahua groups like the Nicarao set up numerous trading enclaves for this purpose throughout Central America as far south as Panama (Fowler 1989:69-70; Lothrop 1926:7-8), and groups of Nahua elites are known to have taken control of communities in Mexico with similar goals in mind (Beekman and Christensen 1999:4).

The predominantly "Chorotegan" populations of the now-"Nicarao" communities might have reacted to the change in rulership in various ways that could have left little impact on the archaeological record. Their day-to-day existence may have changed very little as they continued to practise lifeways that had been maintained for several centuries–possibly living somewhat apart from the Nicarao interlopers in separate "enclaves", since ancient Nicaraguan communities were famous, after all, for being very dispersed.[16] Alternatively, we can also speculate that some members of the population may have even found it beneficial to assume "Nahua" identities themselves because their current identities were doing them a disservice, just as the Pathans studied by Barth sometimes found it beneficial to assume Baluch ethnic identities (Barth 1969a:25, 1969b:123-25; Emberling 1997:310). By the time of the Spanish *entrada* decades later, Nicarao communities might have indeed seemed very distinct from those of their Chorotegan neighbours. Yet such an assumed identity would not necessarily be reflected in a noticeable change in material culture. The markers of Nahua ethnicity might have been much too subtle to be perceived archaeologically–involving such things as hairstyles, dress or language, for example.

Whatever the specific nature of the Nicarao-Chorotega interaction (and our theories must of course remain speculative until the archaeological database in Nicaragua is better developed), the evidence seems to suggest that the occupation of Santa Isabel by a population with a common habitus continued in some fashion from the Sapoá Period into the following Ometepe Period. This being the case, we must therefore ask: how can we be certain

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[16]With respect to this idea, it is interesting to note that to this day in the Department of Masaya, the residents of San Juan de Oriente still refer to the residents of Catarina de Nimotiva, located on the other side of the main highway, as being "recent" arrivals–a tradition that may date back to pre-Conquest times (Manuel Román Lacayo, personal communication 2001).

that the "new" ceramics that appear during the Ometepe Period are not associated with the Chorotega, rather than the Nicarao? The answer seems to be that we cannot. The introduction of new Mesoamerican motifs on Castillo and Vallejo ceramics need not be ascribed to the presence of a new Mesoamerican group when another group with Mesoamerican origins is already in the area, and may have continued to maintain ties with the "old country", as migrant populations often do (Anthony 1990:904). The adoption of Mixteca-Puebla imagery, rather than being part of a strategy to promote Nicarao ethnic identity, may as easily be interpreted as the product of a Chorotega strategy to draw up that group's Mesoamerican origins to reaffirm and consolidate its own identity in the face of the economic threat posed by Nicarao intruders (Jones 1997:95). It is reasonable to expect that if the Nicarao moved into Nicaragua with the intention of controlling trade, then this might have happened at the expense of the Chorotega, who probably had their own ancient trade networks in place (Salgado 1996:296-300). A reaffirmation of the Chorotega's "Mesoamerican-ness" might have been part of a reaction to this, an attempt to bolster these old connections. This interpretation might be supported by the mutual association of both the Chorotega and the Mixteca-Puebla style with Cholula in Central Mexico, as well as by our placement of Vallejo, the most characteristically "Mesoamerican" of the Ometepe Period ceramics, in the Istmo Suite on the basis of its formal similarities with the more definitively "Chorotegan" types in that ceramic suite.

If we cannot confirm that the new Mexican motifs appearing on Ometepe Period pottery are markers of the Nicarao, neither can we confidently associate the newer of the two potting traditions tentatively identified in this thesis with this late-arriving Mexican group. While the minor tradition associated with the Isla Suite appears somewhat later in the chronological sequence than the major tradition that we have associated with the Istmo Suite (and, by association, with the Chorotega), the earliest type produced by the minor tradition, Granada, still appears during the Sapoá Period and therefore predates the arrival of the Nicarao in the Ometepe Period. This fact would seem to scuttle any attempt to argue that the new tradition is part of a new habitus introduced by the Nicarao–an argument that is, at any rate, not particularly well supported by the overall decorative variation of types like Luna and Madeira

at any rate (despite the provocative similarities of Madeira: Variety Unspecified and Castillo Engraved to Mexican pottery types). Whatever the origins of this potting tradition, its seems more indicative of southern than northern influences (Haberland 1992:116; but cf. Healy 1980:140).

None of the arguments in the preceding two paragraphs have been made with the intention of denying that certain ceramics *may have been* Nicarao ethnic markers. It is possible, for example, that Mixteca-Puebla designs *were* meaningless to the Chorotega and were introduced to Nicaragua by Nicarao elites, who might have co-opted or otherwise commissioned local Chorotega potters (to whom they might well have been married, if the Nicarao migrants were predominantly elite males) to produce the Mixteca-Puebla-style Vallejo pottery for their own purposes. It is also possible that the Nicarao, upon arriving in the Rivas area, demonstrated a taste for the exotic wares of Isla Suite potters (who were already supplying the Chorotegan residents with Granada bowls) that explains the presence of large quantities of Ometepe Period types like Madeira and Castillo-Unspecified Black at our site. (They might also have favoured the locally-made utilitarian vessels of the possible "workshop" that "specialised" in Rivas Red: Variety Unspecified and Sacasa Striated, an interpretation that could explain the relatively similar distribution of this material with the Ometepe Period diagnostics in the shovel tests on Mound 3.) These types might therefore have functioned as Nicarao "markers" even though they were not manufactured by them–a theory that finds some support in the fact that Madeira, Castillo and other Isla Suite types are common in the Rivas area but are virtually non-existent in Granada, a part of Nicaragua that remained under Chorotegan control until the Conquest (Salgado 1996:436, Table D.2). Yet even as these examples suggest possible ways in which ceramics *might* have marked Nicarao ethnicity, the point to be made here is that there is simply not enough evidence at present to distinguish a potential Nicarao habitus from a Chorotega habitus, and this makes it very difficult to distinguish between the Nicarao and Chorotega as ethnic groups in the archaeological record.

What we do appear to have evidence of at Santa Isabel is a continuous occupation that extended over the entire chronological sequence and which demonstrates only minor,

gradual changes (minor in comparison to the sweeping changes of the Sapoá Period, that is) in preferences for specific ceramic types, forms and sizes, despite the introduction or availability of a variety of new serving-ceremonial vessel types approximately mid-way through the sequence. We can probably associate this mid-way point with the transition between the Sapoá and Ometepe periods, and probably with the arrival of the Nicarao as well, though as we have seen, the *meaning* of the changes that we can see in the ceramic record are at present obscure. Assuming that the relatively static preference for ceramic forms and particular orifice dimensions demonstrated by the Istmo Suite is the product of Bourdieu's "durable dispositions", it would seem that, whoever may have been in charge at Santa Isabel at any given time, it may have been "business as usual" for the common folk.

There also seems to be evidence that a certain degree of mutual assimilation was going on over time. As we have seen, the ceramics of the Isla Suite, which when they first appear are very distinctive in terms of the frequencies of particular forms that they express, gradually move towards the norm that is expressed/established by Istmo Suite ceramics (most notably by Papagayo Polychrome and Ricardo Red). Since these are serving-ceremonial vessels that might be associated with elite consumption, this would seem to hint that if the Chorotega *peones* were becoming "Nahua-ized" as suggested earlier, then the same process might have been going on in reverse with respect to the elites–that is, they may have been adopting the preferences of commoners for certain ceramic types. Habitus is durable but not immutable, and over time, we might expect the different preferences and dispositions of commoners and elites to gradually merge to form a new habitus.

POSSIBILITIES FOR FUTURE RESEARCH

In the introduction to this thesis I noted that while I did not expect to solve the riddle of Nicaraguan ethnicity here, the identification of different patterns of habitus that might have provided the foundations for ethnic identities would represent a good start. Having reached the end of this exercise, and being of the opinion that I *have* identified at least a few patterns in the Santa Isabel ceramic material which are the products of habitus, I must admit

this does indeed represent only a "start" (hopefully, a good one!) and that most of the "conclusions" that I have come to are really just beginnings.

Ideally, a study interested in questions of habitus and operating sequences would benefit from a much more detailed database than was available for this specific project. As I have noted, the availability and quality of the data used in this study was limited not only by time but also by my own general unfamiliarity with the ceramic material (both in terms of types and of forms), as well as the fact that there was no opportunity to re-examine the material in the light provided by new insights that emerged through the study of the data that was collected. Given the opportunity to re-examine the ceramic assemblage, there are a number of things that could be done to improve this analysis. First and foremost would be the application of a more sophisticated classification system for describing ceramic forms. As noted, the five main categories that were used in the field to classify serving-ceremonial vessels–three types of bowls, jarras/jarrones and bottle-jars–were based on those described by previous ceramic studies (e.g., Healy 1980, Bonilla L. et al. 1990) that focussed more on systematic descriptions of types rather than shapes. However, these categories are in many ways inadequate to the task of discussing potentially important variances or similarities between types that might reflect habitus-influenced choices, a problem that really only became clear following the later comparison of the limited number of rim profile drawings made during the 2001 field season. As we have seen, the composite silhouette bowl category really seems to collapse two or three different types of bowls: flat-bottomed forms that seem to be limited to the Isla Suite and bowls with rounded bottoms (the majority carinated, but some not) that are more typical of the Istmo Suite, though they are found in the other ceramic suite as well. Conversely, Unspecified Black bottle-jars and Vallejo superhemispherical bowls with everted lips may in fact represent very similar forms that might be fruitfully classed together for various types of analyses. The problem of distinguishing between forms in the utilitarian vessel category is potentially even worse, as we have seen. I suspect that these types of problems cannot be solved without first re-examining the entire ceramic assemblage and collecting the rim profiles from a much greater percentage of the sample than was possible in 2001. These profiles can then be used as the basis of a new

classification system, an approach that should avoid many of the problems generated by imposing preconceived notions of form on the assemblage, and which might allow for the identification of subtle differences in shape that might be otherwise overlooked.

This re-analysis would also provide an opportunity to see if there are other changes over time in the formal attributes of Isla Suite ceramics (such as changes in average orifice diameters, for example) that might correlate with the apparent changes in preferences for vessel forms and therefore support the argument that the Isla Suite responded, for whatever reason, to the preferences of Santa Isabel ceramic consumers. It goes without saying that our ability to discusses such temporal changes will be greatly enhanced once the Santa Isabel carbon samples have been dated, particularly since this might allow us to more specifically correlate the stratigraphic changes in each of the various excavated units and therefore identify these with the Sapoá or Ometepe periods in more than just a general fashion.

The identification of various potentially new ceramic types like Unspecified Black, Ricardo Red and Unspecified Buff might also be confirmed (or at very least supported) by a re-examination of the Santa Isabel material. Even a visual comparison of the composition of sherds of Unspecified Black with Castillo Engraved and Ricardo Red with Papagayo Polychrome might help to answer the questions raised here regarding whether or not these new types are related to known types. Petrographic analysis and NAA analysis of samples of Santa Isabel material at some point would also be useful in confirming relationships between types based largely on decoration, especially since the findings of previous NAA analysis of material recovered elsewhere were used as the basis for creating the different compositional groups that were compared in this study. NAA sampling of the utilitarian vessel types would also be useful, since this could potentially clarify the relationship between the utilitarian vessels and the Istmo Suite serving-ceremonial vessels, which I have suggested are the products of the same potting tradition.

Looking beyond the Santa Isabel site specifically, it would be enlightening to compare the ceramic material recovered by the University of Calgary project with that excavated by previous workers in order to determine if the patterns of preference identified here are mirrored elsewhere. A comparison of our material with that excavated by others in the

immediate vicinity–such as the material from the previous Santa Isabel excavations by Willey and Norweb and by Niemel–should indicate whether or not such things as the particular frequencies of individual vessel shapes found within types or the preference for similarly-sized orifices are site-wide phenomena or are unique to our sample. If the patterns do appear in other Santa Isabel assemblages, they would support the argument for a common habitus at the site. The next step would be to compare our material with samples excavated somewhat further afield, such as material excavated by Haberland and by Willey and Norweb on Ometepe Island–an area associated with both the Chorotega and the Nicarao–or by Salgado in Granada–an area associated with the Chorotega specifically. All of these comparisons would likely require firsthand re-analysis of the material, since information on aspects of vessel form are not commonly reported (or even necessarily collected).

A comparison with Ometepe Island collections has the potential to be particularly useful given the association of our Isla Suite material with that area, and patterns of Isla Suite materials on the island that reflect the patterns for this suite discernable in the earlier strata of Mound 3 would seem to support the argument that this material was produced on the island. If similarities in patterns are found in a comparison of the material from Granada, this would support the argument that the patterns discernable at Santa Isabel are based on the Chorotega habitus and that this habitus continued, more or less uninterrupted, throughout the entire chronological sequence of our site. On the other hand, differences between the Rivas and Granada material might suggest subtle ways in which the habitus of the Nicarao *did* affect the Chorotega habitus at Santa Isabel: if, for example, the conservative preference for certain ceramic shapes that is maintained from the Sapoá Period into the Ometepe Period at Santa Isabel is *not* found in Granada, this might suggest that the presence of Nicarao rulers caused their Chorotega subjects to react by becoming *more* conservative and "set in their ways" as a means of maintaining their identities, as often happens with ethnic groups under stress (Jones 1997:120-21).

Ultimately, it would be useful to compare Nicaraguan material with material derived from archaeological work in Mexico in areas that might have provided the source populations for the migrant groups that eventually made their way to Nicaragua, as well as with material

from potential stops along the way, in countries like El Salvador and Honduras. We need not even confine our search to areas where the ceramics "look" similar: if patterns of preference for certain aspects of ceramic form truly are produced by the durable dispositions of habitus, they might even be discernable in an archaeological assemblage composed of entirely different ceramic types. However, there is still much work to be done within Nicaragua itself regarding the relationships between the different Mexican migrant groups, not to mention the relationships between these groups and the more "ancient" populations of the area, a subject that has received only passing attention in this thesis. And while we seem to be able to identify changes in the archaeological record that can be attributed to the Chorotega habitus–and which can therefore, *in this particular case*, identify the presence of an ethnic group that we might call "Chorotega"–whether or not we can archaeologically identify an ethnic group that we might call the "Nicarao" still remains to be seen, and will likely require the analysis of variation in more artifactual classes than ceramics alone. In the long run, it might be more practical to address this problem first–to see if we can actually identify our intrepid Nicarao migrants before we go searching for their roots.

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