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A Reassessment of the Ecuadorian Formative

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ESCUELA SUPERIOR POLITÉCNICA DEL LITORAL

THE CONCEPT OF FORMATIVE

It was James Ford who established the basic concept and definition of the New World Formative. He noted that the definition of the Formative by Gordon Willey and Philip Phillips (1958: 144–45) was identical to what Gordon Childe had called Early Neolithic. Ford wrote:

“Formative” has come into use to denote what in the Old World would be called early or initial Neolithic. Neolithic would be a perfectly good name, but Americanists have been very reluctant to commit themselves to any terminology that would seem to imply Old World relationships.

Willey and Phillips (1958, p. 144) have defined the Formative stage “by the presence of maize and/or manioc agriculture and by the successful socioeconomic integration of such agriculture into a well-established sedentary village life.” This is a parallel to Childe’s definition for the beginning of the Old World Neolithic as a point in which man became a food producer rather than a predator. (1969: 4–5)

But in the “nuclear area” of ancient America sedentism, agriculture, polished stone tools, and ceramics did not simultaneously occur as expected. “Both in the Mexican highlands and the Peruvian coast, agriculture was practiced many centuries before such commonly accepted Formative traits as ceramics and polished stone tools came on the scene” (Ford 1969: 5). Ford also pointed out that although small New World Formative settlements seem to have been sedentary, they might not have represented “well-established village life,” meaning that “the population explosion had not started.” Besides, it was assumed by Ford and others that New World early ceramics were not being made by agricultural people at all but were manufactured and spread by coastal groups who subsisted mainly

on shellfish. Archaeological investigations on Ecuadorian Formative sites during the last two decades have completely upset this conceptual “apple cart,” however.

Continuing his critical analysis of the Formative on a continental scale, Ford points out that the marriage of agriculture and ceramics occurred at different times in different parts of the New World. For these reasons, he suggests that the Formative be defined more loosely as

the 3,000 years (or less in some regions), during which the elements of ceramics, ground stone tools, handmade figurines, and manioc and maize agriculture were being diffused and welded into the socioeconomic life [of peoples from Peru to the northeastern United States, and that at the onset of these changes] all these people had an Archaic economy and technology; at its end they possessed the essential elements for achieving civilization. (Ford 1969: 5)

Although we may agree with Ford’s proposal in more general terms, we ought to consider that most archaeologists working in the New World during his era, had a different idea of the actual development reached by the societies classified as having an Archaic economy or possessing the essential elements for achieving civilization. Notably, our present knowledge of Formative societies is based on data unavailable to Ford in 1969.

Many archaeologists felt that the Formative concept should utilize a tripartite division, following the classic concept in Mesoamerican archaeology: Early, Middle, and Late Formative. But Ford noticed that, while this division might be useful for Mesoamerica, it would not hold true and is inappropriate for the entire American Formative. From the data available to him in the mid-1960s, he found that a more useful division would be a bipartite division based on the Colonial Formative and the Theocratic Formative.

The Colonial Formative (3000–1200 B.C.) was “a period in which ceramics were being distributed over the Americas, apparently by the establishment of sea-borne colonies. [The Theocratic Formative (1200–400 B.C.), on the other hand,] is rather sharply defined by the first appearance of mound structures and other appurtenances of organized politico-religious control” (Ford 1969: 5). The two most salient examples of the Theocratic Formative were the Olmec in Mesoamerica and Chavín in the Central Andes. Although at the time the Ecuadorian Chorrera ceramic style compared favorably with Olmec and Chavín, no contemporary evidence was available for Chorrera mounds or other types of structures that might have suggested a form of “organized politico-religious control.” Therefore, the bipartite division for the Formative suggested by Ford was translated into Early Formative and Late Formative in Ecuador (Fig. 1) (Meggers 1966: 34–66; Zevallos and Holm 1960).

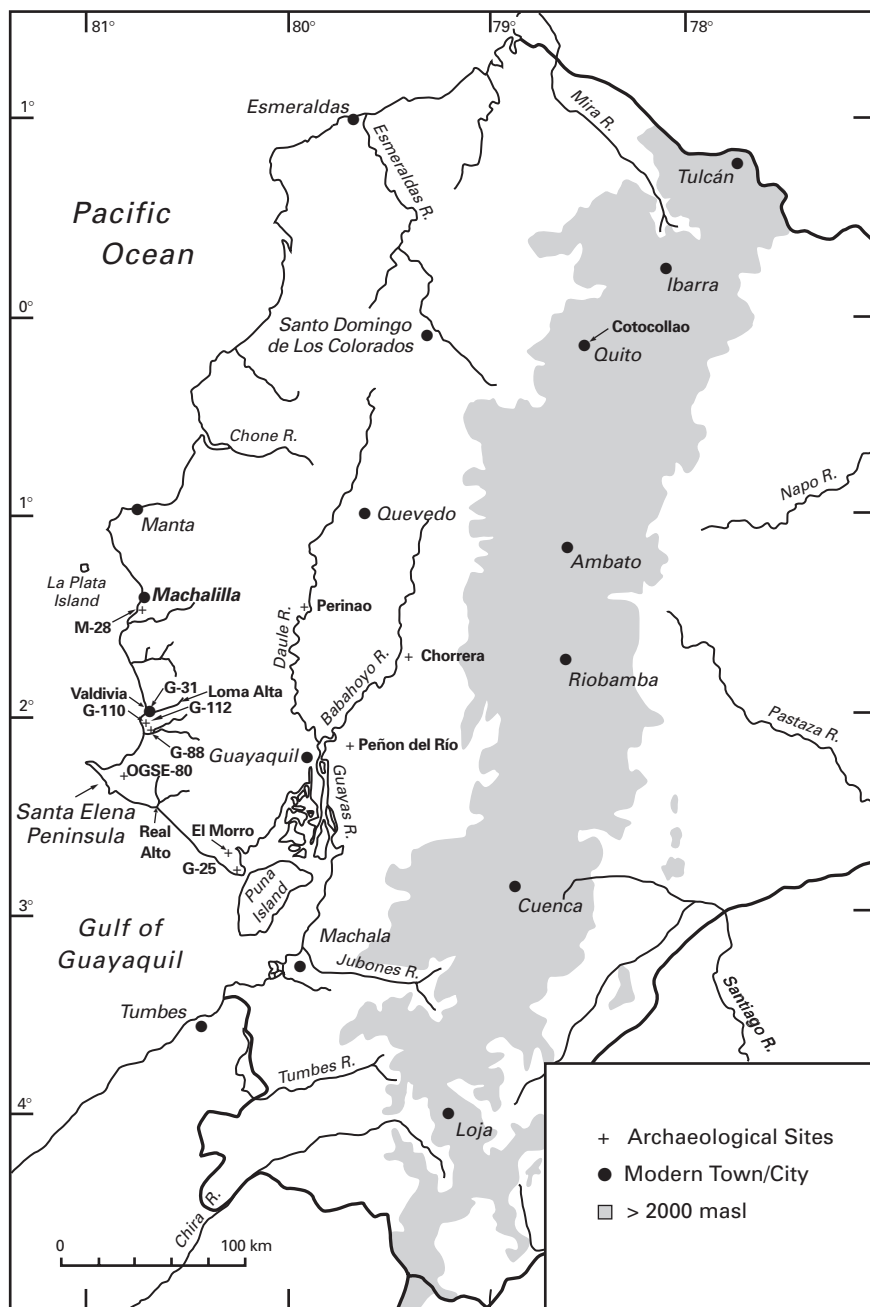


Fig. 1 Map of Ecuador with sites discussed in text.

DEFINITION OF THE ECUADORIAN FORMATIVE

In defining the Ecuadorian Formative, Meggers, Evans, and Estrada (1965: 9–14) considered the environmental characteristics of the southern Ecuadorian coast. They focused on the area between Machalilla and Tumbes as a well-defined environmental zone, very different from those of the Pacific littoral of Colombia and the northern coast of Ecuador, which range from yearround tropical rains in Colombia to heavy seasonal monsoons in northern Ecuador and are quite distinct from the Peruvian desert coast south of Piura. They point out that the Caribbean coast of Colombia is in certain aspects similar to the Guayas coast; not only is its vegetation xerophytic, but its shore is also in a similar stage of development, offering active mangrove flats as well as old dried-up bays. They also point out the seasonal alternation between rain and drought. Finally, they argue that Early Formative sites appear only on the Caribbean coast of Colombia and on the coast of southern Manabí and Guayas provinces in Ecuador.

Meggers et al. (1965: 107–109) suggested that although Valdivia ceramics exhibit considerable changes through time, they are sufficiently distinctive from other pottery phases in the area to build a sequence for the earliest known ceramics in the New World. To characterize the Valdivia phase without benefit of sufficient evidence, they tried to reconstruct intrasite settlement patterns, house construction, and patterns of subsistence at the type-site (G-31), Palmar Norte (G-88), and Punta Arenas (G-25). They based this reconstruction on their notion that the main subsistence resources of Valdivia were acquired by collecting in the littoral, with some marginal deer hunting. They inferred that terrestrial plant food sources also must have been exploited because of the practices among recent food-gathering groups and on comparative evidence found at sites of the Preceramic period of the adjacent dry coast of Peru.

It was Emilio Estrada (1958: 21) who wrote that Valdivia appeared to be related to other Ceramic cultures older than 1850 B.C., in Mesoamerica, the Amazon delta, and Peru. He also noted that the type-site covered an area of about two hectares on the hillside, overlooking the present village and a luxurious river valley with water, even during dry periods. He notes that a great number of agricultural products were presently grown toward the interior of the Valdivia River valley and that the valley was largely populated during the Chorrera, Guangala, and later periods. Estrada assumed that Valdivia was pre-agricultural, although a variety of data, including depictions of ceramics, supported the belief that later cultures were agricultural. Lacking a survey of the Valdivia valley but aware that Chorrera had been found by Bushnell (1951) at the Engoroy site on the Santa Elena peninsula and by Huerta Rendon (Estrada

1958) in the Guayas basin, Estrada suggested that all Early Formative sites would be close to the seashore and ancient mangrove stands, whereas Chorrera sites might be anywhere on the Ecuadorian coastal plain. He suggested that archaeologists should look for Valdivia occupations along the coast, where evidence of ancient bays existed, and he pointed to the hillsides of the coastal *cordilleras* that bordered such bays as the likely location of most Valdivia sites. He also suggested the possibility of Valdivia sites in the Guayas and the Salado River deltas, deep within the Gulf of Guayaquil. Meggers et al. (1965: 5–14) and Meggers (1966: 34–54) also concluded that Early Formative sites in Ecuador would only be along the coast.

In fact, regions between the southeastern United States and northwestern South America were thought to have the only significant Early Formative occupations. Because all early ceramic sites, especially those with fiber-temper pottery, had been found at the seashore or close to mangrove stands. But, regional surveys in the interior valleys later revealed that Early Formative period sites also began to appear inland, at great distance from the shore (Damp 1988: 45–55; Marcos 1988: 75–77; Raymond 1989, 1993).

To define the Machalilla phase of the Early Formative period, Meggers et al. (1965: 110–146) used the same methodology for defining the Valdivia phase. The sites studied were the Machalilla cemetery (M-28), La Cabuya (G-110), and Ayangué Bay (G-112). They integrated ceramic-type seriation, the evaluation of settlement patterns, the possible environmental setting at the time, as well as any evidence that suggested forms and means of production. Unfortunately, they failed to complete their monograph on Late Formative Chorrera.

It may be argued that the evidence Meggers et al. considered was not enough to determine the life styles of Formative societies in coastal Ecuador. It is important, however, to take into consideration that their effort to integrate ceramic changes with an evaluation of settlement patterns, environmental reconstruction, and the economic indicators operating on Formative societies was a contribution toward focusing research in the right direction. It is precisely these geographical and social considerations that must be reexamined today, in the light of present knowledge, in order to explain what constituted Ecuadorian Formative societies.

REASSESSING THE FORMATIVE CHRONOLOGY

To reassess the Formative chronology of Ecuador, we should review the definition of the Archaic and Formative stages according to Willey and Phillips (1958: 104–181). It is important to determine in which way the Vegas, Valdivia, and Machalilla archaeological complexes, unknown to them in 1958, conform

to their definition of the Formative. To do this, it is necessary to take into consideration Meggers et al.'s interpretation of the Early Formative phases of Ecuador and contrast their notions with the original theoretical framework. Then a reassessment of new data available for Vegas, Valdivia, Machalilla, and Chorrera (in light of the original definition of Archaic and Formative periods of development) can serve as a working framework for the coastal Formative. Afterwards, a sequence for the whole Formative of Ecuador can be offered.

The Archaic

Willey and Phillips (1958: 104–139) defined the *Archaic* as “the stage of migratory hunting and gathering cultures continuing into the environmental conditions approximating those of the present.” They suggested that the large Pleistocene mammals became extinct by the beginning of the altithermal period and that their disappearance produced a shift in the food procurement patterns of the lithic-stage peoples. Now humans had to depend on smaller and more varied fauna and on gathering.

According to Willey and Phillips, examples of Archaic sites in Mesoamerica, Central America, and the Andes are the Nogales phase in Tamaulipas, Cerro Mangote in Panama, and Huaca Prieta in the Chicama valley of the Peruvian north coast.

In 1964, Edward P. Lanning led a team of students from Columbia University on a survey of the Santa Elena peninsula in Ecuador. They located several Preceramic sites and test excavated one on the Vegas River. It is now the most thoroughly studied Archaic settlement of coastal Ecuador (OGSE-80), thanks to excavations by Karen Stothert (1985, 1988) and physical analyses of burials by Douglas Ubelaker (1988: 105–132), faunal remains by Thomas Chase (1988: 71–178) and Elizabeth Wing (1988: 179–185), and plant remains by Dolores Piperno (1988: 203–224).

The Vegas complex conforms to Willey and Phillips's general definition for the Archaic. The faunal remains indicate a dependence on small and varied fauna, such as “lobo” (*Dusicyon sechurae*), reptiles, rodents, and the small bush deer (*Mazama* sp.), catfish, crabs, and estuarine shell species such as *Anadara tuberculosa*, among other diverse fauna. There was an apparent importance on gathering mangrove shellfish and some plant foods, and there are indications that some domesticates were grown in household gardens. According to Willey and Phillips, it was in this stage that sites began to yield large numbers of stone implements and utensils assumed to be connected with the preparation of “wild” vegetable foods. Vegas is one site where this hypothesis seems to hold true because of numerous stone implements, such as mortars and pestles—*manos*

and *metates*—as well as partially polished chipped stone axes and adzes. Shell utensils, including ladles, scoops, hoes, and pickaxes, probably were employed in the collection, preparation, and consumption of wild, managed, or domesticated food. Remnants of plants, such as the bottle gourd (*Lagenaria siceraria*) and phytoliths of corn (*Zea mays*), confirm the experimental handling of plant domesticates and suggest the possibility of initial horticulture at dooryard gardens.

The initial cultivation of corn probably took place around 6000 B.C.¹ on the Santa Elena peninsula and at around 4300 B.C.² at Lake Ayauchi in the southeastern Oriente of Ecuador (Pearsall 1995: 127–128; Piperno 1988: 203–224, 1990, 1995). Thus, it seems that Archaic-period populations were engaged in an early but long-term process of experimentation in plant domestication.

There are estimates that place the original size of the Vegas site midden (OGSE-80) at 1.25 hectares (13,000 m²), reduced by erosion to 2,250 m², not allowing for an evaluation of possible settlement size at any given time (Stothert 1985: 614). The long period of occupation of the site also makes it difficult to estimate the size of the Archaic communities who populated OGSE-80.³ In Stothert's words (1985: 631): "The Vegas social groups were small, but the local community probably had relations with similar peoples across a wider region. Preceramic refuse has been found near Morro and the Guayas estuary about 75 km from Site 80" (Spath 1980).

At Real Alto, halfway between Vegas and El Morro, evidence of a terminal Archaic occupation appears to underlie the Valdivia phase 1a occupation of the site. House floors at structures 58, 59, 60 and 61 found close to the intersection between trenches A and C, did not have any associated sherds, and the only material culture on them was Vegas-like, plus some sandstone spindle whorls. Two radiocarbon assays from that area, GX 5267 and ISGS 448, suggest, once calibrated, a period dating anywhere between cal 4800 and 4000 B.C. which could represent a Terminal Archaic underlying the Valdivia phase 1a occupation,⁴ which dates between cal 3900 and 3500 B.C.

Henning Bischof and Julio Viteri Gamboa (1972) presented evidence for a Preceramic occupation at the type-site, underlying a deposit that contained

¹ Dates have been calibrated from original ¹⁴C assays, 7000 BP.

² Radiocarbon assays measure to 5300 BP.

³ However, the Vegas occupation could have been between the 15 to 20 people allotted by MacNeish (1964) to macrobands, or around 10 to 100 people, as in Blanton's (1972) definition of *hamlet*.

⁴ Damp discarded a third date, GX 5269 (6195 BP), which calibrates to 5322–4901 B.C. at 68.3%. However, its lower range may date the same occupation.

pottery sherds distinct from the Valdivia ceramics found in the overlying strata; they named this complex San Pedro. However at Real Alto, Damp (1988) suggested that the San Pedro Ceramic could be associated with Valdivia Phase 2 ceramics. This ongoing debate can only be solved by further excavations at Valdivia and Real Alto.

The Early Formative

Interdisciplinary research at Real Alto (OGSECh-12) and Loma Alta (OGSEMa-182) further shows that although the initial Valdivia nonceramic component is similar to Vegas, village size, early ceramics and an increase in identifiable agricultural remnants speak for a society with a sedentary village life. Willey and Phillips (1958: 146) define the Formative by “the presence of agriculture, or any other subsistence economy of comparable effectiveness, and by the successful integration of such an economy into well-established, sedentary village life.”

Of the nearly 100 Valdivia sites known today, most are neither near the sea nor old mangrove salt flats⁵; they all present indications of a “well-established sedentary village life.” The earliest Valdivia sites, like Loma Alta, Perinao, Punta Concepción and Punta Tintina, are found both inland and on the coast: Loma Alta, on the inner Valdivia River valley; Perinao, on the Daule River on upper Guayas basin; and Punta Concepción and Punta Tintina on bluffs overlooking the sea. Three basic pottery vessel shapes were used during Valdivia Phase 1 of the eight-phase Valdivia sequence proposed by Betsy Hill (1975).

We are dealing with societies of a certain minimal complexity and stability whose population sizes and gross groupings have been made possible by specific food economies, but, since these are preponderantly agricultural, we are also dealing with a historical phenomenon—the diffusion or diffusions, of native American agriculture. Pottery-making, weaving, stone carving and a specialized ceremonial architecture are usually associated with these American Formative cultures. (Willey and Phillips 1958: 146)

Around the time of Phase 2b of the Valdivia sequence, major long-term occupation sites like Real Alto began to show a more complex intrasite settlement pattern. There is a change from the U-shaped elliptical village of Phases 1a and 1b, populated by 150 to 250 inhabitants, to a rectangular preurban cen-

⁵ The most important mangrove-oriented sites in Ecuador are El Encanto (Porrás 1973) and La Emerenciana (Staller n.d.). However, further research is needed to establish if their inhabitants produced or acquired the Valdivia ceramics found in these shell midden.

ter, with a central plaza exhibiting four mounds topped by politico-religious structures. The population during Phase 3 increased from about 1,250 to 1,800. Charred plant remains and phytoliths point to agricultural practices involving plants like *achira*, jack bean, runner bean, cotton, peppers, and corn (Zevallos 1971; Zevallos et al. 1977). By Valdivia Phase 3, 30 different pottery vessel shapes had been identified.

These elements are not linked to American agriculture through any inner causality, and some of them are often found in contexts that are non-agricultural. Seldom, however, are American agricultural societies lacking in all of them. There are insufficient data as yet to establish the relative chronological appearances of these trait complexes in various New World areas, but it is unlikely that they exploded concurrently in one locality to effect a sudden and sweeping cultural revolution. Their significance is less one of origins than of function. It is a practical certainty that the origins of Formative stage cultures will be found to be extremely complex and diverse—the gradual assemblage of elements over considerable periods of time and over wide areas to produce cumulative and patterned results. (Willey and Phillips 1958: 146)

Inland earliest Valdivia. In Ecuador, it is undoubtedly easier to find archaeological sites on the coastal plain, especially in the area between the coastal cordilleras and the sea, than further inland. There, most exposed surfaces date from the tertiary, with a narrow and thin quaternary deposit at valley bottoms. South of the equator in Peru, ground cover is thinner. It allows for less difficult and more successful surveys. Whereas north of the equator and in the Guayas basin, the deep quaternary alluvium deposited by meandering tropical rivers has tended to bury most Formative sites. The thick tropical forest cover and/or plantations make archaeological survey in the area a challenging and problematic proposition (DeBoer 1996; Marcos 1988; Stahl n.d., 1995).

In 1991 and 1992,⁶ coastal surveys of pipeline right-of-ways were conducted from Manta to La Libertad, from La Libertad to Pascuales north of Guayaquil, and from there to Quevedo, and to Santo Domingo de Los Colorados. Another right-of-way was established from Santo Domingo to Esmeraldas (see Fig. 1). In these surveys site distribution consistently showed that all Early and Middle Formative sites occurred along valley bottomlands, whereas Late Formative sites were also located on the bluff, up to 40 m above the valley bottom.

⁶ Contract between Escuela Superior Politécnica del Litoral and Petrocomercial, 1990–1991.

Excavations at (a) Perinao in the Colimes de Balzar area of the Guayas basin, (b) at Loma Alta, 12 km deep in the Valdivia river drainage, and (c) Real Alto 3.5 km from the seashore but overlooking the floodplain of the Río Verde demonstrate the inland orientation of the earliest Valdivia people (Lathrap, Marcos, and Zeidler 1977; Norton 1982; Raymond, Marcos, and Lathrap 1980). It is important to point out that coastal groups that subsisted mainly on shellfish occupied none of these sites. Furthermore, the on-site changes in settlement pattern displayed throughout Real Alto's history, clearly speak for a well-established village life, the development of urban lifestyles, and the rise of civilization at the end of the Early Formative period (Marcos 1993; Zeidler 1991).

The rise of civilization during the Early Formative of Ecuador was also characterized by the establishment of trade networks. Kleppinger, Kuhn, and Thomas (1977) have shown that at Real Alto, coca chewing was a ritual activity since Valdivia Phase 3. Spinning and weaving were an established practice by Valdivia Phase 6 (Marcos 1973), and the presence of *murices* associated with spindle whorls suggests the use of dyes since that period (Marcos 1995). *Mogote* incised and punctate sherds, associated with Valdivia Phase 7 ceramics and obsidian blades in the northeast sector of Real Alto, have been shown to be quite similar in paste and decoration to Early Cotacollao incised and punctate ceramics in Quito. Furthermore, the associated obsidian blades have been determined to come from the source at Quiscatola in the Valley of Quito (Marcos, Álvarez, and Bigazzi 1988). To these and other trade items, we must add the Valdivia occupation of La Plata Island as evidence for open-sea navigation at least from Valdivia Phase 3 (Marcos and Norton 1981, 1984).

Early Formative settlement patterns. In Ecuador, Early Formative settlers maintained a strategy common to early farming societies the world over: occupation of the best lands for agriculture. These are the rich alluvial deposits of river floodplains. Many of the regional surveys in coastal Ecuador show that sites are found in a dendritic pattern of settlement, along riverine systems and their floodplains. Depending on the width of the valley and the floodplain, Formative farmers settled on the bottomlands, the surrounding bluffs, and, in a few cases, hillsides. Formative settlements varied in size. While some size differences appear to have temporal implications, a good number seemed to correspond to a hierarchical scheme (Alvarez, Tobar, and Marcos 1992; Raymond 1993; Schwarz and Raymond 1996; Tobar n.d.; Zeidler 1986).

It was evident that during the first period of occupation, Real Alto was a small, circular to elliptical hamlet, approximately 150 m in diameter. This intrasite settlement pattern lasted approximately 1,400 years, covering Valdivia Phases 1a

to 2a (cal 4400–3000 B.C.). Its 50 to 60 inhabitants apparently lived in 12 to 15 small, single-family huts. These were elliptical and were constructed possibly of bent poles and thatched with palm fronds or straw. The archaeological material culture and the biological data from this period suggest an endogamic community with a restricted mode of exchange in the area. To complete the similarity with ethnographic circular villages, the men might have slept in a larger (8 x 6 m) central, and more substantial wooden pole structure, with daubed walls and a thatched roof (Damp 1988; Marcos 1993: 22).

During the second period, which lasted some 600 years (cal 3000–2400 B.C.), there were important changes in the intrasite settlement patterns and community development. During Valdivia Phases 2b and 3, a major change took place in Real Alto. The circular hamlet gave way to a rectangular settlement with a central plaza. It covered approximately 16 hectares, with 90 to 100 residential structures, for approximately 600 to 1,100 inhabitants. In the plaza, four mounds topped by public buildings, looked down on the open space. The two largest mounds, A (or fiesta-house mound) and B (or charnel house mound), faced each other in the northern third of the open plaza. Mounds A and B and the space between them formed the ceremonial precinct. The two smaller mounds, C on the northeast sector of the plaza, and D on the southwestern side, appear to have been designated for meetings and ceremonies by the initiated few in each of the village halves. Real Alto can be classified as a *regional center* in Parsons–Blanton terminology (Blanton 1972).⁷

The size and substance of the village houses also changed (Álvarez 1989) from the smaller single-family huts described above to elliptical solid structures, with upright post walls, covered with daub, and topped by large thatched roofs. These structures were between 10 m and 12 m on the longer axis and between 7 m and 9 m on the shorter one, and were apparently occupied by extended families (Zeidler n.d.: 73–99). The substantial increment in population and other biological evidence suggest an increase in social and economic interaction at the regional level.

The third period corresponded to the 600 years that elapsed between Valdivia Phases 4 and 7 (2400–1800 B.C.) when part of the on-site population moved from a central location at Real Alto to 5 satellite *hamlets*, or “daughter” communities, along the Río Verde and Río Real. Each of these communities con-

⁷ According to its size, Real Alto is between large nucleated village and secondary regional center in Parsons–Blanton site typologies. If Damp’s hypothesis that the Centinela site is Real Alto’s mother community is correct (Damp 1988: 48), then Centinela (OGSEh-019) could be classified as a primary regional center.

sisted of five to ten houses with 40 to 100 inhabitants. At Real Alto, as in the daughter communities, house size remained roughly the same as in the previous period. In the north of Real Alto, no houses were built, but a large number of bell-shaped storage pits were constructed. The number of residential structures for this period is estimated to number between 60 to 80, with some 500 to 1,000 inhabitants.

Real Alto at this time exhibited an intrasite and a regional settlement pattern that could classify it as a *large dispersed village*, or as a *regional center* in Parsons–Blanton site typology. Craft specialization by *barrios* and evidence of elite control of production could explain the building of a series of bell-shaped storage pits in the north segment and the alienation of polished stone adzes and axes within civic–ceremonial structures topping mound B during this period.

During Valdivia Phases 8a and 8b (1800–1450 B.C.) major regional centers appeared in deep inland valleys, including San Isidro, in the province of Manabí and San Lorenzo del Mate, in Guayas province, and near the coast at La Emerenciana, in El Oro (Staller n.d.). During this period, the great changes that led to the consolidation of the Formative process were crystallized.

The Real Alto settlement pattern and sociopolitical organization suggested by Zeidler (1991, n.d.: 255–258) conforms nicely with the changes in forms of production (Marcos 1993: 19–26) and with proposed stages of Valdivia colonization and site evolution for the Azucar/Zapotol/Río Verde drainage, referred to as the Chanduy valley (Damp 1988: 50–52).

The original notion that all Early Formative sites were small hamlets close to the sea or ancient mangrove stands does not hold up in the face of the information presented above. Consequently, a new site-typology and settlement pattern definition are needed to characterize Formative societies.

The Middle Formative

Many authors have begun to use a tripartite chronological division (Beckwith n.d.: 469; Lippi n.d.a; Marcos 1986; Schwarz and Raymond 1996; Zeidler 1994: 205) of the Ecuadorian Formative, adding a Middle Formative period to the former two-period scheme referred to above. Each period, of course, must be defined broadly if it is to be used meaningfully to align Formative societies chronologically outside the original southwestern Ecuadorian chronological scheme. The broad dispersal of the Machalilla style in coastal Ecuador and its patent influence on ceramic styles of other areas of Ecuador may justify the use of the term *Machalilla* to identify a Middle Formative period ranging between cal 1400 and 850 B.C.

Lippi (n.d.a) has argued convincingly that the Machalilla style developed

out of the Valdivia style. Nowhere is this more explicit than in the Valdivia 8b ceramics of El Oro province (see below), where a Valdivia–Machalilla transitional style can be identified (Staller n.d.).

Although archaeological surveys in several areas of Ecuador have provided information about different forms of regional settlement pattern during the Formative and later periods, little information on intrasite settlement exists for sites of the Middle and Late Formative. At the Middle Formative site of Cotocollao, for instance, where excavations were conducted over a long period of time, salvage archaeology constraints did not permit a very full exposure of the lacustrine Formative village mode of settlement. Post molds in some excavation units could be interpreted as evidence of a combined part palafittic/part on-shore settlement typical of lacustrine Neolithic villages (see Villalba 1988: 63, figs. 34, 35).

The earliest macrofossil evidence for corn dates to the Middle Formative (Lippi, Bird, and Stemper 1984). Earlier evidence, during the Preceramic at Las Vegas (Piperno 1988) and Valdivia (Pearsall 1988), consists of microfossil remains identified through phytolith analysis. The initial presence of charred corn in Middle Formative sites and in larger quantities during the Late Formative (Pearsall 1980) reflects, most likely, the success and expansion of intensive agriculture. Possibly by then, most corn was dried before processing, whereas during the Preceramic and the Early Formative, the smaller quantities grown may have been consumed green.

The Late Formative

G.H.S. Bushnell (1951) excavated for the first time what we know today as Late Formative ceramics in the Santa Elena peninsula. The single-component site was located on the Engoroy hill in La Libertad. Bushnell also defined Guangala and Manteño cultures, but because he did not find these components stratified, he placed Engoroy late in the sequence between Guangala and Manteño. It was not until Estrada (1958) published similar material from an excavation conducted by Evans and Meggers (1957, 1982 [1971]; Evans, 1957) at the Hacienda Chorrera that the proper identification of Engoroy–Chorrera as a Late Formative phase was recognized.

Today, we must add to the study of Engoroy and Chorrera sites, and/or ceramics, the work of Aleto (n.d.), Beckwith (n.d.: 470), Bischof (1982 [1971]), Paulsen and McDougle (n.d.), Simmons (1970), and Zedeño (n.d.). However, as Beckwith points out, “Perhaps one of the most pressing needs in research on the ceramics of the Late Formative period of southwestern Ecuador is the publication of ceramic material from the Guayas basin, in particular the mate-

rial from the type site of La Chorrera.”

Chorrera and Peñon del Río, so far, provide the only information available on the Formative occupation of the lower Guayas basin. The excavations conducted at Hacienda Perinao and La Cadena–Quevedo (under the auspices of the Liechtenstein Foundation) give a glimpse of what appears to have been a continuous Formative occupation in the upper Guayas basin. The available evidence shows that it may have begun in the earlier Valdivia phases (Porras 1983; Raymond et al. 1980; Reindel 1995). A Valdivia 2a occupation at Hacienda Perinao was covered by an overburden of 8.5 m of stratified alluvium and human occupation deposits, which make it a site worth excavating in detail. At La Cadena, Machalilla and Chorrera deposits overlay Valdivia 6, 7, and 8 occupation layers, and all were surmounted by mounds constructed during the Regional Developmental and Integration periods.

FORMATIVE CERAMICS

Originally, Early Formative ceramics from Ecuador were viewed as exotic, conforming to the notion of a Colonial Formative proposed by Ford (1969: 5). Hypotheses for the *Jomon* (Japanese) origin of Valdivia ceramics and for a possible Mexican origin of the Machalilla style (although the Mexican affiliation of Machalilla ceramics presents problems) were presented by Meggers et al.:

Reconstruction of the origin, interrelations and ramifications of the Valdivia and Machalilla Phases has moved us beyond the boundaries of available evidence into the realm of hypothesis. Although we hope that some of the interpretations will be confirmed by future work, others will undoubtedly be altered. If calling attention to the potential importance of Colombia and Central America in the origin and dissemination of certain South American cultural complexes serves to stimulate fieldwork in these areas, our efforts will have been well spent regardless of whether or not the hypotheses are upheld. (1965: 157–158)

Donald Lathrap, on the other hand, proposed a different source of origin for the Early Formative ceramics of Ecuador. He stated that Puerto Hormiga and Valdivia ceramics showed substantial differences so that neither the earliest Colombian nor the earliest Ecuadorian pottery could be antecedents of the other. He suggested that an earlier focus of indigenous ceramic development should lie somewhere between Manaus and the mouth of the Amazon (Lathrap 1970). Roosevelt's (1995) discovery of pottery dating, possibly, to the sixth millennium B.C. at the site of Taperinha near Santarem seems to support Lathrap's

hypothesis. Stylistic comparisons between Early Formative ceramics, however, should be treated with caution, for their similarity might come from the skeuomorph representation of antecedent containers.

Most Early Valdivia vessels seem to be skeuomorphs of gourd, basket, and possibly rawhide containers. These gave an initial imprint to the Valdivia style, which developed locally into a more complex style in later phases. As noted above, Lippi (n.d.b) argued that the Machalilla pottery style developed from Valdivia, and the Valdivia–Machalilla transitional ceramic complex found by Staller around La Emerenciana clinched the argument. The development of the Engoroy and Chorrera ceramics from Machalilla has been well argued by Beckwith (n.d.: 469).

Ceramic analysis of Real Alto and San Lorenzo del Mate potsherds have shown that since Phase 1b, Valdivia potters were selecting clays and manipulating ceramic fabric according to their intended use (Álvarez 1995a,b, 1996; Álvarez, Marcos, and Spinolo 1995). In recent analyses Valdivia 1b sherds were segregated into three classes according to their function, judging from context: vessel shape, surface treatment, and surface finish parameters. For the manufacture of cooking pots and for liquid storage vessels, there was a selection for the feldspars-rich clays that occur naturally in the area. These clays are found in pockets on some of the bluffs in the valleys of the Santa Elena peninsula. Fired between 800 and 900 °C, they produce strong, durable utilitarian wares. However, the fabric used in cooking-pot manufacture contained a larger quantity of quartz than did the fabrics of liquid containers, quartz being predominant over feldspars. This uncommon combination does not seem to occur naturally in the peninsula, or it is rare, suggesting that the fabric was manipulated by the addition of quartz-rich sands commonly found in river bottoms. Natural or not, in selecting for a quartz-rich fabric the thermal shock resistance of cooking vessels was greatly increased (Bronitsky and Hamer 1986; Rice 1987; cf. Rye 1981). The fabric used for serving and ceremonial wares was the more common naturally decanted clay found throughout the area. These clays contained only small and fine-fraction clay minerals with a lesser proportion of feldspars and quartz. These vessels were fired at low temperatures never reaching above 650 °C.

In terminal Valdivia phases and later in the Formative sequence, these differences became more clear-cut. Valdivia 8 potters never fired the fancy “baroque” ceremonial and fiesta wares beyond 600 °C. Cooking pots contained larger proportions of quartz to feldspars than those found in the paste of vessels designated to contain liquids.

Further refinements in the ceramic technology occurred in the Middle and

Late Formative, particularly in the manufacture of fancy prestige wares. Vessel walls became notably thinner. The use of burnishing to achieve smooth shiny surfaces was refined and became more common. Line painting using slip pigments was added to the repertoire of decorative techniques. Iridescent painting, first developed during the Early Formative, was refined during the Middle Formative and became a distinctive decorative characteristic of fancy pottery during the Late Formative.

CONCLUSIONS

From this synthesis of the Formative, it becomes clear that our knowledge of the social history and lifestyles of Valdivia culture has been greatly advanced through interdisciplinary research at Loma Alta, Real Alto, and environs. Investigations at San Isidro (Manabí), San Lorenzo del Mate and Anllulla (Guayas), La Emerenciana (El Oro) (Jadán 1986; Marcos and Alvarez 1989; Staller 1994; Zeidler and Pearsall 1994) have likewise enriched our understanding of the terminal Valdivia phase and of the Valdivia–Machalilla transition. Archaeological research in the Guayas basin⁸ has not only shown the widespread distribution of Valdivia 8, but the depth of the Valdivia historical process in the area (Raymond et al. 1980). The appearance of a few Valdivia 8 sherds at R-53 on the lower drainage of Estero de Mafa, up river from Borbón, in Esmeraldas (DeBoer 1996: 68–70) demonstrates the need of further Formative research there, as well as in the Guayas basin.

Our increasing knowledge of Valdivia customs shows that newer and more profound investigations are still required to reconstruct the Early Formative historical process fully. There are more than 100 Valdivia sites known from coastal Ecuador that should be excavated, not to mention the need for detailed studies of other Ecuadorian Formative societies.

The knowledge of Machalilla, its chronological position, its ceramic style, and its distribution has been augmented by Bischof (1975b), Lippi (n.d.b), Paulsen and McDougle (n.d.), and Zeidler (1986). Museum collections without exact provenance give a wider view of the Machalilla style than what is evident from archaeological research. A good example of this can be seen in an exhibit catalogue of the Field Museum of Natural History on ancient Ecuador (Lathrap et al. 1975: 32–34, 41, 82–86).

This tendency is exacerbated during the Late Formative period. Recent archaeological research (Bischof 1975b; Marcos 1982; Evans and Meggers, 1982;

⁸ See Peñón del Río (Marcos 1987), Milagro (Gonzalez de Merino n.d.), and La Cadena-Quevedo (Reindel 1995).

López y Sebastián and Caillavet 1979; Zedeño, n.d.; Zevallos 1965/66) has provided excellent information on Chorrera ceramics and the Engoroy and Tachina variants. However, materials from good archaeological contexts do not compare with the great number of Late Formative vessel and figurine shapes and finishes found in Ecuadorian national museums and museums abroad (Cummins this volume).

This problem is the result of misconceptions and flawed policies in Ecuadorian archaeology:

1. A generalized concept that “national heritage” (*patrimonio nacional*) is represented by portable art and monuments, rather than the historical data encapsulated in archaeological activity areas and contexts within archaeological sites.
2. Few archaeologists, on the other hand, have directed their interests to the excavation of cemetery and ceremonial sites, instead focusing on archaeological middens. Although it is important to construct local chronologies and, through interdisciplinary research, discover forms of production and reconstruct lifestyles, it is wrong to leave the excavation of ceremonial paraphernalia and grave goods to those who supply collectors and museums. This neglects an important aspect of archaeological material culture and leaves it out of contextual archaeological analysis.
3. This has been exacerbated by a national museum policy that has directed most funds to the acquisition of archaeological material culture rather than research. This policy, directed supposedly to maintaining Ecuadorian national heritage at home, has resulted in the support of illegal excavations and destruction of archaeological sites.

Here we can only mention these problems to explain some causes of our uneven knowledge of the Ecuadorian Formative, especially for the long period during which research on the Formative focused mostly on the coast. A welcome initiative by the Central Bank Archaeological Museum in Cotacollao has served to reconstruct the early social history of the Quito valley (Villalba 1988). I applaud that and other indications that state-supported field research in Ecuador is heading in a new direction.

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