



Archaeological Survey in Northern Highland Ecuador: Inca Imperialism and the Pais Caranqui

Tamara L. Bray

World Archaeology, Vol. 24, No. 2, Analytical Field Survey. (Oct., 1992), pp. 218-233.

Stable URL:

<http://links.jstor.org/sici?sici=0043-8243%28199210%2924%3A2%3C218%3AASINHE%3E2.0.CO%3B2-%23>

World Archaeology is currently published by Taylor & Francis, Ltd..

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/about/terms.html>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/journals/taylorfrancis.html>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

The JSTOR Archive is a trusted digital repository providing for long-term preservation and access to leading academic journals and scholarly literature from around the world. The Archive is supported by libraries, scholarly societies, publishers, and foundations. It is an initiative of JSTOR, a not-for-profit organization with a mission to help the scholarly community take advantage of advances in technology. For more information regarding JSTOR, please contact support@jstor.org.

Archaeological survey in northern highland Ecuador: Inca imperialism and the País Caranqui

Tamara L. Bray

Introduction

At the time of the Spanish Conquest, the Inca controlled a vast empire that stretched some 3,000 miles along the mountainous spine of South America. Given the ecological and ethnic diversity of this territory, its unification under a single political force was a feat of unprecedented scope in New World prehistory. To understand better the nature of imperial expansion and the state's relationship with disparate sociopolitical units, a regional survey was undertaken on the northern frontier of the Inca empire in the País Caranqui, Ecuador. Ceramic and settlement pattern data from this sector of the Andean highlands offer some insight into Inca strategies of consolidation and control. These data suggest that direct coercion and the weakening of pre-existing links between local polities may have been important aspects of the imperial agenda in this sector of the empire.

The study area

The País Caranqui, as defined by Jijón y Caamaño (1952: 343), refers to the northern Andean region historically associated with the powerful confederacy of the Caranqui and Cayambe nations (also Espinosa 1983; Larrain 1980). In modern geopolitical terms, this region encompasses the highland sectors of Imbabura and northern Pichincha provinces, Ecuador (Fig. 1). Though treated as ethnically distinct, the Caranqui and the Cayambe polities shared a regional artistic tradition (cf. Bray 1991; Goff 1980; Meyers 1981), possessed a *lingua franca*, if not a common mother tongue, (Borja [1582?] 1965: 249; Cieza de León [1553] 1962: 137), and had developed similar forms of sociopolitical organization (Athens 1980).

The northern Ecuadorian sierra was one of the last regions to be conquered by Inca forces. Most scholars estimate the period of Inca occupation as between thirty and fifty

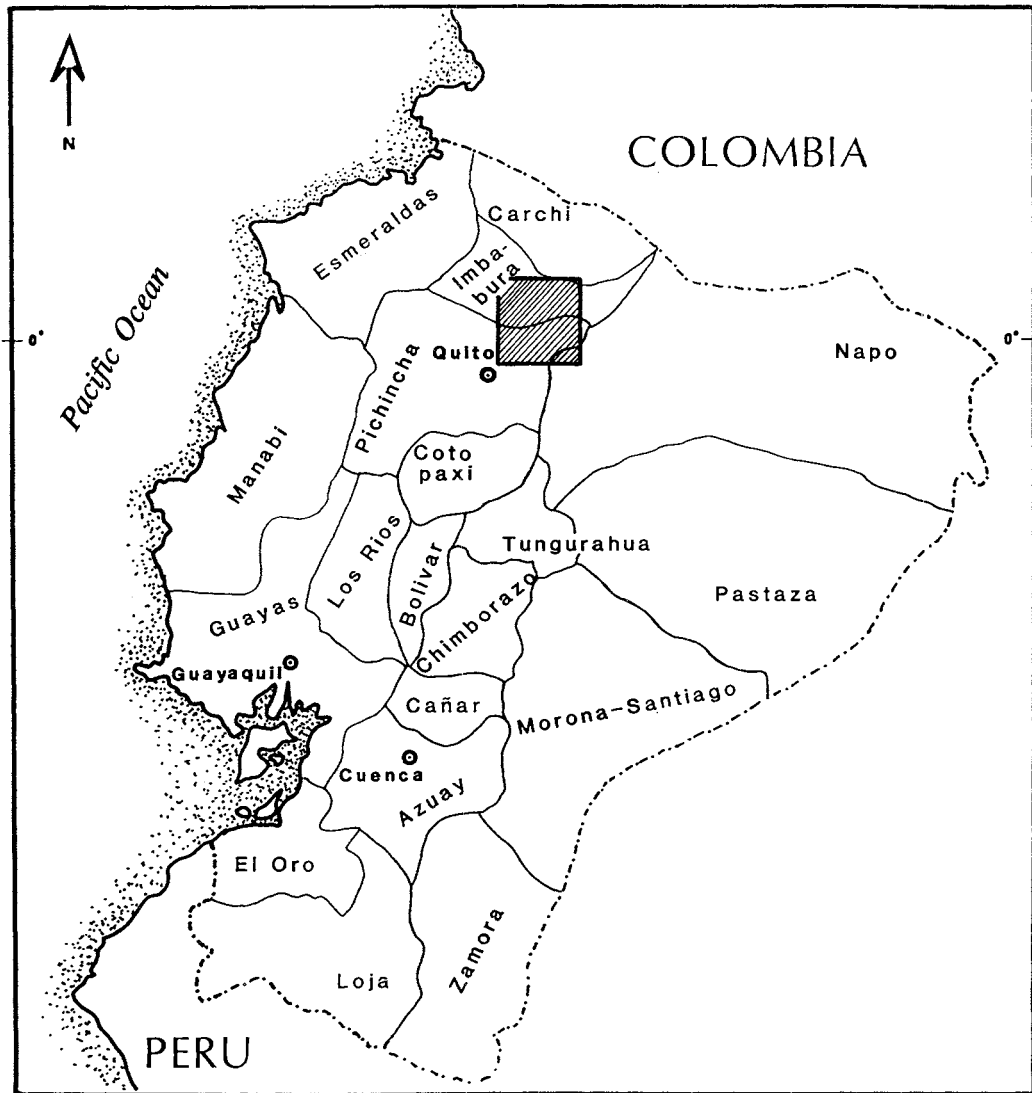


Figure 1 Map of Ecuador. Hatched area indicates approximate boundaries of the País Caranqui.

years, from approximately AD 1490 to 1534 (Espinosa 1975; Jijón y Caamaño and Larrea 1918). Recent ethnohistoric research (Espinosa 1983; Oberem 1978; Salomon 1986) suggests that the political economy of this northern zone differed substantially from the classic Andean model described for the southern and central highlands (cf. Murra 1980). Most notable among the special features of the northern system were a class of specialized long-distance traders known as *mindalâes* (Grijalva 1937; Pax Ponce de León [1562] 1965; Salomon 1978, 1986); a lack of emphasis on the vertical archipelago model of interzonal articulation (Oberem 1978; Salomon 1986); and the autonomous, yet highly interconnected, nature of the local polities (Borja [1582?] 1965; Cieza de León [1553] 1962; Salomon 1986).

Larrain (1980: 111–12) argues that it was the level of sociopolitical complexity found in the País Caranqui that initially attracted the Inca to it. The highly stratified nature of Caranqui and Cayambe society is materially encoded in the large quadrilateral and hemispherical mounds that dot the landscape of this region (cf. Athens 1980; Gondard and López 1983). These artificial mounds, known locally as *tolas*, are often found in clusters and are generally thought to have served as house platforms for elite and chiefly residences (Jijón y Caamaño 1920: 47; Osborn and Athens 1974: 7–8; Wurster 1981). The number of *tolas* per site varies greatly, but many of what may be considered regional centers contain well over sixty mounds each. The distribution of these earthworks is thought to be coterminous with the extent of Caranqui-Cayambe influence (Jijón y Caamaño 1952).

In 1986, a systematic archaeological survey of a 120km² section of the País Caranqui was undertaken for the purpose of obtaining information on indigenous settlement patterns, local pottery production, and Inca state strategies of surplus extraction and control. The area selected for study is located approximately 50km northeast of the capital city of Quito in the intermontane basin drained by the Guayllabamba River. The fact that an Inca presence had been previously recorded in this region (Jijón y Caamaño 1914; Plaza 1976) was one of the principal factors in its selection as the study area. The exact survey unit was defined primarily with respect to natural topographic features. It is delineated on the north, west, and south sides by the deep canyons of the Pisque, Guayllabamba, and Urvia Rivers, respectively; on the east side it extends up the interior flank of the Cordillera Real to approximately the 3,000-meter contour level (Fig. 2).

The dual focal points of the project area are the towns of El Quinche and Guayllabamba. The former is situated at the base of the eastern cordillera on a large, flat shelf of land, while the latter is located approximately 400m below in the center of a large basin-like depression. El Quinche is one of only seven sites in Ecuador that has produced any significant amount of Inca pottery (Jijón y Caamaño 1914: 61–81; Meyers 1976: 225–9). According to ethnohistoric sources, the Inca replaced the entire aboriginal population of El Quinche with *mitmaquna* (forcibly relocated ethnic colonies) during or after the Caranqui wars (Espinosa 1983: 365; Pérez 1960: 241–9). There is also evidence that El Quinche was the site of an important indigenous shrine or *huaca* (Bray 1991: 36–9), which may in part explain the Inca attraction to it. Ethnohistoric data indicate that Guayllabamba, too, may have been at least partially reconstituted as a *mitmaq* center in the late prehistoric period (Espinosa 1983: 363; Pérez 1960: 238–40).

Three physiographic sub-zones may be distinguished in the Guayllabamba–El Quinche study area on the basis of elevation, micro-climatic conditions, and vegetation. These correspond to the lower flanks of the eastern cordillera and the associated basal ledge (3,000–2,400m); the topographically well-defined Guayllabamba basin (2,400–2,200m); and the steep-sided canyons of the Pisque, Guayllabamba, and Urvia rivers mentioned above (2,200–1,900m). Prehistoric settlement pattern data from this region were interpreted with respect to these sub-sectors, as they also correspond to distinct micro-production zones. The proximity of such zones is a characteristic of the equatorial Andes. Oberem (1978) describes the pattern of productive organization found in the north in terms of ‘microverticality’, in contrast to Murra’s (1975) ‘vertical archipelago’ model.

The upper sub-zone in the study area is characterized by moist, temperate conditions. This ecozone may have once supported extensive forests, but centuries of intense

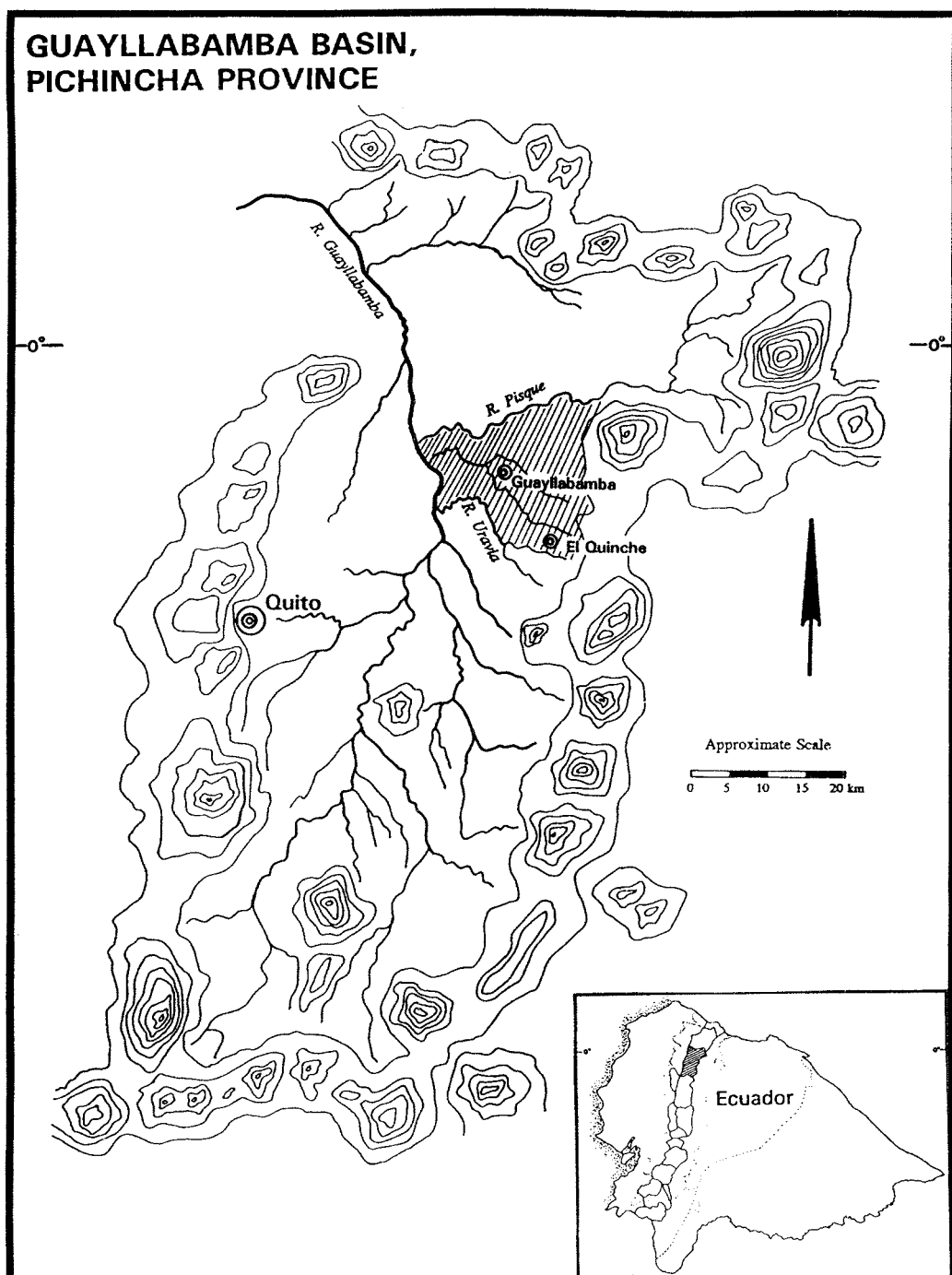


Figure 2 Schematic map of the Guayllabamba Basin, Pichincha Province, Ecuador, illustrating general hydrographic and orographic features of this intermontane basin (after Terán 1962). Hatched area indicates location of project area. Inset map locates the Guayllabamba Basin in the chain of highland basins that comprise the Ecuadorian intermontane region the Cordillera Real to the east.

agricultural activity have completely altered the native regime (Acosta-Solís 1982: 59). Maize is the principal crop in this sector today and probably in pre-Columbian times as well (cf. Salomon 1986: 74); other important cultigens include beans, wheat, barley, and various cash crops.

The two lower sub-zones are characterized by warmer, more arid conditions that become more pronounced as one descends towards the canyon bottoms. Indigenous plant species in both lower sub-zones are primarily xerophytic. While the canyons – due to their extreme aridity and inaccessibility – are of relatively minor importance to the local economy, the Guayllabamba basin is regionally recognized as an important agricultural zone. As in the case of the temperate ecozone above, human intervention has radically altered natural conditions in the basin. The widespread use of irrigation in this area has transformed the original desert-like environment into a lush, sub-tropical production zone, known today for its citrus fruits, avocados, and chirimoyas. Alfalfa, corn, wheat, and beans are other important crops in this sub-zone.

Several lines of evidence point to the antiquity of the irrigation works found in the Guayllabamba basin. These data suggest that the area was likely to have been an important agricultural center well before the Inca conquest. The name ‘Guayllabamba’ is itself a Quechua word that signifies ‘verdant plain’ in the language of the Cuzqueño conquerors. That the Inca would bestow such a name upon this semi-arid basin in the absence of irrigation seems highly unlikely. Further support for a pre-Incaic origin of the waterworks is found in an ethnohistoric document dating to c. AD 1558 in which a native plaintiff testified that the irrigated maize lands belonging to his grandfather, a former *cacique* (an ethnic lord) of Guayllabamba, had been expropriated by Tupaq Inca Yupanki (Monroy 1930: 159). Archaeological evidence from elsewhere in the País Caranqui makes it clear that irrigation technology was in place prior to the Inca occupation of the region (cf. Athens 1976: 62; Jijón y Caamaño 1920: 113; Myers 1974). The agricultural productivity of the Guayllabamba basin may have been an important factor in Inca strategies of surplus extraction.

Archaeological survey

An intensive walk-over survey of the Guayllabamba–El Quinche study area was completed in 1987. The survey, which utilized parallel pedestrian transects spaced at 30m intervals, was designed to insure 100 per cent coverage of the ground surface within the project area. The amount of land under cultivation, together with the sparse character of the natural vegetation, created the conditions of good overall surface visibility and made such a strategy of surface inspection feasible.

In total, sixty-six archaeological sites were identified on the basis of surface indicators consisting primarily of sherd and lithic scatters. Architectural remains in the project area are limited and associated with only a few specific site types. An average of 5 per cent of the total surface of each site was systematically collected using a standardized sampling procedure. This involved the total collection of all materials within 1m-wide swathes laid out across the site at regular intervals. This collection strategy was designed to reduce the amount of bias in artifact recovery, maintain a degree of control over intra-site patterning,

and insure comparability of samples between sites. Over 37,000 ceramic sherds and 1,500 pieces of lithic debitage were recovered in this fashion.

While the effects of modern agricultural practices on site integrity and surface sampling were recognized as potential sources of skewing in subsequent analyses, controlled studies conducted by other researchers suggest that the patterning of archaeological materials is not always, or even typically, destroyed by farming activity (Dunnell and Dancey 1983; Roper 1976). Processes of erosion, re-occupation, cultivation, and development are factors that to some extent affect all archaeological assemblages, including buried deposits, and are accepted as inherent sources of bias in the data.

Settlement patterning

Based on comparisons of the local ceramic assemblages with stratigraphically excavated materials from other area sites (cf. Athens 1980; Goff 1980; Meyers 1981; Porrás 1982;

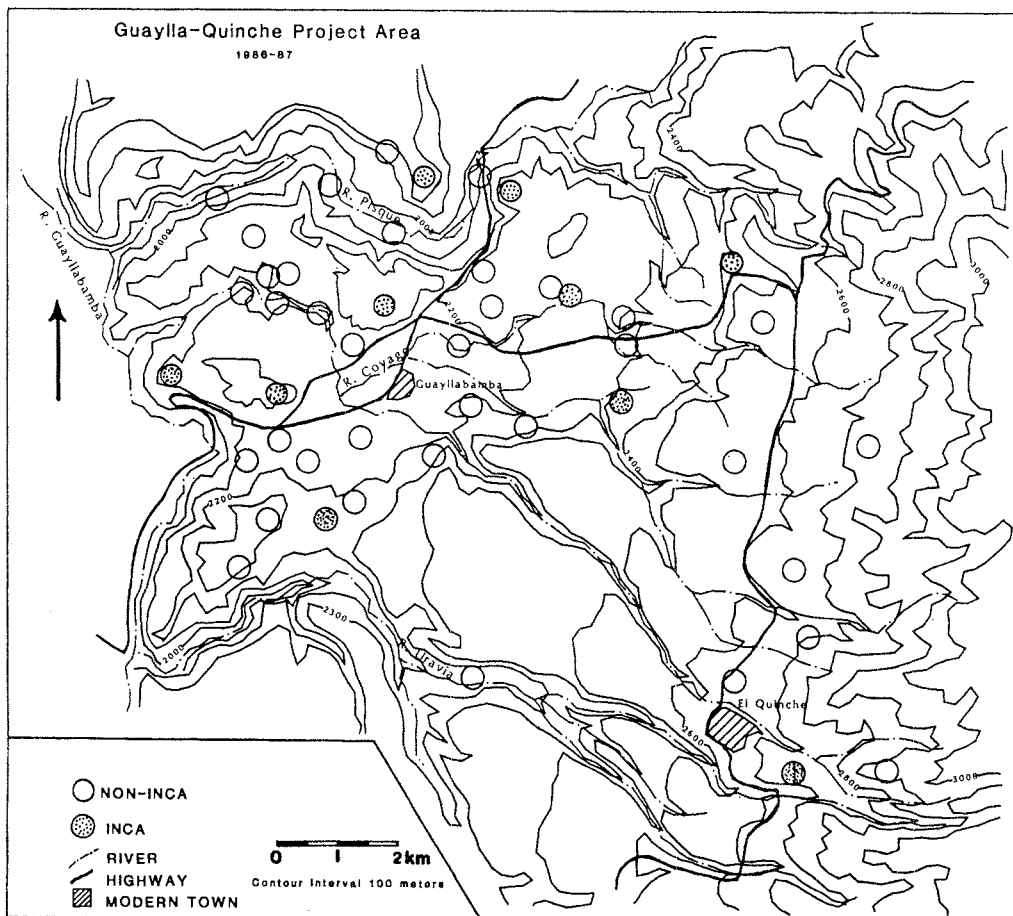


Figure 3 Distribution of late Integration period sites (AD 950-1530) in the Guayllabamba-El Quinche project area.

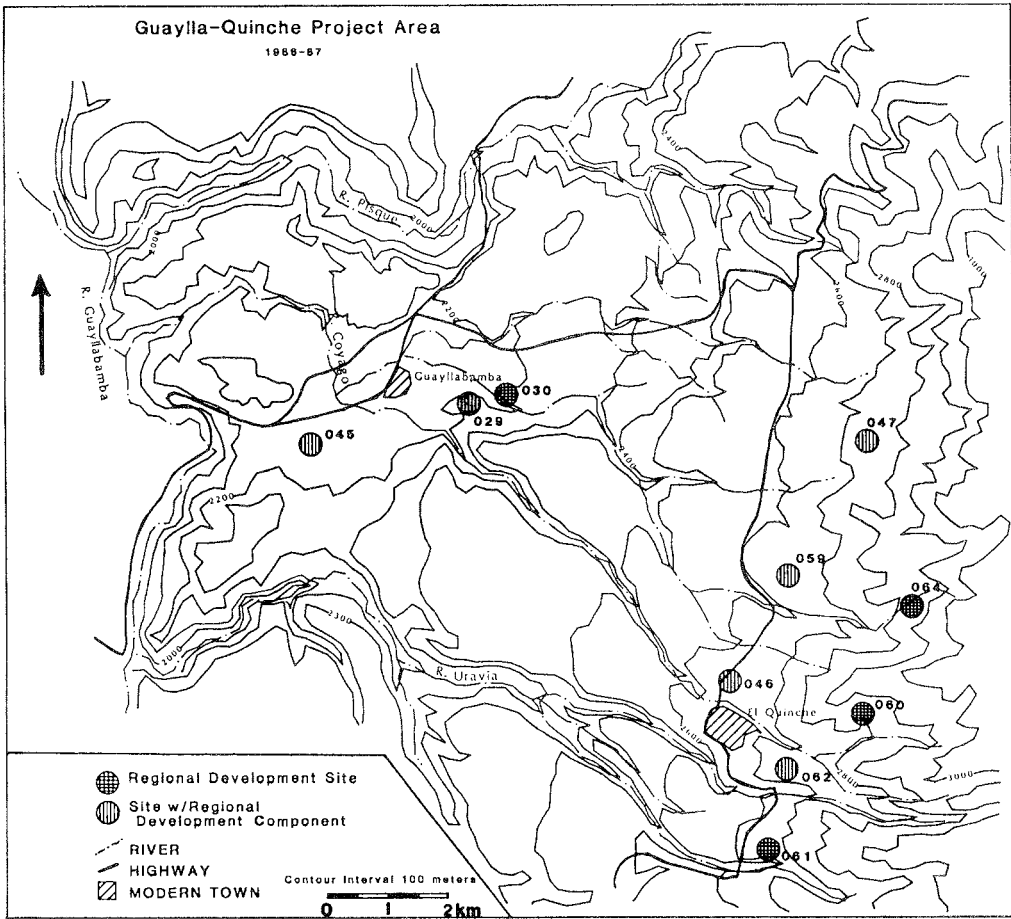


Figure 4 Distribution of Regional Development period sites (500 BC–AD 500) in the Guayllabamba–El Quinche project area.

Schoenfelder 1981), 70 per cent ($n = 46$) of the sites in the project area were determined to represent late Integration period (c. AD 950–1530) occupations (Fig. 3). While late period sites are found in all three of the ecological sub-zones defined for the project area, greatest emphasis appears to have been placed on utilization of the Guayllabamba basin. Four sites in the study area appear to have been occupied primarily during the Regional Development period (500 BC–AD 500), while six others exhibit a Regional Development period component (Fig. 4). The distribution of these sites indicates a preference for the uplands over the valley floor; 70 per cent of the Regional Development period occupations are located above 2,600m. A total of nine sites produced limited amounts of a Formative period pottery (1500–500 BC) (Fig. 5). Though Formative elements were observed in each of the three sub-zones, there again seems to have been a preference for the upland locations during this early period.

Six *pucarás*, or hilltop fortresses, and four mound sites were identified in the study area. The latter contain from one to four quadrilateral mounds each. Two sites reportedly had

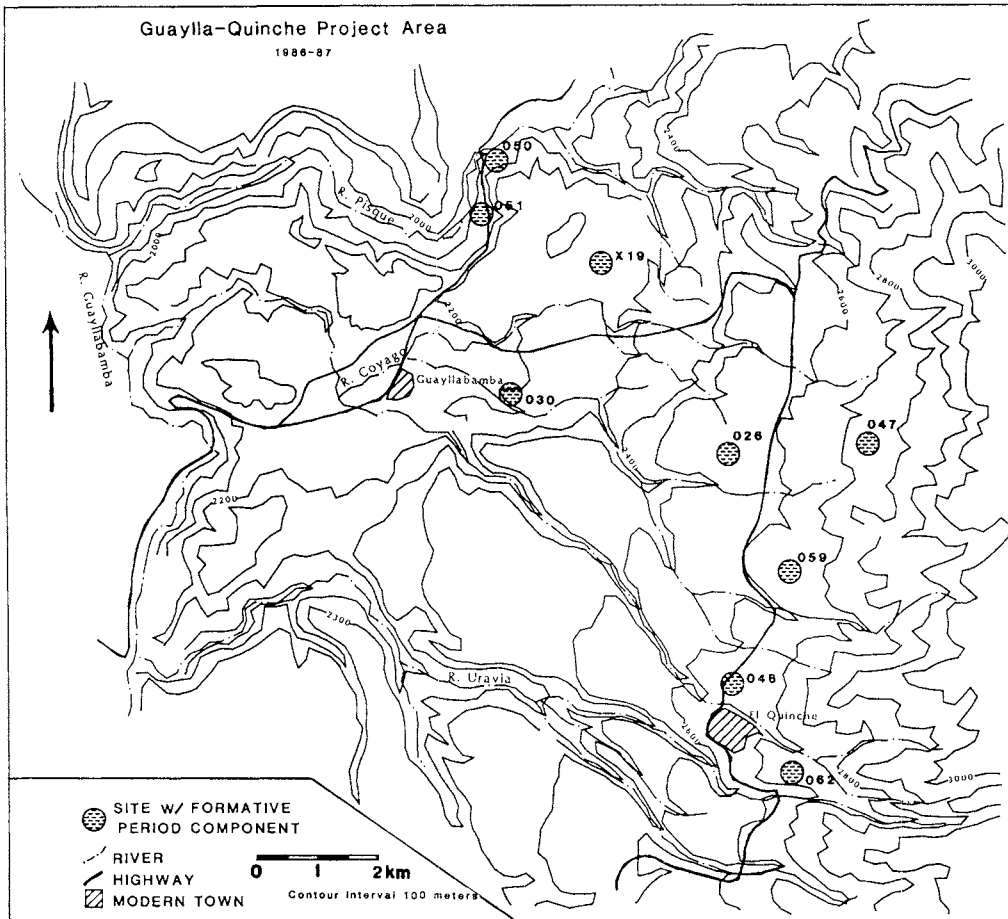


Figure 5 Distribution of sites with a Formative period (1500-500 BC) component in the Guayllabamba-El Quinche project area.

hemispherical earthworks associated as well, though these were no longer in evidence at the time of the survey. Quadrilateral mounds, a diagnostic feature of the Caranqui landscape, are associated with the late prehistoric period and date to approximately AD 1250-1450 (Athens 1980; Oberem 1981). The *pucar*s found in the northern Ecuadorian highlands are generally believed to be Incaic in origin, though more research remains to be done on this question (Almeida and Jara 1984; Athens 1980: 114; Jijón y Caamaño 1914: 24; Oberem 1969).

The distribution of Inca materials in the Guayllabamba-El Quinche region offers some insight into strategies of imperial expansion on the northern frontier (Fig. 6). Inca pottery bearing classic geometric motifs and/or polychrome paint was recovered at ten sites in the project area, six of which were identified as *pucar*s. There is little doubt that these hilltop fortresses were intended primarily as garrisoned strongholds. Their characteristic structural features, which include strategic placement, terraced slopes, moats, and containment walls, all indicate a basic defensive function. Stone weapons such as mace

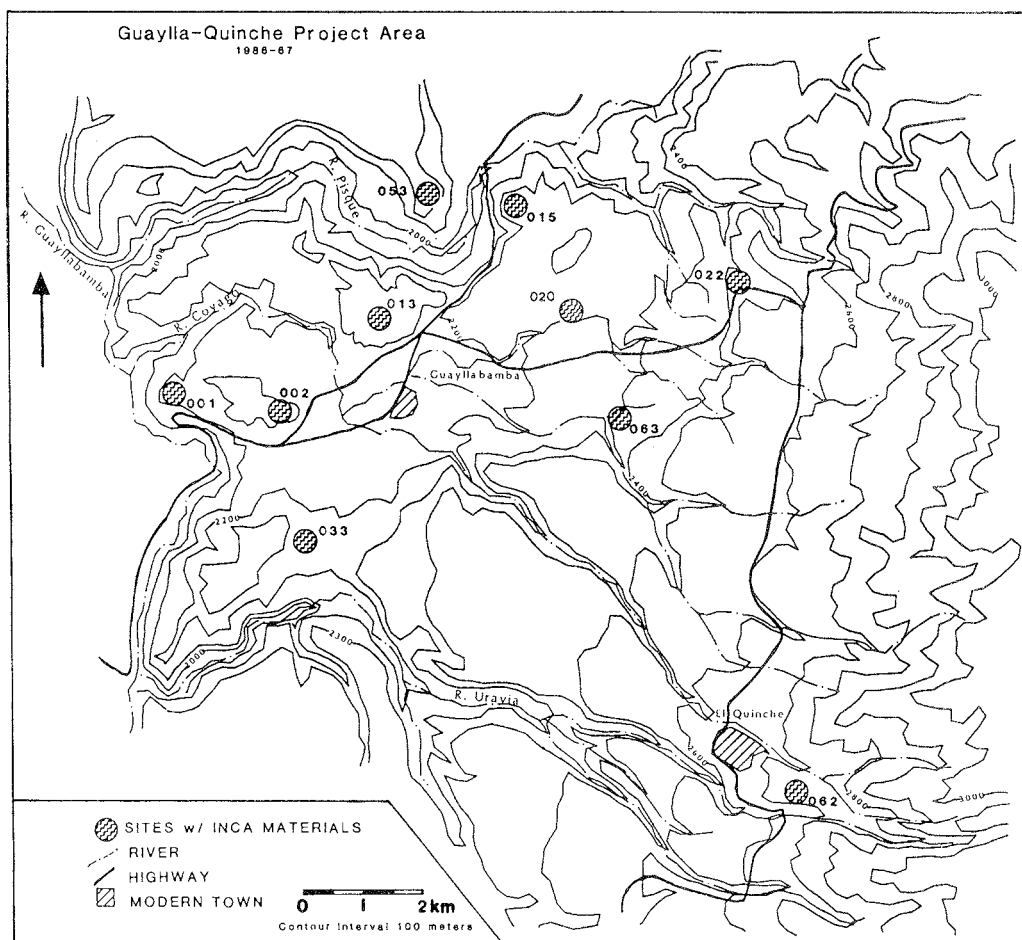


Figure 6 Distribution of sites with Inca materials in the Guayllabamba–El Quinche project area.

heads and sling stones found at many of these sites (Fresco n.d.; Oberem 1969; Plaza 1976) add to the picture of regional unrest. The presence of Inca pottery at all six *pucaras* in the project area date them to the late prehistoric period and support the notion that they were occupied by Inca forces.

The *pucaras* in the project area are all within visual range of each other. Two of the hilltop sites (015 and 053) are situated opposite one another overlooking the point at which the modern Pan-American highway crosses the Pisque River. This point, which constitutes the northern entrance to the Guayllabamba basin, retains structural evidence of a colonial causeway and was, in all likelihood, the site of the prehistoric crossing as well. Another *pucara* (001) is situated at the western end of the basin. It overlooks the crossing point of the Guayllabamba River and the western entrance to the basin. In the southwest corner of the basin is Pucara Puruhanta (033). This site sits on a hilltop near the mouth of one of two main arroyos leading from the valley floor to the town of El Quinche. A secondary road today connects the modern towns of Guayllabamba and El Quinche via this canyon.

Pucara San Luis (002), occupying the highest point in the basin, towers like a sentinel

above the modern town of Guayllabamba. It is flanked to the northeast by Pucara Guayllabamba (013). Both hilltop sites overlook the Pan-American highway, which passes along the northern perimeter of the Guayllabamba basin. The position of these two *pucarás* may be construed as inferential evidence for the antiquity of this route.

Outside of the fortified hilltop locations, Inca pottery was recovered at only four other sites in the project area. One of these, site 022, is situated on a knoll precisely above the eastern entry point to the Guayllabamba valley. This site, which had no visible structural remains, yielded the highest density of Inca pottery in the study area. Two other sites on the basin floor (020 and 063) produced limited amounts of Inca pottery. The larger of the two (063) is known as Mesa Tola. This was the only mound site recorded in the Guayllabamba basin. It, too, is strategically positioned near the mouth of one of the main ravines connecting the basin with the ledge above. The only site outside of the Guayllabamba basin containing an Inca component was El Quinche (062). This locale was identified through ethnohistoric sources as an important Inca *mitmaq* center and the likely site of an indigenous *huaca*.

The distribution of Inca sites around the Guayllabamba basin suggests a concern with control of access and internal movement. Six of ten sites that produced Inca materials are situated near natural entry points into the Guayllabamba basin. Two others, located on the northern perimeter of the basin, afford unobstructed views of the population center below. Their strategic placement indicates that control over existing channels of communication and exchange were important considerations for Inca forces. The physical location of these sites on isolated hilltops speaks to conditions of regional hostility and unrest, as well. The settlement pattern data suggest that surveillance, restriction of movement, and direct coercion were important elements of the imperial agenda in this region.

Ceramic analysis

Two distinct ceramic wares were identified in the project area on the basis of a modal analysis of variables related to paste composition. A total of 4,300 sherds were included in this analysis. The two ware categories are referred to as Caranqui and Panzaleo. The definition of these wares was further refined through a petrographic analysis of twenty-nine ceramic thin-sections (Bray 1991: 119–39). In addition to the Panzaleo and Caranqui wares, a small amount of Inca polychrome pottery was also recovered in the project area, as noted above. Seven sherds with classic geometric designs were thin-sectioned and included in the optical mineralogy study. Though very distinct stylistically, the Inca pottery proved indistinguishable from the local Caranqui ware in terms of paste composition and basic mineralogy (Bray 1991: 140).

The coarse, thick-walled Caranqui wares, which account for well over 90 per cent of the local ceramic assemblage, represent part of a widespread technological tradition found throughout much of the País Caranqui. These wares were typically finished by smoothing the vessel surface after the clay had reached a leather-hard state. Decorative treatment was limited to the use of slip. The paste of the Caranqui wares is comprised exclusively of volcanic minerals and rock fragments. The primary constituents are plagioclase feldspars

and hornblendes – with quartz, pyroxenes, biotite, magnetite, and chlorite identified as common accessory minerals (Bray 1991: 134–6). The petrographic analysis established that Caranqui ware was made from residual clays developed in situ from volcanic parent materials. The raw materials used in the manufacture of Caranqui ware were locally available and apparently subject to little modification prior to use.

Panzaleo ware forms a minor component of the ceramic assemblage at 36 per cent of the sites ($n = 24$) recorded in the project area. This ware is readily recognizable by its thin vessel walls, light-colored paste, and micaceous inclusions. The most commonly utilized surface-finishing techniques were wiping and smoothing. Local specimens were rarely slipped, though both plastic and painted decoration were fairly common forms of embellishment.

The mineralogical configuration of Panzaleo ware presents an interesting and informative contrast with the Caranqui ware, which is presumably of local manufacture. While many of the same minerals were observed in the Panzaleo thin-sections, they differ in rank order of frequency with quartz, pyroxene, and muscovite replacing hornblende as the most common mineral constituents after the plagioclase feldspars. The primary difference between the two wares, however, lies in the presence of a metamorphic component in Panzaleo ware comprised of micaceous schist, epidote, quartzite, and gneiss (Bray 1991: 136–9; DePaepe and Buys in press; Fritz and Schoenfelder 1987: 139–45).

The presence of metamorphic minerals in Panzaleo ware is highly significant with respect to the source of this pottery. In the Ecuadorian Andes, the eastern and western cordilleras developed through different geodynamic processes and are characterized by rocks that are chemically and mineralogically distinct (Zeil 1979: 54). The western range is dominated by a series of basalts and low-silica volcanic rocks collectively known as the Basic Igneous Complex, while basement rock in the eastern cordillera is composed primarily of silica-rich granites and metamorphic rock series (*ibid.*: 36, 54–7, 82). This metamorphic series runs the length of the Cordillera Real in Ecuador, outcropping only along the exterior flank of the range. Given this situation, eroded metamorphic materials are most likely to be found in the foothills and drainages on the eastern side of the Cordillera Real, which would point to this area as the likely locus of Panzaleo pottery production. The presence of this ware in the northern sierra may therefore be construed as evidence for prehistoric relations of exchange with the eastern Ecuadorian montaña or lowlands zone, offering limited confirmation of ethnohistoric references to the importance of trade in this region.

One of the most interesting patterns to emerge in the analysis of ceramic materials from the study area was the inverse relationship noted between Panzaleo and Inca materials (Fig. 7). While Panzaleo pottery formed a regular, if minor, component of other late period sites in the region, its association with sites containing Inca materials was noticeably less common. The negative correlation between Inca and Panzaleo wares could be interpreted as evidence of the decreased availability of tradewares in the region following the imposition of Inca rule. These findings would suggest that the reduction of extra-local contacts and interregional ties may have been an important strategy of imperial control and consolidation in this region.

This hypothesis finds some support in ethnohistoric data from the Ecuadorian highlands. In a comparative analysis of sixteenth-century documents from culturally and

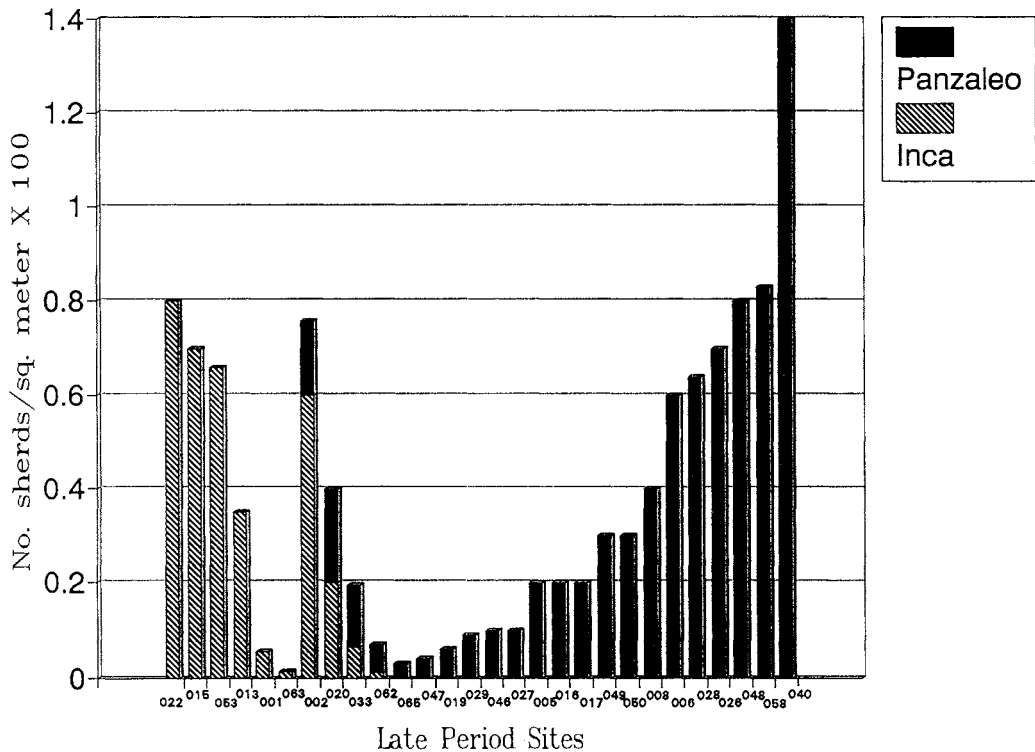


Figure 7 Distribution of Panzaleo and Inca pottery found at sites in the Guayllabamba-El Quinche region.

ecologically similar regions in the northern sierra, Salomon (1986: 188–212) found that the number and significance of *mindaláes* (long-distance traders) decreased on a continuum from north to south. He correlates this pattern with the entrenchment of Inca hegemony along this north–south axis. These data offer further evidence that the subversion of long-distance trade may have been an important component of the imperial agenda in the northern highlands.

Discussion

The archaeological survey undertaken in the northern Ecuadorian highlands was designed to investigate the question of how the Inca state articulated with societies, like those of the Caranqui and Cayambe, whose political and economic structures differed significantly from its own. Many scholars of Andean prehistory have portrayed the growth of the Inca empire as based on the informed manipulation of ancient and widespread principles of economic self-sufficiency, institutionalized reciprocity, and redistribution (cf. Murra 1980; Morris 1985; Rostworowski 1978). How did the Inca lords proceed in situations where these economic and ideological constructs were absent or less deeply entrenched? Did they follow a transformational strategy based on adherence to an idealized model of socioeconomic organization, or did they perhaps rely on a policy of

laissez-faire in which flexibility and accommodation were seen as the keys to imperial expansion?

An analysis of the ceramic and settlement pattern data collected in the País Caranqui permits some tentative hypotheses regarding Inca strategies of state expansion on the northern frontier. The convergence of archaeological and ethnohistoric evidence suggests that the repression of long-distance trade and extra-local contacts may have been an important feature of the imperial program in this region. The distribution of fortified Inca sites in the study area highlights conditions of regional unrest and again stresses a concern with control over access and movement. These different lines of evidence from the País Caranqui point to the use of undisguised force in the transformation of the local polities into viable state components.

The data generated by this study contradict certain models of the Inca state. The notion of the Pax Incaica, for instance, holds that the unification of the many and varied local level polities under the umbrella of imperial Inca rule would have resulted in widespread regional peace. Under such conditions, interregional trade, hindered in earlier times by localized warfare and competition, would be expected to thrive. The idea of the Pax Incaica essentially equates the expansion of the Inca empire with increased economic integration of the Andean world.

The data from the País Caranqui suggest that the people of this region may have actually experienced the opposite effect with the imposition of imperial rule. The local economic organization of the northern Ecuadorian highlands prior to the Inca occupation emphasized long-distance exchange as one of the primary means of obtaining desired extra-local goods. If a temporal distinction may be inferred between late prehistoric period sites containing Inca materials and those without, the lack of tradeware observed at the former would suggest that the Incas from Cuzco may have actually sought to subvert pre-existing relations of exchange.

Rather than exploiting diverse economic arrangements, preliminary evidence suggests that the Inca may have sought instead to transform the local organization of production in the northern highlands, stressing conformity with the imperial model. This could be viewed as a strategy aimed at eliminating horizontal linkages that could potentially lead to dangerous anti-Inca alliances. It could also be interpreted as a strategy for transforming regional interdependency into local dependency on the state.

*Repatriation Office
National Museum of Natural History
Smithsonian Institution
Washington DC 20560, USA*

References

- Acosta-Solís, M. 1982. *Fitogeografía y Vegetación de la Provincia de Pichincha*. I.P.G.H. Plan Piloto del Ecuador, Sección de Geografía. Quito: Consejo Provincial de Pichincha.
- Almeida, E. and Jara, H. 1984. *El Pucara de Rumicucho*. Miscelánea Antropológica Ecuatoriana, Serie Monográfica No. 1. Quito: Museo del Banco Central del Ecuador.

- Athens, S. 1976. Informe preliminar sobre investigaciones arqueológicas realizadas en la sierra norte del Ecuador. *Sarance*, 2: 56–78, Otavalo, Ecuador.
- Athens, S. 1980. *El Proceso Evolutivo en las Sociedades Complejas y la Ocupación del Período Tardío-Cara en las Andes Septentrionales*. Colección Pendoneros. Otavalo, Ecuador: Instituto Otavaleño de Antropología.
- Borja, A. [1582?] 1965. Relación en suma de la doctrina e beneficio de Pimampiro y de las cosas notables que en ella hay, de la cual es beneficiado el P. Antonia Borja. In *Relaciones Geográficas de Indias*, Tomo II (ed. M. Jiménez de la Espada). Madrid: Ediciones Atlas, pp. 248–53.
- Bray, T. 1991. The effects of Inca imperialism on the northern frontier. Doctoral dissertation, Department of Anthropology, State University of New York at Binghamton.
- Cieza de León, P. [1553] 1962. *La Crónica del Peru. Primera Parte*. Madrid: Espasa-Calpe.
- DePaepe, P. and Buys, J. In press. Análisis mineralógico y químico de la cerámica procedente del sitio arqueológica 'Jardín del Este', Cumabayá, Provincia Pichincha. *Miscelánea Antropológica Ecuatoriana*, Boletín de los Museos del Banco Central del Ecuador, Guayaquil, in press.
- Dunnell, R. and Dancey, W. 1983. The siteless survey: a regional scale data collection strategy. In *Advances in Archaeological Method and Theory* Vol. 6 (ed. M. Schiffer). New York: Academic Press, pp. 267–87.
- Espinosa, W. 1975. Los mitmas huayacuntu en Quito o guarniciones para la represión armada, siglos XV y XVI. *Revista del Museo Nacional*, 41: 351–94, Lima.
- Espinosa, W. 1983. *Los Caranquis y Los Cayambes*. Colección Pendoneros. Otavalo, Ecuador: Instituto Otavaleño de Antropología.
- Fresco, A. n.d. Proyecto Quito de los Incas. Manuscript on file at the Department of Investigations, Museum of the Central Bank of Ecuador, Quito.
- Fritz, U. and Schoenfelder, U. 1987. New results concerning the Integration Period in the northern highlands of Ecuador. *Institute of Archaeology Bulletin*, 23: 127–50.
- Goff, L. 1980. An art historical and archaeological ceramic analysis from the Ecuadorian highlands. Doctoral dissertation, Department of Anthropology, Washington University, St Louis.
- Gondard, P. and López, F. 1983. *Inventario Arqueológico Preliminar de los Andes Septentrionales del Ecuador*. Quito: Ministerio de Agricultura y Ganadería, Programa Nacional de Regionalización Agraria (Ecuador) and Office de la Recherche Scientifique et Technique outre iner (Francia).
- Grijalva, C. 1937. *La Expedición de Max Uhle a Cuasmal, o sea, la Protohistoria de Imbabura y Carchi*. Quito: Editorial Chimborazo.
- Jijón y Caamaño, J. 1914. *Contribución al Conocimiento de los Aborígenes de la Provincia de Imbabura*. Madrid: Blas y Cía.
- Jijón y Caamaño, J. 1920. Nueva Contribuciones al Conocimiento de los Aborígenes de la Provincia de Imbabura. *Boletín de la Sociedad Ecuatoriana de Estudios Históricos Americanos*, 4(10–11): 1–120 and 183–245, Quito.
- Jijón y Caamaño, J. 1952. *Antropología Prehispánica del Ecuador*. Quito: La Prensa Católica.
- Jijón y Caamaño, J. and Larrea, C. 1918. *Un Cementerio Incásico en Quito y Notas acerca de los Inca en el Ecuador*. Quito: La Prensa Católica.
- Larrain, J. 1980. *Demografía y Asentamientos Indígenas en la Sierra Norte del Ecuador en el Siglo XVI: Estudio Etnohistórico de las Fuentes Tempranas (1525–1600)*. Otavalo, Ecuador: Instituto Otavaleño de Antropología.
- Meyers, A. 1976. *Die Inka in Ekuador*. Bonner Amerikanistische Studien, No. 6. Bonn: Universitaet Bonn.

- Meyers, A. 1981. Análisis de la Cerámica de Cochasquí. In *Cochasquí: Estudios Arqueológicos*, Colección Pendoneros, No. 3 (ed. U. Oberem). Otavalo, Ecuador: Instituto Otavaleño de Antropología, pp. 219–85.
- Monroy, J. 1930. El Convento de la Merced de Quito. *Boletín de la Academia Nacional de Historia*, 10: 137–84, Quito.
- Morris, C. 1985. From the principles of ecological complementarity to the organization and administration of Tawantinsuyu. In *Andean Ecology and Civilization* (eds S. Masuda, I. Shimada and C. Morris). Tokyo: Tokyo University Press, pp. 477–91.
- Murra, J. 1975. El control vertical de un máximo de pisos ecológicos en la economía de las sociedades andinas. In *Formaciones Económicas y Políticas del Mundo Andino*. Lima: Instituto de Estudios Peruanos, pp. 59–115.
- Murra, J. 1980. *The Economic Organization of the Inka State*. Greenwich, Connecticut: JAI Press, Inc.
- Myers, T. 1974. Evidence of prehistoric irrigation in northern Ecuador. *Journal of Field Archaeology*, 1: 309–13.
- Oberem, U. 1969. La fortaleza de montaña de Quitoloma. *Boletín de la Academia Nacional de Historia*, 114: 196–204, Quito.
- Oberem, U. 1978. El acceso a recursos naturales de diferentes ecologías en la sierra Ecuatoriana (siglo XVI). *Actes du XLIIe Congres International des Americanistes (1976)*, 4: 51–64.
- Oberem, U. (ed.) 1981. Cochasquí: Estudios Arqueológicos, Colección Peudoneros, No. 3. Otavalo, Ecuador: Instituto Otavaleño de Autropología.
- Osborn, A. and Athens, S. 1974. Prehistoric earth mounds in the highlands of Ecuador: a preliminary report. Manuscript on file at the Instituto Otavaleño de Antropología, Otavalo, Ecuador.
- Paz Ponce de León, S. [1582] 1965. Relación y descripción de los pueblos del Partido de Otavalo. In *Relaciones Geográficas de Indias*, Tomo II (ed. M. Jiménez de la Espada). Madrid: Ediciones Atlas.
- Pérez, A. 1960. *Quitús y Caras*. Lacta No. 10. Publicación del Instituto Ecuatoriano de Antropología y Geografía. Quito: Talleres Gráficos Nacionales.
- Plaza, F. 1976. *La Incursión Inca en el Septentrion Andino Ecuatoriano*. Serie Arqueología, No. 2. Otavalo, Ecuador: Instituto Otavaleño de Antropología.
- Porrás, P. 1982. *Arqueología de Quito: Fase Cotocollao*. Quito: Artes Gráficas Señal.
- Roper, D. 1976. Lateral displacement of artifacts due to plowing. *American Antiquity*, 41(3): 372–5.
- Rostworowski, M. 1978. Una hipótesis sobre el surgimiento del estado Inca. In *El Hombre y la Cultura Andina* (ed. R. Matos). Lima: Universidad Nacional Mayor de San Marcos, pp. 91–100.
- Salomon, F. 1978. Pochteca and mindalá: a comparison of long-distance traders in Ecuador and Mesoamerica. *Journal of the Steward Anthropological Society*, 9(1–2): 231–47.
- Salomon, F. 1986. *Native Lords of the Quito in the Age of the Incas*. New York: Cambridge University Press.
- Schoenfelder, U. 1981. Cerámica Fina y Hallazgos Menores. In *Cochasquí: Estudios Arqueológicos*, Colección Pendoneros, No. 4 (ed. U. Oberem). Otavalo, Ecuador: Instituto Otavaleño de Antropología, pp. 151–267.
- Terán, F. 1962. Orografía e hidrografía de la hoya del Guayllabamba. Publicación No. 250. Mexico City: Instituto Panamericano de Geografía e Historia.
- Wurster, W. 1981. Aportes a la reconstrucción de edificios con planta circular, sobre las pirámides rampa de Cochasquí. In *Cochasquí: Estudios Arqueológicos*, Colección Pendoneros, No. 3 (ed. U. Oberem). Otavalo, Ecuador: Instituto Otavaleño de Antropología, pp. 79–124.
- Zcil, W. 1979. *The Andes: a geological review*. Berlin: Gebruder Borntraeger.

Abstract

Bray, T. L.

Archaeological survey in northern highland Ecuador: Inca imperialism and the País Caranqui

In 1986–7, a systematic archaeological survey of a 120km² sector of the País Caranqui in northern highland Ecuador was conducted. The purpose of the study was to examine the nature of the Inca's relationship with disparate sociopolitical groups at the edges of imperial control in order to better understand strategies of state expansion. The ceramic and settlement pattern data from this region offer some insight into the processes of Inca imperialism as manifested on the northern frontier. These data suggest that direct coercion and the weakening of horizontal linkages between local polities may have been important aspects of the imperial agenda in this sector of the empire.