

## Some Observations on Inka Fortresses of Western Highland Ecuador\*

Written by David O. Brown, Byron Camino, Mark D. Willis

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Observations at a series of earthwork sites along the edge of the Andean cordillera in western Cotopaxi province of Ecuador have revealed new data on the Inka occupation of their northernmost regions. These sites, which form part of a network of fortresses that marks the western boundary of Inka territory in this area, are similar in many aspects to the better-known Inka fortresses of the Pambamarca area northeast of Quito. The Cotopaxi fortresses provide information on Inka military tactics and suggest that the Caranqui peoples of northern Ecuador were not the only neighboring group that the Inkas were concerned about.

The Inka empire was one of the largest and most aggressive conquest states in the Americas. With large, mobile armies led by a veteran officer corps, the Inka conquered vast areas of the central Andes. In Ecuador, the remains of their military endeavors are scattered throughout the country in the form of pucarakuna or fortresses. While northern Andean Inka civil and administrative sites were often placed with little concern for defensibility, their wellprotected hilltop fortresses were surrounded by concentric rings of massive walls and ditches.

{rokbox title=|Mapa general del área de investigación|}/images/stories/revista\_inpc/INPC\_Revista\_2\_17.jpg{/rokbox}

The study of these pucararas can provide a wealth of information, not only on Inka military tactics and objectives, but on the chronology and sequential limits of Inka conquests, as well as the nature of political relationships at their outermost boundaries, not to mention the more precise identification of where the Inka themselves may have located those boundaries.

This brief article, presented originally as a paper at the Society for American Archaeology annual meeting (Brown et al. 2008), reports on the continued reconnaissance of suspected Inka forts along the western edge of the Andean cordillera in Cotopaxi Province. In the summer of 2007, the authors revisited and conducted GPS mapping of five fortress sites and tested a system of kite aerial mapping that showed great promise. Two of the five fortress sites were located south of Angamarca, near the border with Bolivar Province: Churopucara Grande or Payapucara, the largest and in many ways the most interesting of the group, and Churopucara Chico, a site that lies farther out along the same ridge as Churopucara Grande. Farther to the north, the project mapped several forts west and southwest of Sigchos at Cerro Amanta, Pujinpamba, and Cerro Gualaya, and visited other reported nearby forts.

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Few ceramics were visible on the surface of the sites examined; those seen were largely utilitarian and offered few clues as to cultural affiliation. The conjunction of visible features strongly suggests that these are Inka sites. Previously, Chacon (1986) identified the two Angamarca examples, as well as others he had studied, as defending the Reino de Quito rather than the Inka frontier. While there are still some supporters of Juan de Velasco's (1977) lateeighteenth-century writings of the fabled Reino de Quito that supposedly held sway over the central highlands before the arrival of the Inka, there is little or no physical evidence nor is there testimony from the early chroniclers that would support the existence of such a pre-Inka Fortalezas del political configuration and some archaeologists working in Ecuador believe it a myth (Salazar 1995). Navas de Pozo (1990) suggests that the fortresses may have guarded against the Inka incursion but in our opinion their location at the extreme western edge of the highlands, apparently facing a potential enemy approaching from the west rather than the south or east from which the Inka threat would have come, makes this assessment problematic.

{rokbox title=|Fortalezas del Cotopaxi y

Pambamarca|}/images/stories/revista\_inpc/INPC\_Revista\_2\_18.jpg{/rokbox} {rokbox

title=|Características de la tierra (barro) en el Fuerte de

Angamarca|}/images/stories/revista\_inpc/INPC\_Revista\_2\_19.jpg{/rokbox}

Overall, the western Cotopaxi forts are similar to the Inka forts at Pambamarca northeast of Quito (Plaza Schuler 1976, 1978; Oberem 1969, 1986; Fresco s.f., 1984; Fresco et al. 1985, 1990; Hyslop 1990; Connell et al. 2003). As at Pambamarca, the western forts are located on hilltops surrounded by concentric rings of defensive walls and ditches and are usually topped by a small artificial platform. And like their better-known Pambamarca cousins, these western forts are also arranged in linear or lattice-like clusters, each within visual range of several other installations.

The largest examples, Quitoloma northeast of El Quinche and Churopucara Grande south of Angamarca in Cotopaxi, may have been command posts as well as quarters for reserve troops ready to rush to the defense of endangered frontline structures, and perhaps a last bastion should the frontline fall. Smaller posts such as Jantsi Rumi above Chumillos Alto on the Pambamarca massif (Brown 2009) and Amanta, along the leading edge of the forts southwest of Sigchos, may have been little more than welldefended observation posts.

The western forts do show some differences, notably the paucity of Inka stonework observed. While central and northern highland pre-Inka Ecuadorian peoples rarely, if ever, used coursed stone in wall construction (Brown 2008; Lippi personal communication 2007; Athens personal communication 2009), the Inka architects frequently employed hard volcanic stone in both

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pircastyle walls, the ordinary stonework found in the vast majority of Inka constructions, and in the more elaborate Cusco-style with finely fitted blocks found in higher status sites such as San Agustin de Callo or the Inka palace in Caranqui south of Ibarra.

{rokbox}/images/stories/revista\_inpc/INPC\_Revista\_2\_20-21.jpg{/rokbox}

{rokbox}/images/stories/revista\_inpc/INPC\_Revista\_2\_22.jpg{/rokbox}

{rokbox}/images/stories/revista\_inpc/INPC\_Revista\_2\_23.jpg{/rokbox}

### *Trincheras de tierra-barro en Pujinpampa*

In the western Cotopaxi region, however, the most prominent defensive features are trenches, often associated with an earthen wall. The trenches are still visible, at times more than three meters deep, while the likely once massive earthen walls are now little more than low mounds. There are actually several variations of trench and wall cuts depending on the slope, but several of the fortresses, including Churupucara Grande, Pujinpampa, and Gualaya, have little evidence of stone in their construction. At Churupucara Chico, one of the more imposing forts, some coursed stonework was visible in the terrace walls and constructions at the summit. Most of the other sites had occasional clusters of stone suggesting at least limited use of stone-facing on terraces and in building construction. These scattered visible stone remains may mirror the findings at the Inka fortress of Palmitopamba on the western Andean slopes in Pichincha province where, despite only a mere handful of stone blocks visible on the surface, excavations by Ron Lippi and Alejandra Gudiño (2004) revealed buried stone-walled terraces and stone foundations.

{rokbox title=|Gualaya vista desde la colina|}/images/stories/revista\_inpc/INPC\_Revista\_2\_24.jpg{/rokbox}

Still, at first glance many of the western fortresses seem to be largely earthen constructions. There is little native stone near the surface on the hillside at Churupucara Grande and perhaps even less at Pujinpampa, where visible stone constructions are also limited. Stone outcrops were observed in the vicinity of several others, however, and since distance was rarely an obstacle to the Inka transport of stone, one gets the sense that these were intentional earthworks. Chacon (1986) suggested that some of the Angamarca fortresses were never finished, a hypothesis that awaits more study but, in Ecuador where the Inka arrived very late, it is possible that these fortresses were thrown up hastily to face an imminent threat, perhaps even built to thwart the expected Spanish invasion as the empire began to collapse. Such haste

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may explain the dominance of earthen constructions at the forts.

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The defensive networks of the Cotopaxi forts do appear to mark the western boundary of the Inka expansion in this area and presumably protected against the incursion of unwanted intruders from the western slopes. Plaza Shuller (1976) first proposed a grouping of the northern Ecuadorian Inka forts based on architectural characteristics and Brown (2002) later revised this grouping based on the nature of the defensive works and the size of the installation, as well as the density and integration of the network of associated forts. In short, the more massively defended and the more densely packed, the more critical the Inka need for protection. The Pambamarca forts reflect the well-documented Inka struggle with the Cayambi and Caranqui peoples. The nearly equally impregnable western Cotopaxi forts seem to mirror a similar degree of concern, though to date we have no historical or archaeological evidence of actual conflicts in this area.

{rokbox title=|Cimientos de las construcciones|}/images/stories/revista\_inpc/INPC\_Revista\_2\_26.jpg{/rokbox}

The 2007 mapping project identified rectangular building foundations on several of the western forts. Most are arranged in regular groupings that suggest the controlling hand of the Inka state rather than the isolated huts of more recent occupants occasionally found on these generally high windswept ridges that are otherwise undesirable locations for modern settlement. In fact, there is no evidence of substantial prior prehistoric settlements on any of these fortified hilltops. The building foundations, some cut into the slopes and others marked by low rock and earthen walls, are typically about 3 to 4 meters wide and from about 5 to 14 meters long. Limited archaeological evidence suggests that pre-Inka structures in central and northern highland Ecuador are largely round or oval rather than square or rectangular (Lippi 1998, Athens 1980).

{rokbox title=|Cerro Amanta|}/images/stories/revista\_inpc/INPC\_Revista\_2\_27.jpg{/rokbox}

While evidence of buildings was not present on all the western Cotopaxi forts, the Churopucara Grande, Churopucara Chico, and Cerro Amanta all featured multiple foundations. At least five long rectangular building foundations were visible on the east side of Cerro Amanta. Tall grass

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obscured our examination of possible structures at Churopucara Chico, but it appears that as many as a half dozen buildings were present along the northern and western terraces. As many as 30 foundations were observed on the largest, Churopucara Grande. While other building foundations almost certainly await discovery at all of these forts, the evidence from this latter site suggests that permanent structures cover less than half of the open space, comparable to but with a lower density of buildings than the similar-sized Quitoloma.

On the smaller forts, the few buildings may well have sheltered most of the regular garrison in barracks type dwellings and likely served for storage and other nonresidential functions as well. Perhaps a hundred soldiers or so might have been housed in the handful of dwellings at Cerro Amanta, possibly an adequate garrison for this small fort. The more extensive enclosed space at Churopucara Grande could have held many more, though perhaps not nearly enough to defend its 1500 meters of exterior perimeter wall. As at Quitoloma, it is possible that some of the hypothesized reserve troops may have been housed in temporary shelters in the open areas.

One of the distinctive features of the Inka fortresses of Ecuador is the stone-lined square or rectangular platform found at the highest elevation on many of these sites. These often lie along at least one central axis and, in military terms, suggest a central command post and something approximating a keep, the last redoubt in case of attack. While this is doubtless true, several archaeologists (Hyslop 1990; Brown 1999) have noted that these features resemble the typical Inka usnu platform found at administrative centers, and suggested that they served ritual functions as well as military ones. The 2007 investigations brought new insights into that suggestion.

Of some importance to the understanding of the keepusnu issue was the configuration of Churopucara Grande, which has two high prominences at about 3820 meters above sea level within its perimeters. Both are large, amorphous masses that show only minimal alteration on the sides or the summits. Each is about 20 to 30 meters wide; the narrower southwestern area is about 70 meters long and the broader northeastern ridge is about 45 meters long.

At the end of a lower ridge about 60 meters northwest of the southwestern summit was a roughly rectangular platform, about 10 by 15 meters, artificially enhanced and with some evidence of stone walls. Extending outward from this platform were two low linear earthen mounds that define a trapezoidal plaza area about 16 meters on a side and perhaps 20 meters wide where it opens onto a group of a half-dozen rectangular foundations that sit at an angle to the platform and plaza. One of these is almost 14 meters long. While not identical, this configuration echoes the small plaza and kallanka-like structure seen below and adjacent to the

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summit platform at Campana Pucara at Pambamarca. A similar walled plaza is present below the platform at Churopucara Chico.

While the Sigchos forts all have ample space enclosed at the uppermost levels, and all have usnu-like platforms, none show evidence of a walled plaza on the surface.

The small usnu platform at Churopucara Grande, some 15 meters lower than the central axial prominences and with only a limited view of the perimeter walls is neither an effective command center nor the best-defended refuge of last resort. It does offer a marvelous view to the west, however, and may have been an observation post, watching for enemies approaching from the coastal slopes. This location also echoes the Inka usnu at Paredones de Molleturo in western Cañar at the western extreme of the broad plaza immediately above a precipitous drop toward the coastal plain, an excellent location to view the sunsets over the Pacific. Brown (2009) has recently noted platforms at two small Pambamarca fortresses, Jantsi Rumi and El Sombrero de Chumillos, which may have facilitated observation of the solstice sunset across the usnu-like platform.

{rokbox title=|Unsu de Churo

Grande|}/images/stories/revista\_inpc/INPC\_Revista\_2\_28.jpg{/rokbox} {rokbox title=|Plaza en

Churo Chico|}/images/stories/revista\_inpc/INPC\_Revista\_2\_29.jpg{/rokbox}

To summarize, these Cotopaxi forts appear to be Inka installations built to guard the western boundary of the empire in the Angamarca and Sigchos regions, a boundary that might have been every bit as tightly drawn as modern political boundaries. The discovery of a somewhat oddly placed usnu platform at Churopucara Grande adds support to the notion that parts of fortresses may have been dedicated to other activities. Since extensive excavations at Rumicucho near Quito recovered weaving implements and chicha brewing vessels (Almeida 1984, 1999), among other domestic remains, it is clear that, while these sites are not fortified civil settlements, they were multifunctional installations, much as are today's military bases with their chapels, PX, and recreation areas. We caution, however, that some of these remains could result from shifting functions after the primary military objective was achieved.

Nonetheless, the miniature usnu/plaza/kallanka complex seems to be part of the original design of several Inka forts and may be recognized at others. This tiny replication of Cusco's central space is likely an attempt to ground the fortress, far from the heartland, in the familiar built environment of home. At the same time, the trend away from stone constructions toward

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earthworks may indicate Inka willingness to adapt to local construction styles along the northern frontier, something seen at other Inka installations in northern Ecuador where earthen embankments are a critical part of obvious Inka fortresses. The Inka use of *cangahua* blocks, a moderately indurated fine volcanic ash underlying large areas of the northern highlands, instead of hard stone in some sites in the Pambamarca area also reflects the adoption of local styles and local materials. The styles along the northern frontier, something seen at other Inka installations in northern Ecuador where earthen embankments are a critical part of obvious Inka fortresses. The Inka use of *cangahua* blocks, a moderately indurated fine volcanic ash underlying large areas of the northern highlands, instead of hard stone in some sites in the Pambamarca area also reflects the adoption of local styles and local materials.

{rokbox title=|Churopucará

Grande|}/images/stories/revista\_inpc/INPC\_Revista\_2\_30.jpg{/rokbox}

The lattice network suggests close communication among the units, perhaps with signal fires or mirrors. Most forts have views of two or three others and where that view was obstructed, tiny intermediate platforms may have housed signalmen. The occasional larger forts suggest that whatever the size of the contingents in the outer forts, some troops may have been held in reserve to reinforce beleaguered outer line defenders. Whether the network of fortifications can be traced along the entire western cordillera edge in Cotopaxi remains to be seen but there is evidence of several Inka forts in the region between the areas mapped. The current mapped forts, however, do cluster around two major routes into the sierra, the Angamarca valley in the south and the Toachi valley in the north, two areas the Inka may have been eager to protect.

The level of defensibility and the clustering and hierarchic structuring of the fortresses suggest that the Inka worried about a serious external threat in this region, such as the major pre-Inka site Angamarca la Vieja northwest of modern Angamarca, or that they had something unusually valuable to protect behind their lines. One old man living near Sigchos confided to me that the Inka were there to mine gold, and that the forts were built to protect this precious resource. Gold could be present in the area, but the Inka must also have been keen to protect the Cañari *mitmakuna*, the colonists that the Inka had resettled there, much as the fortress at Rumicucho supposedly protected resettled *mitmaq* at Pomasqui.

Whether they protected gold, *mitmaq*, or simply a perceived boundary, and whether against the much feared yungas peoples of the cordillera slopes or the Spanish, the western Cotopaxi forts, like the ones at Pambamarca, suggest a military preoccupation not present along the entire frontier. In other areas, the Inkas felt safe with fewer and less imposing forts, and in a few places, such as the western Cañar region, with unfortified administrative centers along the edge

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of the cordillera. Given this, it would seem that the forts are an important clue to Inka provincial foreign policy, with size and configuration of the forts a potential key indicator of the Inka concern for their relations with neighboring peoples at the ever shifting boundaries of the empire. And since Inka conquests seem to have been frequently congruent with extant ethnic boundaries, we suggest that these Inka boundaries could even provide clues to pre-Inka social and political networks.

### Note:

*\* Revised from paper delivered at the 2008 SAA Meeting, Vancouver, BC*

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