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The Emergence of Complex Society in the Titicaca Basin: The View from the North

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INTRODUCTION

The Titicaca Basin straddles the modern countries of Peru and Bolivia and represents one of the great areas of prehistoric cultural evolution on the globe. While it is common to view the Andes as a culturally-unified whole, the reality is that there were three very distinct cultural, geographical, and linguistic regions in the Andes in the 16th century where these state societies developed (Figures 9.1, 9.2). These regions corresponded to the general areas of Wari, Moche, and Tiwanaku state expansion in the late Early Intermediate Period and Middle Horizon where proto-Quechua, Mochic, and Jaqi languages dominated respectively (Browman 1994; Mannheim 1991; Stanish 2001). In short, the Titicaca Basin, where Jaqi or proto-Aymara was dominant and was most likely the language of the Tiwanaku state (see Janusek 2004 for a fuller discussion), represents one of the great areas of first-generation state development in world.

In areas where first-generation states developed without much influence from neighboring areas, such as the Titicaca Basin, we can study the processes by which complex society emerges. The term "complex society" is of course controversial. We reject totalizing notions of cultural evolution and instead see the evolution of complex society as confined to political and economic organization. Cultural complexity is defined as a process of increasing heterogeneity in economic and political organization with craft specialization, proliferation of political and social statuses, creation of economies of scale and so forth as the key indices of complexity. Evolution is likewise not stepwise nor unidirectional. Political and economic organizations become increasingly more heterogeneous as well as becoming more homogenous with some frequency (see Marcus 1992 for a discussion of cycling in complex societies). It is critical to note that other aspects of human culture do not evolve in this way. The evolution of complex society can therefore be measured by the increase or decrease in the differentiation and heterogeneity of political and economic lifeways (Plourde 2006; Stanish 2004).

In this paper we examine this critical question in anthropological archaeology—the emergence of politically and economically complex societies—with information from the Titicaca Basin. We will show that while our knowledge of this cultural

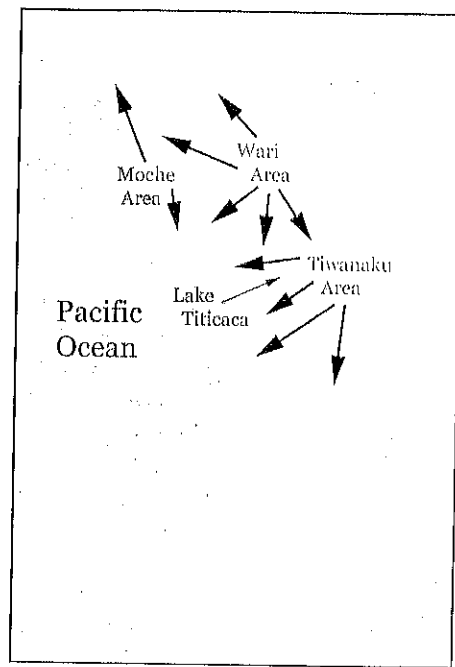


Figure 9.1. Early states in the Andes.

process in this area of first-generation state development is simultaneously scarce throughout the region as a whole, there are pockets of intensive research that have provided crucial data. While excellent work has been done in the last one hundred years in the region, we are still far from an understanding of this process to the degree that exists in Mesoamerica and Mesopotamia.

On the other hand, we will demonstrate that archaeologists have made great strides in framing the question in testable terms in the Titicaca Basin. New empirical work by scholars such as Christine Hastorf, John Janusek, Alan Kolata, Carlos Lémuz, Sonia Alconini, Matthew Bandy and others in the south, plus work by scholars reported on here in the north Basin, have eliminated previously viable explanations and have pointed us in new directions. We will assemble data from survey and excavations by our colleagues that allow us to frame and reorient the issue of the emergence of complex society in the northern Titicaca Basin. In short,



Figure 9.2. Map of the Titicaca Basin.

we focus on the first sedentary, complex societies in the Titicaca Basin—Qaluyu and Chiripa—that emerged in the first half of the second millennium BC.

EARLY COMPLEX SOCIETY IN THE TITICACA BASIN

During the 6th through 11th century AD, the urban center of Tiwanaku grew into the capital of only one of three indigenous states in South America, and one of the few in the world (Janusek 1994; Kolata 1993; Ponce S. 1995; Stanish 2001, 2003; Stanish et al. 2002; Vranich 1999). This period, known variously as the Middle Horizon, the Tiwanaku Expansive Period, the Tiwanaku Period (and so forth) represents the highest expression of political and economic organization in the circum-Titicaca Basin until the Inca state invasion of the 15th century. The period immediately prior to the apogee of Tiwanaku as an expansive state is known variously as the Early Intermediate Period, the Upper or Late Formative Period, Qeya in the south, and Pucara in the north. We prefer the term "Upper Formative" for this time period for the Titicaca Basin as a whole, recognizing the extreme variability in local sequences at the same time. The period prior to the

Upper Formative, defined as the Middle Formative (Stanish 2003), is the time in which the first politically and economically complex societies developed in the circum-Titicaca Basin and is the focus of this paper.

As defined above, the first Middle Formative complex societies in the Titicaca Basin are locally known as Chiripa and Qaluyu. We have known for years (Rowe 1956; Lumbreras 1974; Kroeber 1939; Valcárcel 1925, 1932, 1935, 1938) that the earliest complex societies in the Titicaca Basin developed roughly in tandem in the far south and far north of the lake area. The far northern Titicaca Basin today and in the 16th century was home to Quechua-speakers with a smaller mix of Pukina- and Aymara-speakers. This is the core area of the Qaluyu culture. The far southern Titicaca Basin today and in the 16th century was the heartland of Aymara-speakers. Two other minor languages—Pukina and Uruquilla-Chipaya—were also spoken in the Desaguadero River drainage to the south toward Lake Poopó. This is the area of Chiripa culture. The work of Wendell Bennett (1936), Alfred Kidder II (1956) and Carlos Ponce S. (see 1995 for a review) established the site of Chiripa, located on the Taraco Peninsula, as the icon of pre-Tiwanaku archaeology.

This cumulative work produced a number of chronologies for both regions, a result of the cultural historical or space-time systematics focus of archaeology of that era. At times, these sequences were inconsistent in terminology. Some of the periods were, and continue to be, huge blocks of time and often the absolute dates did not match. We continue to refine our chronologies with new data and interpretations. The chronology that we use is a dual one, with several absolute phase sequences for various parts of the Titicaca region (over 50,000 sq kms in size) that exist parallel to a stage designation chronology. The stage chronology reflects the political and economic structure of the most dominant societies in the Basin at the time (Figure 9.3) and has proven to be an effective regional chronology and a viable substitute for the Ica sequence chronology used in the central Andes (see Stanish 2003).

CHIRIPA AND THE SOUTHERN TITICACA PRE-MIDDLE HORIZON CULTURES

The site of Chiripa was first excavated by Bennett in his 1933–1934 season in Bolivia. The large number of monoliths at this otherwise small, hacienda-owned and protected site was indeed impressive. This fact plus Bennett's status as one of the premier Andean archaeologists at the time served to push Chiripa as representative of the earliest complex societies of the southern Titicaca region. Later on, Alfred Kidder II and Michael Coe worked at the site as well, defining their own chronologies (e.g., Kidder 1956). Work in the 1980s and 1990s at related sites by a number of scholars, including Juan Faldín (1990, 1991), Max Portugal Ortiz (1988a, 1988b, 1991, 1992), Marc Bermann (1994), Alan Kolata (1993) and others reinforced this view of the primacy of Chiripa as the type-culture for the pre-Tiwanaku periods. The Chiripa phenomenon figures prominently in the

Chronology in the Titicaca Basin

	North	West	South	Isle del Sol	Stage	Ica
1500	Inca	Inca	Inca	Inca	Expansive Inca	Late Horizon
	Colla	Lupaca	Pucallpa	Altiplano States	Regional Period	Late Intermediate
1000	Late Huari	Tiwanaku	Tiwanaku V	Tiwanaku	Tiwanaku Expansive	Middle Horizon
500	Early Huari		Tiwanaku IV			
		Late Sillimococo	Qeqa			
AD/BC	Pucallpa		Kalasasaya Late Chiripa	Late Tiwanaku	Upper Formative	Early Intermediate Period
500	Chiripa	Early Sillimococo	Middle Chiripa	Early Tiwanaku	Middle Formative	Early Horizon
1000	Qaluyu		Early Chiripa	Paucari		
1500					Early Formative	
2000					Late Archaic	

Figure 9.3. Chronology of the Titicaca Basin.

modern syntheses of Andean prehistory by Luis Lumbreras (1974) and Michael Moseley (1992: 145–148).

Bennett's work revealed a sequence of three or four levels, the first of which he called "Pre-mound." These stratigraphic levels corresponded to the natural contours of the hill. This indicates that this occupation was not characterized by any type of corporate construction that modified this area near the lake. Bennett (1936: 430) found evidence of domestic occupation, including "rough stone walls . . . , ash beds, stones, fish, animal and human bones, and pottery fragments." These limited data suggested an agglutinated village on a low hill above the lake.

The second set of strata that Bennett grouped into a single cultural period was characterized by a "circle of houses" with a diameter of approximately 32 m (Bennett 1936: 430). These houses were built on an artificial "ridge" that was "built specifically for the houses." This occupation was ultimately destroyed by fire with the old surface covered with adobe bricks. This event left a low mound with a slight depression in the center (Bennett 1936: 431), perhaps the first sunken court at the site in this relatively early period (Stanish 2003).

Alfred Kidder and Michael Coe enlarged upon Bennett's work at the site with brief excavations in 1955, with the goal of gaining more information on the houses he had discovered (Kidder 1956: 144). In addition to obtaining more detail on the plan of the circle of houses, Kidder and Coe uncovered a set of houses lying

underneath those found by Bennett, and beneath this "Lower House Level" an earlier level of occupation, which they termed the "Sub-Lower House Level." This lowest level may correspond to Bennett's "Pre-Mound" strata, or may have been construction fill for the Lower House Level structures (Bandy 1999a: 14); unfortunately excavation into the lowest level was very limited and the results of the excavation were not fully published. The map of the houses and a description of the excavations were published by Karen Mohr Chávez (1988).

Chávez renamed Kidder's and Coe's levels as Early, Middle, and Late Chiripa. She assigned to Early Chiripa a date of 1400–900 BC and suggested that the Middle Chiripa dated to 900–600 BC (K. Chávez 1988: 18). The Early and Middle Chiripa occupations at the site, corresponding to Bennett's Pre-mound and House phases, represent the Middle Formative Period occupation in the general chronology utilized here. The Middle Formative is also represented by the structures discovered by Kidder and Coe below Bennett's House level.

The most recent work at the site has been directed by Christine Hastorf and represents a qualitative increase in our understanding of this important site. The meticulous work of the Taraco Archaeological Project provides us the best excavation data from any comparable site in the Titicaca Basin to date. Hastorf et al. divide the sequence into Early, Middle, and Late Chiripa as well, revising the dates listed above. Systematic surface collection data by Matthew Bandy indicate a scatter of Chiripa pottery over 7.5 ha at its height (Bandy 1999b). As he describes it, this latest work at Chiripa "firmly establishes the existence of large-scale, nucleated habitation at least by the Late Chiripa phase" (Bandy 1999b: 26). Hastorf's project provides us with revised dates for the Middle Formative Period (reported by Whitehead 1999): Early Chiripa at 1500–1000 BC, Middle Chiripa at 1000–800 BC, and the early part of Late Chiripa. Late Chiripa is dated by Whitehead to 800–100 BC.

Hastorf's team discovered a very important semi-subterranean structure 200 m south of the main mound (where Bennett, Coe, and others had excavated previously) that dated to 800–750 BC. In the theoretical framework adopted here, such structures are indicative of political and economic complexity (and see Stanish 2003, 2004). The Llusco structure, as they term it, is a semi-subterranean construction with a plaster floor. It measures approximately 11 × 13 m. The walls are constructed with "rounded cobbles and clay." José Luis Paz Soria (1999) further reports the existence of a "drainage canal, an attached wall, and the presence of a new floor in the interior." Presuming the presence of an adobe superstructure (Paz Soria 1999), the Llusco structure would have been an impressive construction. It would have been almost 150 sq m in size, sunken partially into the earth, with plaster walls that may have been painted, a subterranean drainage system, and a well-made white plaster floor. The Llusco structure represents one of the earliest such structures known in the region and, as such, indicates some of the earliest evidence of political and economic complexity.

It is significant that Hastorf reports at least one, and possibly two more of these structures at Chiripa that are either contemporary with or even earlier than the Llusco structure (Hastorf 1999). Each of these is about 13 m on a side, square, and semi-subterranean. It is a reasonable hypothesis that there are other similar struc-

tures at Chiripa, and at other Middle Formative sites in the region, as has been confirmed by Robin Beck in his excavations at Alto Pukara, and Matthew Bandy in his survey of the Taraco Peninsula.

Bandy discovered several sites along the Peninsula dating to the Middle Formative that contained public architectural complexes (Bandy 2001: 128), and in fact his data suggest an increase during the Middle Formative in the elaboration and scale of public architecture (Bandy 2001: 139). At this time Chiripa constituted only one of four principal villages located on the Peninsula, which collectively constituted the first of a two-tier settlement size hierarchy. While none of the other Formative sites had yet been excavated, Bandy hypothesized it unlikely that Chiripa was unique in its possession of corporate architecture. He notes that several of the larger sites, including Yanapata and Achachi Coa Kkollu, have monumental terraces very similar to the one at Chiripa upon which the house complex is located, and the presence of many large, shaped stones that would suggest architecture. Several of the second tier sites also have terracing.

Beck conducted excavations in 2001 at one of these sites, Alto Pukara (2004a). While the terrace at this site is smaller than that at Chiripa, approximately 20 × 20 m, he discovered a pair of structures arrayed on either side of an open plaza located on top of the terrace. He interprets these structures as being similar in construction and function to the Lower Houses at Chiripa (Beck 2004b: 330), first discovered by Kidder and Coe (Kidder 1956; see also Chávez 1988) but excavated in much greater detail by Bandy (1999c). The structures at Alto Pukara were contemporaneous with those at Chiripa and very similar to them in numerous ways, including the presence of niches that may have been used as ritual storage facilities, following Chávez's (1988: 19) interpretation, and the presence of a red-floored patio area (Beck 2004b: 334). Beck's excavations confirm the presence of ritual architecture at other sites within the region as well. This suggests that while Chiripa was very likely well-integrated into Middle Formative political landscape, it was by no means the only location in the area where such process was occurring.

What is Chiripa?

The word "Chiripa" is confusing. It is at once an archaeological site, a type site, a time period, a ceramic and art style, a culture, an archaeological horizon marker, and an icon of Bolivian prehistoric science. Because Qaluyu holds a similar status in the north, it is necessary to examine the significance of the Chiripa "concept" given our new data of the last decade or so. The site of Chiripa itself is of course an extremely important site and is the best-excavated pre-Middle Horizon site in the southern Titicaca Basin. Until the last generation, however, Titicaca Basin archaeology was largely conducted without regard to regional considerations¹. Sites were excavated, pottery styles described, and cultures created largely from single-site excavations. This paper is not the arena to discuss the problems inherent in the "type-site" concept, but suffice to say that both Chiripa and Qaluyu embody all of the problems associated with that concept. As a result, sites like Chiripa and

Qaluyu took on an importance far larger than their actual size or complexity would allow given the regional data base that we now have.

An example is the survey by Bandy (2001) who discovered a number of contemporary settlements as large as or larger than Chiripa on the Taraco Peninsula. Settlement size alone is not necessarily an indicator of importance. However, the degree to which the size of the settlement is commensurate with the population, and the degree to which larger settlements have corporate architecture, reflects the degree to which they are central in the political and economic landscape of any region (see papers in Billman and Feinman 1999; Wright 1994).

The site of Lukurmata is likewise massive compared to Chiripa, almost certainly the major settlement on the Taraco Peninsula at the time far dwarfing Chiripa as a political and economic center (Bermann 1994; Stanish 1989). There is a large Chiripa period occupation at Lukurmata, and it is likely that the present sunken court found at the top of one of the hills had antecedents in Chiripa. We also know that the site of Tiwanaku has a substantial pre-Tiwanaku (i.e., before approximately AD 400–500) population making it possibly the largest site in the region. In short, at its apogee, the site of Chiripa was merely one of a number of large, architecturally-complex settlements around the southern Titicaca Basin.

The importance of Chiripa lies more with the fact that the monoliths at the site were protected by a hacienda owner and that this owner permitted a distinguished archaeologist to excavate and record the data from the site at a critical "formative" juncture in Bolivian archaeology. The simple fact is we do not know where the principal Chiripa settlement was during the height of the Chiripa phenomenon circa 500–100 BC or after, up to the beginning of Tiwanaku IV. Candidates include Tiwanaku, Pajehiri, Lukurmata, Khonko Wancané, sites discovered by Bandy on the Taraco Peninsula, and a slew of sites still unworked in the Huatta Peninsula (Lémuz 2001), Koani Pampa, and Desaguadero river valley (see Janusek 2004). In fact, we do not even know if a strict hierarchical model even works for this phenomenon. Given our present data base, it is entirely possible that a heterarchical model characterized by a series of similarly sized and politically and economically equal sites existed in the southern Titicaca Basin during the immediate pre-expansive Tiwanaku periods. As we shall see, a very similar situation exists in the northern Titicaca Basin as well.

QALUYU AND THE NORTHERN TITICACA PRE-MIDDLE HORIZON CULTURES

The nature of Tiwanaku expansion into the north Titicaca Basin is vastly different from that in the south (Stanish 2003; Stanish et al. 2002). The Tiwanaku settlement system north of the Ilave and Escoma river valleys is sporadic and strategically targeted at roads and sustainable areas near rivers, bays and/or potential raised field areas (and see Schultz and Sosa Alcón 2003; Cohen n.d.; Stanish and Plourde 2000). The logic of Tiwanaku expansion outside of its core area is most certainly related to interregional economic exchange, and this is most emphatically demonstrated by the survey data from the north (Plourde 2006; Stanish and Umire 2002).

In the south, Ponce sought, with a nationalist zeal equal to Posnansky, to emphasize Tiwanaku chronological primacy over Wari by incautiously labeling his early, pre-urban periods at the type site of Tiwanaku as "Tiwanaku I-III." We now know that Tiwanaku II simply does not exist separate from Tiwanaku I by any rational typological logic (Stanish 2003:165–166). If chronological periods are to have any relationship to cultural complexity and continuity, style, interregional relationships etc., then Tiwanaku I has little to do with Tiwanaku IV or V. Likewise, Tiwanaku III is better referred to now as Qeya which dates to circa AD 200–400/500, a period that represents a pre-urban, pre-expansive polity that did not produce pottery, stone sculpture or other art or architecture much related to Tiwanaku IV (see Bermann 1994; Janusek 2004; Bauer and Stanish 2001; Stanish and Bauer 2004). Therefore, the period between the Late Chiripa of Hastorf et al. that ends at 100 BC and the beginning of Tiwanaku IV around AD 500 is not culturally Tiwanaku insofar as the latter term refers to an expansive state of great political and economic complexity. This period, representing no less than five or six centuries and most profitably referred to as the Upper Formative, remains a major problem for southern Titicaca Basin specialists.

Fortunately for those of us who work in the north, this is not much of a problem. This is because this late Middle and Upper Formative time is dominated by a large site that started to produce a distinctive fancy art style by 500 BC and stopped producing such objects and architecture by around AD 300, perhaps a bit later (Mujica 1987). There was no Tiwanaku-equivalent to obscure the Upper Formative Period occupation of the area. This iconic site for the north was, and remains, the proto-urban center of Pucara mentioned as early as the 16th century by the Spanish scholar Cieza de León who visited it and immediately recognized it as pre-Inca in date (Figure 9.4). Pucara is the most complex pre-Middle Horizon site in the area and its position as the most important site has not changed in

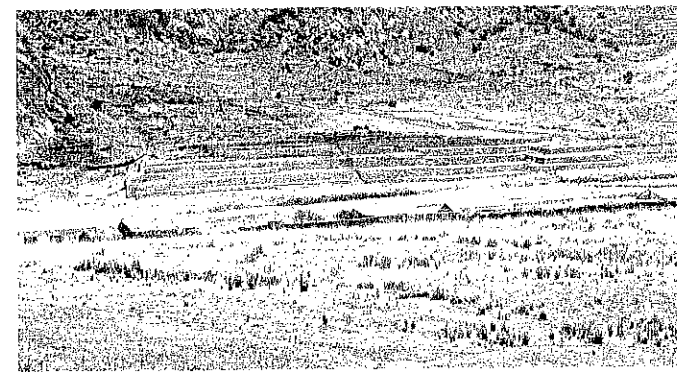


Figure 9.4. The site of Pucara.

several decades (Lumbreras 1974; Lumbreras and Amat 1968). As Kidder (1948: 89) remarked in a short review of Titicaca Basin prehistory in 1948, "It would still appear that Pucara represents one of the larger, if not the largest, center of a northern Titicaca basin culture."

Kidder's observation remains true to the present day, and recent survey research makes it highly unlikely that any site will be discovered in the northern basin that is larger than Pucara at its height around AD 200. Unlike the south, therefore, we have no Upper Formative Period "early Tihuanaco" underneath a huge urban center to "obscure" our chronology. The residents of Pucara ceased to create objects identifiable as Pucara circa AD 300–400, a century or two before the time that the people of Tiwanaku began to build a proto-urban center as complex as Pucara. They likewise ceased building bigger temples on the site and instead, the site fell into a general decline with post-Pucara occupations living in a much less complex and extensive settlement (Klarich and Pinto P. 2003). Unlike Tiwanaku, the buildings that remain near the surface of Pucara provide us with a snapshot of Upper Formative Period life in the north. In other words, we know with some certainty when Pucara stopped as a complex polity and when post-Pucara began and we have a reasonably good view of what it looked like at that time. We can not say that about the Tiwanaku area or the rest of the south Titicaca Basin. Whenever Qeya or Tiwanaku III (or whatever one wishes to call it) ends and "Tiwanaku" as an urban, state polity begins, is a typological nightmare for any sentient archaeologist working in the area.

However, like the south for the earlier Middle to Upper Formative Period transition, the Pucara culture obscures the transition between the earliest complex societies and the more complex one of Pucara itself. The site of Pucara happens to have a sequence of temples or sunken court complexes beginning many centuries before its collapse. These are associated with the Qaluyu culture and they represent the "Chiripa" equivalent in the north.

The type-site of Qaluyu was discovered by Manuel Chávez Ballón and was recognized to be a settlement with a pre-Pucara occupation early on in the course of modern archaeological studies of the Titicaca region (Rowe 1963). It was test-excavated in 1955 by Alfred Kidder II and Chávez Ballón, with carbon dates provided to K. Chávez (1977: 1022) for her synthesis of Early Horizon pottery in her dissertation. The Qaluyu type-site is a moderate-sized mound that John Rowe felt was intentionally built in the shape of a catfish, an interpretation with which we disagree on the basis of our observations and topographic mapping. The dominant culture of the north Basin is therefore known as Qaluyu. This culture traditionally dates between 1400–500 BC (Browman 1978a, 1978b, 1980; Mohr 1966; S. Chávez 1992; Wheeler and Mujica 1981; Stanish 2003).

The site of Qaluyu is just a few kms from Pucara. Its proximity to the major iconic site of Pucara certainly enhanced its status as a major candidate. Chávez Ballón, Kidder, and Rowe, among others, based upon observations at Qaluyu and at other sites in the region such as Balsas Pata (or Pueblo Libre) in Ayaviri, argued that Qaluyu represented the pre-Pucara occupation in the north. Rowe (1956: 6) described Qaluyu as a large habitation mound with refuse that covers "several acres

in extent." With at least three of the great Andeanists of their time (Chávez Ballón, Kidder, and Rowe) providing their imprimatur, Qaluyu took on iconic status.

Later on, K. Chávez (1977: 1020) worked at the site and noted that it was about 14 ha in size. As mentioned below, we calculate the Qaluyu Period site area at Qaluyu at a little more than half that size. K. Chávez mentions that "Qaluyu refuse is not present in all of that [700 × 210 meters] area." Therefore, our respective methodologies differed: we only measured the area of Qaluyu surface evidence (pottery and architecture) whereas Chávez referred to the entire site that had both earlier and later occupations. We concur that the entire site area of the site of Qaluyu, including all occupations, approaches Chávez's estimates but conclude that the Qaluyu habitation and corporate architecture areas covered about seven hectares or perhaps slightly more.

Chávez found Qaluyu materials in three out of five units excavated. She discovered two subphases, the first dating from as early as 1400–1100 BC. A second phase was dated to 1000–600 BC based not on materials from Qaluyu itself but on comparisons with her main work at Marcavalle near Cuzco.

Later work by a number of outstanding scholars, including Jane Wheeler and Elías Mujica (1981), Mujica (1979, 1987, 1991), Rowe (1963), Rowe and Brandel (1971, 1975), S. Chávez (1975, 1981, 1988), S. Chávez and K. Chávez (1969, 1970, 1975), William Conklin (1983), Edward Franquemont (1986), Máximo Neira (1962, 1967) at Pucara and Qaluyu or on their artifacts has contributed greatly to the cultural history of these societies.

What is Qaluyu?

All of the problems inherent in the Chiripa "type-site" concept are embodied in the Qaluyu "concept" as well. Like Chiripa, Qaluyu has iconic status well beyond its importance as measured by size and complexity of the settlement. Like Chiripa, Qaluyu is an archaeological site, a type site, a time period, a ceramic and art style, a culture, an archaeological horizon marker, and an icon of sorts for pre-Pucara culture in the south central Peruvian highlands. But Qaluyu does not enjoy the same relative status as Chiripa because Peruvian archaeology is vastly larger and more complex than Bolivian archaeology, with many spectacular archaeological cultures such as Moche, Nasca, Wari and Inca. Nevertheless, for the smaller subset of Titicaca Basin archaeologists, Qaluyu holds a very important position similar to Chiripa in the Bolivian Altiplano. Likewise, as a horizon marker, Qaluyu is usually viewed as more restricted in scope than Chiripa. In the latter case, Bolivian archaeologists have identified "Chiripa" culture as far away as the Amazonian drainage (e.g., Faldín 1990, 1991).

As mentioned above, partial mapping of the site by members of Programa Collasuyu indicates that the Qaluyu occupation of the site was at least seven hectares in size, and probably a bit larger but still within the 7–10 ha range². There is substantial evidence of corporate construction over the site and through time over the entire mound area. Several low terraces were built on at least the north and south sides. These terraces have remains of domestic artifacts and were most

likely habitation areas. The surface features also indicate that there were at least five, and probably several more sunken courts at the site. The sunken courts were built with large, shaped blocks typical for Formative Period political centers in the Titicaca Basin. These are comparable to the largest surface sunken court at Chiripa.

We can now say that the Qaluyu type-site was one of the largest Middle Formative Period settlements in the Pucara Valley, although it is smaller than a number of other sites in the northern Titicaca Basin (see Cohen n.d. for survey data from the Pucara valley). The site was characterized by a massive mound built with fill, used to support complex architectural compounds. This mound supported a number of sunken court complexes that do not appear to have been constructed under any architectural plan. That is, the courts appear to have been slowly added, growing by accretion over time. Associated with these sunken courts are possible contemporary structures, along with a substantial domestic area along the sides. As mentioned, there are Qaluyu occupations under the main temples at Pucara. Excavations by archaeologists working with a UNESCO project indicate that the visible surface temple that dates to the Upper Formative was built over an earlier one. Thomas Lynch (1981) reports that this earlier one dates to 800–200 BC (and see Mujica and Wheeler 1981). This early date would place the earlier temple squarely within the Middle Formative or Qaluyu period contemporary with the construction of similar structures at Chiripa.

The relative importance of the Qaluyu type-site, as indicated by size and complexity, was reinforced by Amanda Cohen in her survey of the Pucara Valley. Given the fact that Pucara and Qaluyu were located in the Pucara valley, it was assumed for years that this valley was the most densely occupied area of the northern Titicaca Basin. Recent settlement survey research in the Arapa, Taraco, Huancané, and Putina areas unequivocally contradicts this assumption. In fact, while rich in archaeological sites of all time periods, the Pucara Valley is curiously one of the least intensively occupied river drainages on the north side of the Titicaca Basin. Our recent work (since 1999) in the rest of this area indicates that the largest density and complexity of Qaluyu period occupation centers around the towns of Arapa and Taraco, with substantial Qaluyu-related sites located far up the Huancané-Putina valley. There are undoubtedly a number of Qaluyu sites in the Azángaro region and the Lampa area is poorly-explored to date. The type-site of Qaluyu is, in fact, an outlier of Qaluyu culture. Qaluyu is a settlement that squarely falls in the second tier of site sizes for the Qaluyu period.

RECENT RESEARCH IN THE NORTHERN TITICACA BASIN

In the last several years, we have conducted survey and excavations in the northern Titicaca Basin. We focused on several areas including the Huancané-Putina river valley, the area around Lake Arapa, and the area south of Arapa along the Río Ramis in the Taraco region. From 1999–2001 we conducted a full-regional coverage of the entire Huancané-Putina river valley. From 2002–2004, we completed

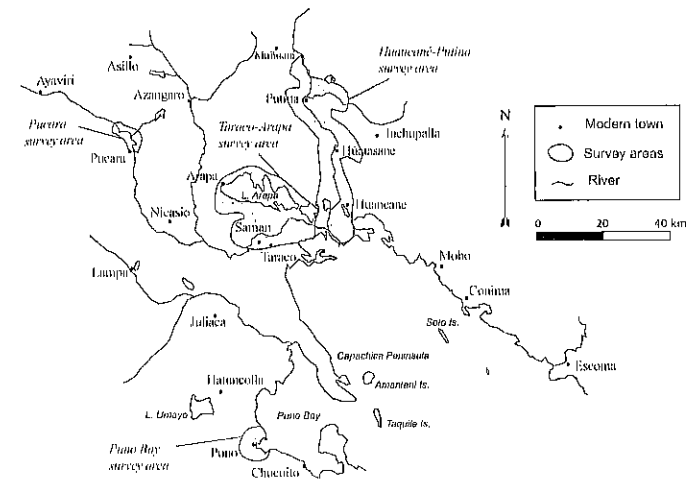


Figure 9.5. Survey areas in the northern Titicaca Basin.

survey in the Arapa and Taraco areas. Data from the 1999–2001 seasons have been analyzed and we are completing work on the Arapa and Taraco areas (Figure 9.5). Fortunately, we have enough preliminary results to report to allow us to assess the Qaluyu presence in the region. Of the more than 1,280 new sites recorded in the survey areas, at least 280 have Formative Period occupations (Qaluyu- or Pucara-contemporary). Of these, a significant proportion has Qaluyu pottery. At least two dozen Formative sites are in the size range of the type site of Qaluyu (5–10 ha of domestic residence and corporate architecture) and several sites are substantially larger (over 20 ha). There are two clusters of Qaluyu sites near Arapa and Taraco that comprise settlements complexes vastly larger than Qaluyu and nearby sites. Recent excavations at the town of Taraco by Stanish (Stanish and Chávez 2004) indicates a long Qaluyu and Pucara sequence at this town which also is home to a very high density of Qaluyu and Pucara stelae.

Recent Excavations at the Site of Cachichupa

The Huancané-Putina valley is located in the northeast corner of the Titicaca Basin and constitutes one of the five major river drainages of the Lake. The valley runs for approximately 35 kms to the north from the edges of the lake to the mountains that separate the Amazonian drainage from that of Lake Titicaca. The Huancané-Putina valley varies in width between 1–10 kms. At the confluence of the Ríos Lloquecolla y Pongongoni, the valley merges into another river leading to the

modern town of Inchipalla where it in turn runs towards the eastern slope valley of Sandia.

In 1999 Aimée Plourde conducted test excavations at a major Formative site known as Cachichupa. Noted during the initial reconnaissance of the valley in 1998 as being one of the larger Formative sites, full-coverage survey in the valley in the following seasons revealed that it falls into a pattern of sunken court sites placed at roughly equi-distant intervals up the entire length of the valley. Sculptural and ceramic evidence from these sites suggests a Middle Formative date for many of them. Cachichupa is located approximately two thirds of the way up the valley on the western side, in a strategic position where the sides of the valley narrow to produce an opening only 1 km in width. This geological formation could give the site's occupants control of traffic passing through the valley, which must pass through the narrow opening created by the river. In addition to the fact that traffic must actually pass right through the site, as does the modern road today, the site also commands a view several kilometers in either direction, which would further assist in its control of traffic through the valley. This supposition is lent strength by the fact that another larger Formative Period site, HU-30, located under the modern town of Putina and itself located at a strategic position for the control of traffic to the eastern slopes, is visible from the highest portion of Cachichupa.

Cachichupa is approximately 5–7 ha in size with two major components: a set of large terraces up the slope of the hill side, and a series of what we provisionally term "compounds" at their base, outlined by wall foundations made of shaped stone visible on the surface. The terraces are much larger than typical for agriculture or normal residence; the largest of these measures 20 m wide, 40 m long and was probably 6 m in height at the time of construction. Radiocarbon dates obtained from the terrace date its construction to 1400 BC. Further, the dates from the entire sequence cluster tightly, giving the impression that the entire construction occurred in a limited amount of time, possibly one episode. The early date of construction is confirmed by the presence of an intrusive pit into the surface of the terrace, which yielded a cache of decorated Qaluyu pottery, including a piece that has a modeled figure in low relief on the exterior of the vessel, very reminiscent of a Yaya-Mama female figure. Radiocarbon dates from this pit date it to 1000 BC. This pit caps the construction of the terraces during the Middle Formative Period, and suggests that ritual/ceremonial activities were taking place on the terrace or in conjunction with its construction. Unfortunately, intensive surface collection of the site encountered very few decorated ceramic fragments that could be attributed to Qaluyu, and therefore the extent of the Qaluyu occupation at the site is unclear. However, all of the terraces and the compounds at their base contained a high density of utilitarian forms with the mica tempered paste characteristic of the Middle and Upper Formative Periods.

The compounds at the base of the terraces (17 in total) are very likely areas in which ritual occurred, and also might be areas of craft production and/or elite residence. Excavation in one of the best preserved of these produced evidence of corporate architecture in the form of a probable sunken court with surrounding

structures, the presence of one and possibly more large, shaped monoliths, evidence of feasting or other ritual activities, and elite burials. Radiocarbon dates from the excavation of this court complex firmly establish it in the Upper Formative Period. However, as mentioned above, the extent of Middle Formative occupation at the base of the terraces is not clear from surface collections, and excavation in other compounds could possibly reveal Middle Formative deposits.

Finally, it is worth noting that several lines of evidence from the site indicate that the inhabitants of Cachichupa had access to non-local goods, and mostly likely ones coming from the eastern Amazonian lowlands. A fragment of a carved bone snuff spoon was recovered during excavation of the Middle Formative terrace, implying that hallucinogenic substances, possibly from lower elevations, were being consumed at the site during this time. More direct evidence of contact with the lowlands was found in the form of fragments of numerous undecorated ceramic jars, bearing the impression of tightly coiled basketry on their bases. To date, we know of only two other places where vessels with such a motif have been found: central lowland Bolivia and the Pucara type site itself.

Although these data are preliminary, the discoveries made at Cachichupa have important ramifications for conceptualizing the Middle Formative political landscape. While it is not likely that the Middle Formative occupation at Cachichupa is more extensive than that at the type-site of Qaluyu, the construction of its massive terracing as early as 1400 BC suggests that some kind of elite-directed or managed corporate group or groups existed by this time. Additionally, the presence of different kinds of evidence suggesting access to eastern lowlands goods lends support to the idea that a political economy built in part through the control of the exchange of such goods was already underway.

CONCLUSION: QALUYU IN PERSPECTIVE

The first complex societies in the northern Titicaca Basin are known collectively as Qaluyu. As such, the term Qaluyu serves as a horizon marker for a particular moment in the cultural evolutionary history of the Titicaca Basin. The processes of the emergence of complex society in the northern Titicaca Basin parallel those in the south. There is even some reason to suspect that the first complex societies in the north predate those in the south by a century or two, perhaps as a result of an interaction with the complex contemporary societies in the Ayaviri and Cusco valleys to the north. This proposition remains to be tested with future data.

We can now confidently say that the type-site of Qaluyu is one of more than several dozen sites of equal or greater complexity in the northern Titicaca Basin. Qaluyu is historically important, but analytically it is no more important than most other second-tier contemporary sites in the region. As in the south, we face a question: was there in fact a Qaluyu regional center or capital, or was Qaluyu society characterized by a heterarchically-structured society with a series of peer-polities of roughly equal size distributed over the northern Titicaca Basin centered

on the Lake of Arapa and north to Ayaviri (e.g., Stanish 2003: 5, map 1.3). Our survey data suggest the latter; that there was indeed a classic site size hierarchy of Qaluyu settlements that peaked around 800–500 BC. Certainly the Huancané-Putina survey data indicate a plethora of small Formative sites under 1 ha, many sites in the 1–5 ha range, at least two dozen sites larger than 5 ha, and a few of substantial size and complexity, the magnitude of which is yet unknown. At present, we have identified several “candidates” for the main Qaluyu settlement at its height, including the site of Pucara and associated settlements, the cluster of sites at Taraco, the cluster of sites near Arapa, possible site clusters near Balsas Pata in Ayaviri, and possibly the site of Canchacancha-Asiruni and associated settlements in the Azángaro river valley³.

Stanish (2003: 111) has hypothesized earlier that the Middle Formative was characterized by three site size categories: regional centers, villages and hamlets. The discovery of tightly-clustered settlements that formed a single functioning political entity could alter this to include a fourth, higher-level settlement category—in effect a regional “capital” that integrated the entire north in a classic chiefdom organization of intraregional political and economic cooperation and interregional exchange. This is, in our view, a central question about the political and economic structure of Qaluyu. If these settlement clusters are indeed contemporary, then we can hypothesize central places of at least 50 ha in the case of Taraco and Arapa, possibly other areas such as Pucara, Ayaviri, or Canchacancha-Asiruni. If, on the other hand, these settlement clusters turn out to be non-contemporary “palimpsests” of sites that moved over the landscape in a restricted area, then the three-tiered model still holds and a heterarchical model may still hold for Qaluyu political organization.

In short, we have learned much in our investigations in the northern Basin. We have eliminated any model that places the type site of Qaluyu as the principal settlement. We have identified scores of sites as large or larger than Qaluyu itself, and have identified a clear site size hierarchy of settlement. Qaluyu was the first complex society in the Titicaca Basin. Future research promises to provide fascinating new insights into this formative culture of one of the world’s great centers of early civilization.

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ENDNOTES

1. A modest exception would be Kidder’s (1943) and Tschopik’s (1946) reconnaissance of the western and northern basin.
2. We were able to map about 50% of the area of the site. One landowner did not give us permission and we therefore were unable to complete the map. Unfortunately, in this particular area where we were denied permission to walk, there are a number of possible sunken court areas and other architectural features. We were able to estimate the size of the site visually without violating the rights of the landowner, but we admit that our size estimate is very provisional.
3. We have not surveyed near Canchacancha-Asiruni or in the Ayaviri area. However, the site of Canchacancha-Asiruni is large, at least 12 hectares (Stanish 2003: 113) and the site near Ayaviri, first visited and reported on scientifically by Rowe and Chávez Ballón, was (it has since been largely destroyed by house construction) quite large as well. If there are substantial numbers of contemporary Qaluyu settlements near these sites, they could well be the primary regional center of the Qaluyu polity.

REFERENCES

- Bandy, Matthew S., 2001, *Population and History in the Ancient Titicaca Basin*. Ph.D. dissertation, Department of Anthropology, University of California, Berkeley.
- , 1999a, Chapter 3. History of investigations at the site of Chiripa. In *Early Settlement at Chiripa, Bolivia*, edited by Christine Hastorf, pp. 9–16. Contributions of the University of California Archaeological Research Facility, Number 57. Berkeley.
- , 1999b, Chapter 5. The systematic surface collection. In *Early Settlement at Chiripa, Bolivia*, edited by Christine Hastorf, pp. 23–26. Contributions of the University of California Archaeological Research Facility, Number 57. Berkeley.
- , 1999c, Chapter 9. The montículo excavations. In *Early Settlement at Chiripa, Bolivia*, edited by Christine Hastorf, pp. 43–49. Contributions of the University of California Archaeological Research Facility, Number 57. Berkeley.
- Bauer, Brian and Charles Stanish, 2001, *Power and Pilgrimage in the ancient Andes: The Lake Titicaca Basin Sanctuary on the Islands of the Sun and Moon*. University of Texas Press, Austin.
- Beck, Robin Andrew, 2004a, Architecture and polity in the Formative Lake Titicaca Basin, Bolivia. *Latin American Antiquity* 15 (3): 323–343.
- , 2004b, *Platforms of Power: House, Community, and Social Change in the Formative Lake Titicaca Basin*. Ph.D. dissertation, Department of Anthropology, Northwestern University.
- Bennett, Wendell C., 1936, Excavations in Bolivia. In *Anthropological Papers of the American Museum of Natural History*, vol. 35. American Museum of Natural History, New York.
- Bernmann, Marc, 1994, *Lukurmata: Household Archaeology in Prehispanic Bolivia*. Princeton University Press, Princeton, N.J.
- Biltman, Brian R. and Gary M. Feinman, editors, 1999, *Settlement Pattern Studies in the Americas: Fifty Years Since Virú*. Smithsonian Institution Press, Washington and London.

- Browman, David L., 1978, The Temple of Chiripa (Lake Titicaca, Bolivia). In *El Hombre y la Cultura Andina, Tomo II*, edited by Ramiro Matos M., pp. 807–813. III Congreso Peruano, Lima.
- , 1978, Toward the development of the Tiahuanaco (Tiwanaku) state. In *Advances in Andean Archaeology*, edited by David L. Browman, pp. 327–349. Mouton Publishers, The Hague-Paris.
- , 1980, Tiwanaku expansion and altiplano economic patterns. *Homenaje al II Congreso de Arqueología Chilena, Estudios Arqueológicos* 5: 107–120. Antofagasta.
- , 1994, Titicaca Basin archaeolinguistics: Uru, Pukina and Aymara, AD 750–1450. *World Archaeology* 26 (2): 235–251.
- Chávez, Karen Lynne Mohr, 1969, Excavations in the Cuzco-Puno area of southern highland Peru. *Expedition* 30 (3): 17–83.
- , 1977, *Maravalle: The Ceramics from an Early Horizon Site in the Valley of Cuzco, Peru, and Implications for South Highland Socio-economic Interaction*. Ph.D. dissertation. Department of Anthropology, University of Pennsylvania.
- , 1988, The significance of Chiripa in Lake Titicaca Basin developments. *Expedition* 30 (3): 17–83.
- Chávez, Sergio J., 1975, The Arapa and Thunderbolt stelae: a case of stylistic identity with implications for Pucara influences in the area of Tiahuanaco. *Navpa Pacha* 13: 3–24.
- , 1981, Notes on some stone sculpture from the northern Lake Titicaca Basin. *Navpa Pacha* 19: 79–91.
- , 1988, Archaeological reconnaissance in the province of Chumbivilcas, south highland Peru. *Expedition* 12 (4): 25–39.
- , 1992, *The Conventionalized Rules in Pucara Pottery Technology and Iconography: Implications for Socio-Political Developments in the Northern Lake Titicaca Basin*. Ph.D. dissertation. Department of Anthropology, Michigan State University.
- and Karen Lynne Mohr Chávez, 1969, Una estela monolítica de Taraco (Puno), Perú. *Arte y Arqueología, Revista del Instituto de Investigaciones Artísticas, Facultad de Arquitectura, Universidad de San Andrés* 1: 119–127.
- and Karen Lynne Mohr Chávez, 1970, Newly discovered monoliths from the highlands of Puno. *Expedition* 12 (4): 25–39.
- and Karen Lynne Mohr Chávez, 1975, A carved stela from Taraco, Puno, Peru and the definition of an early style of stone sculpture from the altiplano of Peru and Bolivia. *Navpa Pacha* 13: 45–83.
- and David Bruce Jorgenson, 1980, Further inquiries into the case of the Arapa-Thunderbolt Stela. *Navpa Pacha* 18: 73–80.
- Cohen, Amanda E., n.d., *Archaeological Survey in the Pukara Valley*. Programa Collasuyu working papers. Programa Collasuyu, Puno, Peru.
- Conklin, William J., 1983, Pucara and Tiahuanaco tapestry: time and style in a sierra weaving tradition. *Navpa Pacha* 21: 1–45.
- Faldin A., Juan D., 1990, La provincia Larecaja y el sistema precolombino del norte de La Paz. In *Larecaja, Ayer, Hoy y Mañana*, pp. 73–90. Comité de Cultura, La Paz, Bolivia.
- , 1991, La cerámica de Chiripa en los valles de Larecaja. *Pumapunku* 1 n.s.: 119–132. La Paz.
- Franco Inojosa, José María, 1940, Informe sobre los trabajos arqueológicos de la misión Kidder en Pukara, Puno (Enero a Julio de 1939). *Revista de Museo Nacional* 9 (1): 128–136.
- Franquemont, Edward M., 1986, The ancient pottery from Pucara, Peru. *Navpa Pacha* 24: 1–31.

- Hastorf, Christine, editor, 1999, *Early Settlement at Chiripa, Bolivia*. Contributions of the University of California Archaeological Research Facility, Number 57. Berkeley.
- Janusek, John Wayne, 1994, *State and Local Power in a Prehispanic Andean Polity: Changing Patterns of Urban Residence in Tiwanaku and Lukurmata, Bolivia*. Ph.D. dissertation. Department of Anthropology, University of Chicago.
- , 2004, *Identity and Power in the Ancient Andes*. Routledge, New York.
- Kidder II, Alfred V., 1942, Preliminary notes on the archaeology of Pucara, Puno, Peru. Paper presented at the XXVII Congreso Internacional de Americanistas, Lima.
- , 1943, Some early sites in the northern Lake Titicaca Basin. *Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University* 27: 1–48. Cambridge.
- , 1948, The position of Pucara in Titicaca Basin archaeology. In *A Reappraisal of Peruvian Archaeology*, edited by Wendell C. Bennett, pp. 87–89. Memoir 4. Society for American Archaeology, Menasha, WI.
- , 1956, Digging in the Titicaca Basin. *University of Pennsylvania Museum Bulletin* 20 (3): 16–29. Philadelphia.
- Klarich, Elizabeth and Leny Pinto Portilla, 2003, *Informe Preliminar: Proyecto de Arqueología Doméstica de Pukara*. Presentado al Instituto Nacional de Cultura, Lima, Perú.
- Kolata, Alan, 1993, *The Tiwanaku*. Basil Blackwell, London.
- Kroeber, A. L., 1939, Sudamerica. Peru. *Revista del Museo Nacional* 8 (2): 320–325.
- Lémuz Aguirre, Carlos, 2001, *Patrones de Asentamiento Arqueológico en la Península de Santiago de Huata, Bolivia*. Tesis de Licenciatura de Arqueología. Universidad de San Andrés.
- Lumbreras, Luis Guillermo, 1974, *The Peoples and Cultures of Ancient Peru*. Smithsonian Institution Press, Washington D.C.
- and Hernán Amat, 1968, Secuencia arqueológica del altiplano occidental del Titicaca. *Actas y Memorias del XXXVII Congreso Internacional de Americanistas*, volume 2, pp. 75–106. Buenos Aires.
- and Elías Mujica, 1982, Kallamarca: relaciones con Pukara y Paracas. *Gaceta Arqueológica Andina* 3: 8. INDEA, Lima.
- Lynch, Thomas F., 1981, Current research: Andean South America. *American Antiquity* 46 (1): 201–204.
- Mannheim, Bruce, 1991, *The Language of the Inka since the European Invasion*. University of Texas Press, Austin.
- Marcus, Joyce, 1992, Dynamic cycles of Mesoamerican states. *National Geographic Research & Exploration* 8: 392–411.
- Mohr, Karen Lynne, 1966, *An Analysis of Pottery from Chiripa, Bolivia: A Problem in Archaeological Classification and Inference*. M.A. Thesis. Department of Anthropology, University of Pennsylvania.
- Moseley, Michael, 1992, *The Incas and Their Ancestors*. Thames and Hudson, London.
- Mujica Barreda, Elías, 1979, Excavaciones en Pucará, Puno. In *Arqueología Peruana*, edited by Ramos Matos Mendieta, pp. 183–197. Seminario: Investigaciones Arqueológicas en el Perú, 1976. Universidad Nacional Mayor de San Marcos, Lima.
- Mujica Barreda, Elías, 1987, Cusipata: una fase pre-Pukara en la cuenca norte del Titicaca. *Gaceta Arqueológica Andina* 13: 22–28.
- , 1991, Pukara: una sociedad compleja temprana en la cuenca norte del Titicaca. In *Los Incas y el Antiguo Perú: 3000 Años de Historia*, vol. 1, pp. 272–297. Sociedad Estatal Quinto Centenario, Madrid.

- Neiro Avendaño, Máximo, 1962, Informe preliminar de la expedición arqueológica al altiplano. *Kontitsuyo, Boletín del Museo de Arqueología e Historia de la Universidad Nacional de San Agustín*, pp. 72–80. Arequipa.
- _____, 1967, Informe preliminar de las investigaciones arqueológicas en el Departamento de Puno. *Anales del Instituto de Estudios Socio-Económicos*, pp. 107–164. Universidad Técnica del Altiplano, Puno.
- Paz Soria, José Luis, 1999, Chapter 7. Excavations in the Llusco area. In *Early Settlement at Chiripa, Bolivia*, edited by Christine Hastorf, pp. 31–35. Contributions of the University of California Archaeological Research Facility, Number 57. Berkeley.
- Plourde, Aimée M., 2006, *Prestige Goods and Their Role in the Evolution of Social Ranking: A Costly Signaling Model with Data from the Late Formative Period of the Northern Lake Titicaca Basin, Peru*. Ph.D. dissertation, Department of Anthropology, University of California, Los Angeles.
- Ponce Sangines, Carlos, 1995, *Tiwanaku: 200 Años de Investigaciones Arqueológicas*. CIMA, La Paz.
- Portugal Ortiz, Max, 1988, Excavaciones arqueológicas en Titimani (II). In *Arqueología Boliviana*, pp. 51–81. Instituto Nacional de Arqueología, La Paz, Bolivia.
- _____, 1988, Informe de la prospección a Pacajes (Etapa I). In *Arqueología Boliviana*, pp. 109–117. Instituto Nacional de Arqueología, La Paz, Bolivia.
- _____, 1991, La prospección efectuada en zonas de la provincia de Camacho del departamento de La Paz. *Textos Antropológicos* 2: 9–42.
- _____, 1992, Trabajos arqueológicos de Tiwanaku (primera parte). *Textos Antropológicos* 4: 9–50.
- Rowe, John Howland, 1956, Archaeological explorations in southern Peru, 1954–55. *American Antiquity* 22 (2): 135–150.
- _____, 1963, Urban settlements in ancient Peru. *Nawpa Pacha* 1: 1–27.
- _____, and Catherine Terry Brandel, 1971, Pucara style pottery designs. *Nawpa Pacha* 7–8 (1969–1970): 1–16.
- _____, and John M. Donahue, 1975, The Donahue discovery, an ancient stela found near Ilave, Puno. *Nawpa Pacha* 13: 35–44.
- Schultze, Carol and Fernando John Sosa Alcón, 2003, *Proyecto Wuyrunu: Reconocimiento Arqueológico Sistemático e Intensivo del Bahía de Puno, Lago Titicaca, Perú*. Informe de investigaciones presentado al Instituto Nacional de Cultura.
- Stanish, Charles, 1989, Household archaeology: testing models of zonal complementarity in the south central Andes. *American Anthropologist* 91 (1): 7–24.
- _____, 2001, The origins of the state in South America. *Annual Review of Anthropology* 30: 41–64.
- _____, 2003, *Ancient Titicaca. The Evolution of Complex Society in Southern Peru and Northern Bolivia*. University of California Press, Berkeley.
- _____, 2004, The evolution of chiefdoms: an economic anthropological model. In *Archaeological Perspectives on Political Economies*, edited by Gary M. Feinman and Linda M. Nichols, pp. 7–24. Foundations of Archaeological Inquiry, University of Utah Press, Salt Lake City.
- _____, and Brian Bauer, 2004, *Archaeological Research on the Islands of the Sun and Moon, Lake Titicaca, Bolivia: Final Results from the Proyecto Tiksi Kjarka*. Monograph 52. Coisen Institute of Archaeology at UCLA, Los Angeles.
- _____, Richard Burger, Lisa Cipolla, Michael Glascock and Esteban Quelim, 2002, Evidence for early long-distance obsidian exchange and watercraft use from the southern Lake Titicaca Basin of Bolivia and Peru. *Latin American Antiquity* 13: 444–454.

- _____, and Cecelia Chávez, 2004, *Excavations in Taraco: Sectors A and Anta Mocco*. Working Papers of the Programa Collasuyu, Programa Collasuyu, Puno.
- _____, and Aimée M. Plourde, 2000, Formative Period settlement patterning in the Huancané-Putina River Valley, northeastern Titicaca Basin. Paper presented at the 66th Annual Meeting of the Society for American Archaeology, New Orleans, Louisiana.
- _____, and Adan Umire, 2002, *Prospección Arqueológica del Sector Bajo de la Cuenca del Ramis (Ríos Azángaro y Ramis), Puno*. Final report submitted to the National Institute of Culture, Lima, Peru.
- Valcárcel, Luis Eduardo, 1925, Informe sobre las exploraciones arqueológicas en Pukara. *Revista Universitaria del Cuzco* 48: 14–21.
- _____, 1932, El personaje mítico de Pukara. *Revista del Museo Nacional* 1 (1): 18–30, 122–123.
- _____, 1935, Litoesculturas y cerámica de Pukara. *Revista del Museo Nacional* 4 (1): 25–28.
- _____, 1938, New links in the record of ancient Peruvian culture. In *The Latest Archaeological Discoveries in Peru*, pp. 21–26. Publications of the National Museum of Lima, Discovery Series, Lima.
- Vranich, Alexei N., 1999, *Interpreting the Meaning of Ritual Spaces: The Temple Complex of Punapunka, Tiwanaku, Bolivia*. Ph.D. dissertation, Department of Anthropology, University of Pennsylvania.
- Wheeler, Jane and Eliás Mujica, 1981, *Prehistoric Pastoralism in the Lake Titicaca Basin, Peru, 1979–1980 Field Season*. Report submitted to the National Science Foundation.
- Whitehead, William T., 1999, Chapter 4. Radiocarbon dating. In *Early Settlement at Chiripa, Bolivia*. Contributions of the University of California Archaeological Research Facility, Number 57. Berkeley.
- Wright, Henry T., 1994, Prestate political formations. In *Chiefdoms and Early States in the Near East: Organizational Dynamics of Complexity*, edited by Gil Stein and Mitchell Rothman, pp. 67–84. Prehistory Press, Madison (WI).