


INKA SETTLEMENT PLANNING

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4 Rocks and Outcrops

The architecture of Inka settlements is frequently integrated with stones and outcrops. Whereas some were no doubt sacred, that status varied from rock to rock. To the Inka mind no two rocks were exactly alike—nor were their histories, myths, and meanings the same. The manner in which stones and outcrops were treated also varied, as did the groups responsible for performing rituals at them. Inka culture's integration of rocks and outcrops into architectural planning is unique among ancient American civilizations.

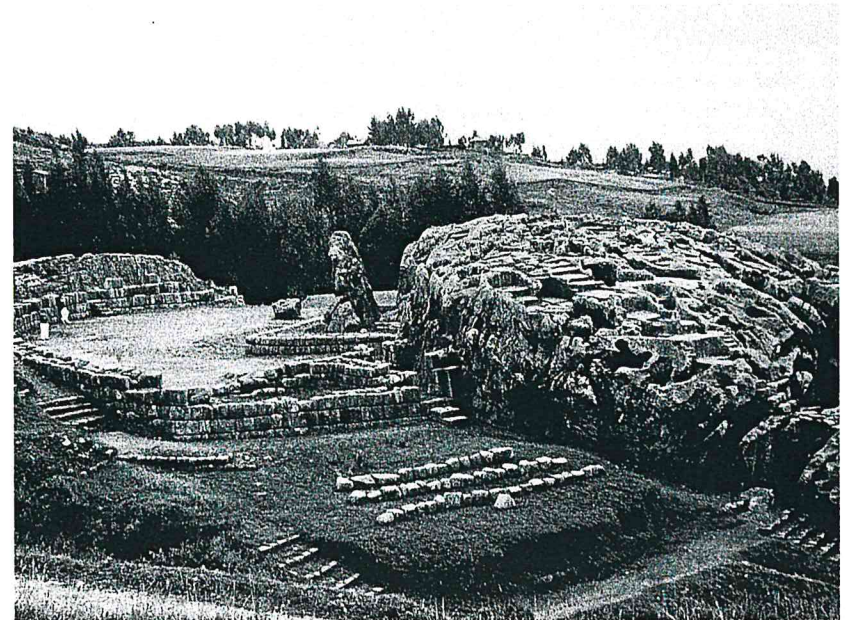
All visitors to the Cuzco area, the Inka heartland, are impressed with the important role of rock in Inka architecture. The significance of rock does not end with fine masonry (chap. 1), but rather extends to stones and outcrops, which affect the shape of buildings as well as the placement and design of settlements. Indeed, to ignore the subject of outcrops and boulders in Inka architecture is to neglect its fundamental Andean roots.¹ In Inka architecture, boulders and outcrops may form parts of terraces or freestanding walls, rest conspicuously on terraces, platforms, or plazas,² be placed in or between buildings, or simply be freestanding features (fig. 4.1). In some cases these large stone features may have been incorporated in constructions because it would have been too much work to remove them. In other cases the boulders or outcrops are displayed in such a way that there can be little doubt that architecture was planned around them because of their special importance.

There are hundreds of carved stones throughout Tawantinsuyu, ranging from small rocks to large outcrops. In still other cases very large outcrops, segments of hills, or mountain slopes are carved. The symbolism becomes more complex when dealing with the many boulders or outcrops unaltered by human hands, but that, as is known, carried as much importance as other, carved rocks. In some cases these unworked rocks can be identified as *waqa* (sacred places) by historical accounts. In still other cases, an architectural feature defines an important unworked stone. In short, modern Andean people and archaeologists alike may

often wander in a sea of lost meaning as they walk among the boulders and outcrops of an Inka settlement. This chapter attempts to search for some of that meaning and to analyze how it affected the construction and layout of Inka settlements.

Carved or Uncarved

Simply viewing a stone does not reveal its meaning, since its carvings (or lack thereof) provide no immediate clues to its significance. Two types of carving in boulders or outcrops, however, are relatively comprehensible. The first are shelves and niches carved in stones, which probably provided surfaces or spaces for offerings or sacrificed items. Commonly sacrificed commodities were sea shells, clothing (both large and miniature), llamas, human and llama figurines, objects of gold and silver, coca leaves, and children. Sometimes the sacrificed items were burned, and the fires would have been set on stone shelves. One particularly good example of the seats or shelves is on Rodadero Hill, overlooking the walls of Saqsawaman (fig. 4.2). It was a *waqa* in Cuzco's ritual system.³



4.1. The stones of Kenqo in the north of Cuzco. One (center) has a platform built around it. The other (left) is a large carved outcrop with a passageway and niches beneath it.



4.2. Carved shelves known as the "Inka's Throne" on Rodadero Hill on the north side of Saqsawaman's plaza. The shelves may not be seats, but special places for offerings or sacrifices.

The second type is carved channels, which may be straight, curving, or in the form of single or double zigzags (figs. 4.3, 4.22). These are generally connected to small or large depressions or basins and indicate that they were used to pour special libations such as *chicha*. Similar channels are found on Inka libation vessels, *paccha* (chap. 5). Occasionally, sets of steps (not to be confused with shelves) or animals are carved on boulders. Their exact meaning is not known, although there is little doubt that much symbolism surrounded animals such as felines in Inka culture (Zuidema 1983a).

Unworked stones may have served a somewhat different purpose, since they are not carved to receive offerings or libations. Indeed, it is clear from the list of Cuzco *zeque waqa* that some stones marked a spot whose importance was not related to any history or characteristics of the stone itself. Thus in some cases it may have been incidental that a stone or outcrop marked an important place, since the stone was important only in that it marked a fixed place important in the ritual system (e.g., a water source).

There is, however, evidence that at least some uncarved stones were venerated and received offerings. Such is the case of the Guanacauri stone, one of the most important *waqa*, or sacred items, in the Inka Empire. It not only demonstrates how complex the mythology of an uncarved stone could be, but illustrates that a structure could be built around such a rock. The "Account of the Shrines . . ." (Rowe 1979: 47, Co-6: 7) relates that the Guanacauri stone was "of moderate size, without [representational] shape, and somewhat tapering." Originally resting on the top of the Guanacauri Hill at Cuzco, it formed part of many rituals, and was thought to have been originally a brother of the first Inka. The "Account" also notes that it was elaborately adorned with feathers for a solar feast, and Wayna Qhapaq took it to Ecuador whence it returned with his mummy. After the Spanish conquest, the stone remained untouched by the Europeans because it was uncarved and thus considered unimportant. Soon, however, it was hidden by the Indians, and then taken by Paullu Inka, who had just returned from Chile. Paullu Inka built a house for the Guanacauri stone next to his, but later it was seized by the Christians, who found with it miniature clothes for figurines and earpools for the initiation of young men.

This is but one of a number of examples in which an early historical source provides information on an uncarved special stone. Such accounts are of limited value unless placed within the broader context of Inka religion and related to how the Inkas used boulders and outcrops.



4.3. A carved zigzag channel terminating in a small basin on the large carved outcrop at Kenqo near Cuzco.

Historical Evidence for the Symbolic Content of Stones

Inka religion was fundamentally animistic, giving a spiritual content to inanimate objects. Thus the landscape, sky, regions beyond the horizon, the sea, and the underworld were filled with religious meaning. Sixteenth-century Catholic priests soon learned of this complex aspect of Andean religion and found that its eradication was very difficult. Concerned with the destruction of paganism, one of the priests' tactics was to destroy the cult objects of Andean religion.⁴ They were confronted by cultures whose religion and sacred places were so ubiquitous that some priests went to considerable lengths to define those places, guiding others in the extirpation of idolatry. *Idolatry* was a common sixteenth- and seventeenth-century word used to describe the worship of anything considered sacred by Andean people. The word does not honor the extraordinary design that Andean and Inka religion had developed for sanctifying the surrounding world.

One important summary of the objects worshiped in the Andes was written by the Jesuit José de Arriaga (1968: 201–205), who listed the sun, moon, certain stars, the sea, earth, rivers and springs, hills, snow-capped mountains, ancient giants, *pacarinas* (see below), and caves. He made special mention of rocks and stones, associating them with hills and mountains, and reports that there were a thousand stories relating the transformations and metamorphoses of men into stone.

Stones also play an important role in a second list compiled by Arriaga, dealing with portable items. Such movable objects were often carved or uncarved stones, each with its own name and meaning. Not only was the stone worshiped, but so was the place where it was kept. Stone was also the major medium for *conopas*, domestic religious objects. Carved in the shape of a llama, alpaca, or other animal, these small stone figurines were often made from an apparently special stone and were passed down within families.

Some portable objects of great significance were the mummies that were regarded as the sacred progenitors of social groups. Often kept in caves or stone niches, these locations became sacred in and of themselves. Finally, Arriaga warns that a tall stone in a field could be sacred or a *waqa*. Similarly, some stones in or by rivers or canals were sacred and would be worshiped before planting and after the rains to ensure the success of the irrigation and crops. This last observation explains why some special boulders and outcrops are not found within, but distant from, a settlement.

Sometime near the end of the sixteenth century another priest, Cristóbal de Albornoz, wrote a manuscript (1967) specifically dedicated to informing how sacred places and things (*waqa*) could be discovered

and destroyed. He discusses a wide range of *waqa*, from small colored stones carried by people in their bags, "like the Christians who carry figurines of saints, which they worship," to fragments of weapons or textiles, deformed children, certain fruits and animals, and so forth. Albornoz's list is more detailed than Arriaga's, but it is similar in that it stresses the importance of outcrops and stones. Like Arriaga, he notes that certain stones were found in isolated places. Thus a stone or outcrop in a pasture might be revered to ensure the fertility of the llama herds.

In referring to massive outcrops and rock mountains he laments. (1967: 20): "It is impossible to take from them this superstition because taking apart these *waqa* would require such energy that all the people of Peru are not sufficient to move these stones or mountains. Thus is necessary the admonishment and preaching of the good doctrine for all."

Albornoz's discussion of *pacarina* is particularly detailed and helps explain how the Inkas and other Andean peoples were able to establish sacred or special stones outside of their native territory. He defines *pacarina* as "creators of their beings." By this he means that they were worshiped as origin symbols of different groups of people. *Pacarina* could be rivers, animals, lakes, springs, caves, and rocks or stones. No Andean *ayllu* was without its *pacarina*. Albornoz points out that the number of *pacarina* increased in Inka times, since many groups of people were moved to different places as *mitmaq*—the state-organized policy of colonization. These colonists were able to duplicate their *pacarina* and to carry them to their new homes. This phenomenon aided the Inkas' conquest policy, which ensured that *mitmaq* would have access to their traditional and familiar religious objects. *Pacarina* could be transferred from one place to another in a number of ways. If it was a stone, a fragment of the original could be moved. Conversely, a piece of cloth was used to cover the original; when the textile was transferred it would carry the *pacarina*'s powers and meaning to an appropriate stone a great distance away.

Sacred Stones in Cuzco

The Inka capital probably had more special stones than any other settlement within Tawantinsuyu. Two lists, by Albornoz and Cobo,⁵ describe such stones in and near Cuzco. Although many of these stones have been removed or intentionally destroyed, their presence in Inka times is certain. The list by Albornoz (1967: 25–26) mentions over thirty *waqa*, of which more than half are stone or rocks. They range from "round stones" in the Carmenca district to a "large crag at the house of Wirakocha Inka."

Rocks and Outcrops

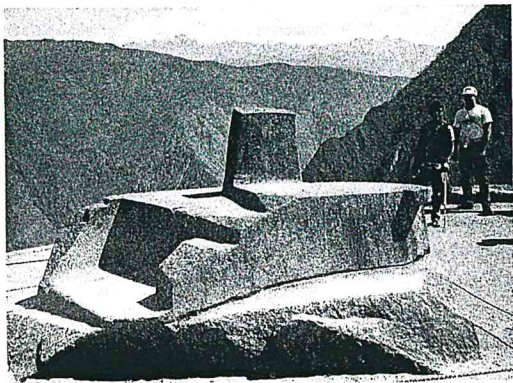
A much more detailed list is found in "An Account of the Shrines of Ancient Cuzco," written somewhat earlier, between A.D. 1559 and 1572 (Rowe 1979: 5). This list of sacred places on lines is the description of the *zeque* system described in more detail in chapters 2, 5, and 7. Nearly a third of more than three hundred *waqa* are listed as stones or groups of stones. Thus within and near Cuzco there were many dozen sacred locations represented by rock(s). At least fourteen were *pururaucas*, or stones that, according to myth, turned into soldiers during an early Inka war against their Chanca neighbors. Other stones were used as sites for sacrifice or worship, to ensure the health of a king, to indicate the location of a miraculous event, to have dangerous powers, to be a *pacarina*, to bring victory in war, to be a mythological person, or to ensure a safe journey. Some are described as having been created by an Inka king; others are simply called "very old." One stone called Maychaguanacauri on the Antisuyu road was shaped like the Guanacauri Hill (Rowe 1979: 34, 35, AN-4: 7) near Cuzco.

Many of the stones are associated with canals, or water sources. Indeed, a stone's proximity to an important water source frequently endowed it with a special, sacred status. As discussed in chapter 5, water is crucial to understanding the meaning and organization of Cuzco's ritual system. Water also appears to be important for discerning the meaning of special stones and their relation to social structure.

In short, the two lists contain some conflicting information,⁶ but do agree that stones and outcrops were important in the capital's ritual system, and thus were integrated into the architecture of the Inka capital.

Stones and Architecture in the Cuzco Area

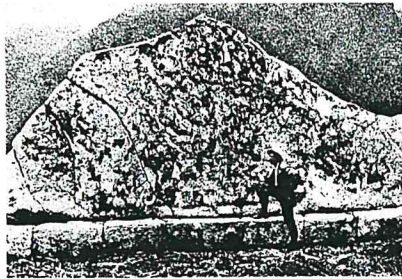
Most of the larger settlements and some smaller complexes in the Cuzco region have one or a number of places where stone or outcrops



4.4. The carved stone known as intiwatana at Machu Picchu, Peru. Its purpose has been the subject of much speculation, including its unsubstantiated role as a "hitching post of the sun."



4.5. Machu Picchu. Arrows indicate the locations of some special stones and outcrops. Bingham (1930: fig. 219).



4.6. A large, flat outcrop surrounded by a platform on the north side of Machu Picchu, Peru. Some have suggested that it was shaped to model the horizon (not visible here) beyond it. Bingham (1930: 79).

are integral aspects of the architecture.⁷ Unless these stones are extraordinarily prominent and worked, such as the case of the *intiwatana* at Machu Picchu (fig. 4.4), little attention is paid to them. Nevertheless, their presence should be noted, and their influence on site design be studied.

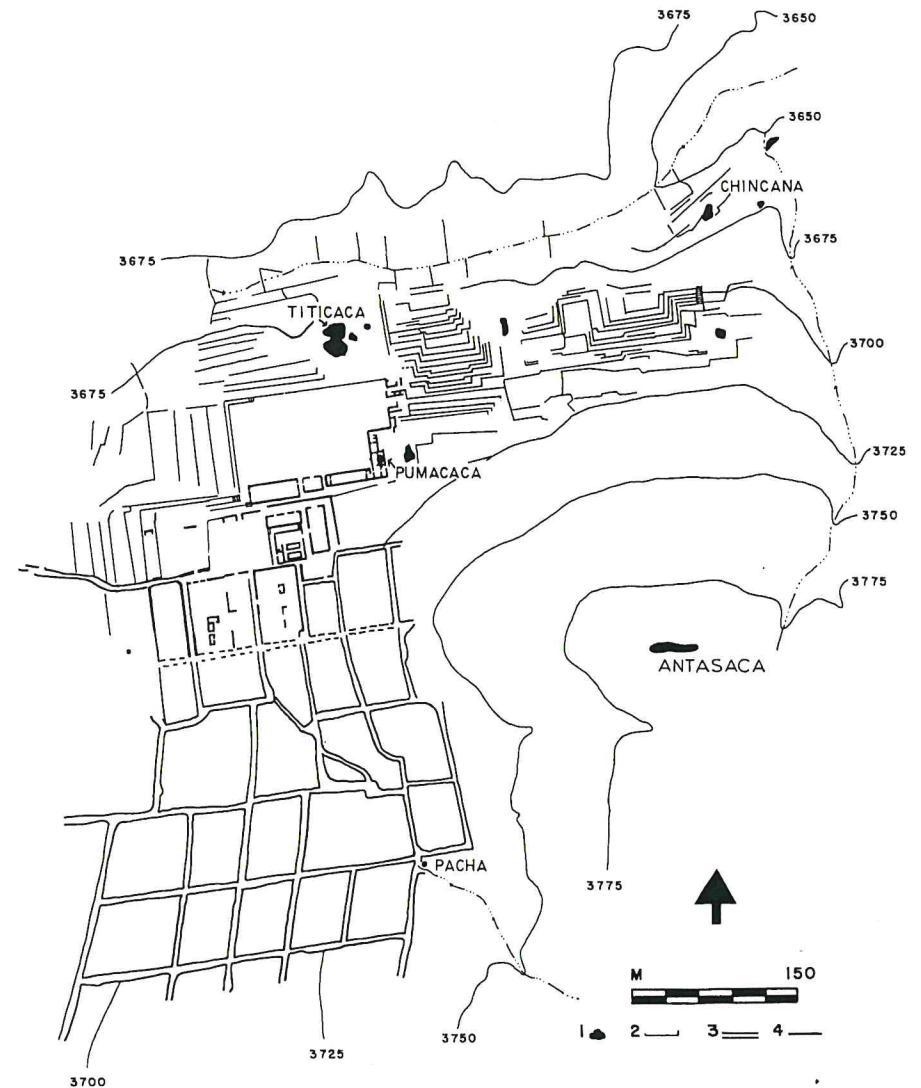
Machu Picchu

The famous site of Machu Picchu is a case in point. Bingham (1913: 471) noted that each of several groups of buildings had a "religious center, consisting of more or less carved granite in position. In several cases, caves had been excavated under these rocks, and in one case the cave was beautifully lined with finely cut stonework."

Indeed, special boulders and outcrops are more apparent at Machu Picchu than at almost any other known Inka settlement. This has been noted by MacLean (1986: 72), who writes:

Buildings in all parts of the site were planned around standing boulders. Inca stonemasons certainly possessed the skills to cut or move boulders to fit a plan; however, many of the structures incorporating such boulders seem to have been built because of and not in spite of them. In a physical sense, they were probably a stabilizing feature. In a metaphysical sense, carved or uncarved, these boulders were crucial elements in the animistic Inca religious philosophy. Therefore, they had to have been a strong consideration in the spatial organization of the site.

The presence of so many important stones at Machu Picchu (fig. 4.5) argues for a site whose religious significance may be stronger than has been suspected. The varying treatment of rocks argues that they had different roles. Some of the stones are found above or beside burial caves. Others are in patios or buildings, on low platforms or within walls. Some may have been shaped in the form of a sacred mountain near Machu Picchu. A good example of this is a flat outcrop located on the



4.7. Plan of Chinchero, Peru. Buildings of fine masonry are found to the south and east of the plaza. Key: 1. important stones; 2. terraces; 3. streets; 4. Inka buildings of fine masonry. Redrawn from plans in Alcina F. (1976: 20, 22, 28, 40).

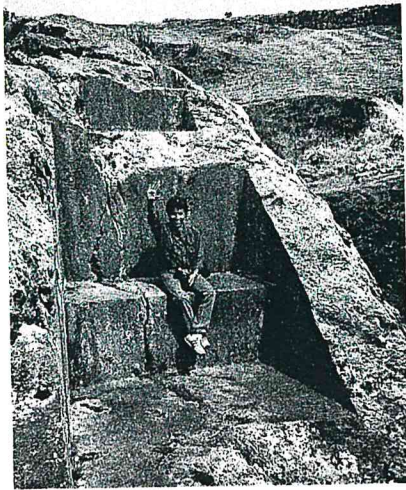
northern side of the site (fig. 4.6).⁸ At least one carved outcrop may have had an astronomical or calendrical function (chap. 8). MacLean (1986: 95–96, fig. 18) maps nearly a score of special stones at Machu Picchu.

The special treatment of stones at Machu Picchu raises a number of questions. For example, was Machu Picchu's location chosen because "special" stones were there? Or did Machu Picchu's builders merely incorporate these stones into their design? All that can be said is that now that the site has been studied from many points of view, enough is known to stress the importance of its boulders and outcrops.

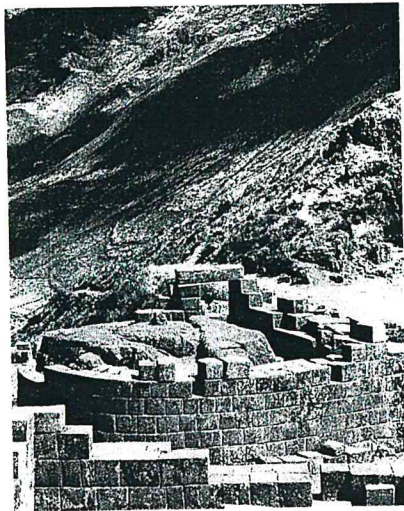
Chincheró

Another good example of special boulders or outcrops integrated into and near a settlement's architecture is the site Chincheró (fig. 4.7). Chincheró was once an Inka royal estate. It has always been an important potato-producing area. It may have more worked stones than any other site in the Cuzco region. There were at least four principal stones or stone clusters on the edge of the community and others associated with an important compound called Structure 11 (Alcina 1976: 99–114) on the plaza. In addition, there are a considerable number of small worked stones scattered about the site.

Chincheró has been continuously occupied since Inka times. The local people still have strong feelings about the stones. Anthropologist Edward Franquemont, who has resided at Chincheró, reports that the



4.8. Shelves in the Titicaca stone at Chincheró, Peru.



4.9. A carved outcrop within the inti-watana sector of Písac, Peru. A semicircular building was constructed around it.

worked stones are now considered dangerous, and are avoided or respected.⁹ Children must not play in or near the stones.

The more important stones still have names. The largest outcrop is called Antasaca (fig. 4.7), located just east of the town on the top of the hill. Little remains of its worked surface today, but it still occupies the minds of the Chincheró people. They remember that their ancestors were forced by the Spanish to chip away all the surfaces of the stone. They feel that it was the search for gold, but more probably it was a Christian attempt to destroy a sacred place.

To the northeast is the large stone known as Chincana, with carved shelves on its top and a base with a watercourse, large vertical worked surfaces, long shelves, and a stepfret. Other small stones near the base are also worked, one with several shelves. A complex of carved boulders known as Titicaca is found below and to the north of the main plaza. It was once flanked by fine stone walls. It has a stepped tunnel entrance leading from the ground level to the top, a curving staircase, and several shelves and niches (fig. 4.8).

One important stone is located where a small hotel is now located. It is ritually linked to Ayllu Pongo, the only stone with an extant *ayllu* affiliation. Other important stones were probably located at the waterfall (*pacha*) on the south side of the community. Unfortunately, little can be seen of these because of modern construction.

Within and beside the important Inka ceremonial compound to the east of the plaza there are five stones with carved shelves. The central and largest one is known as Pumacaca. The stone is so prominent that it appears that its associated architecture is there because of, rather than in spite of, it. Alcina (1976: 105–106) presents a detailed description of its worked flat surfaces and two possible animal carvings.

Chincheró's freestanding and building-associated carved stones were and remain an important part of the settlement. As at Cuzco, the stones probably had an affiliation with a social group, although today only one maintains an association with an *ayllu*. Franquemont recalls that one massive stone in a patio was valued enough to be stolen by a character known only as Strong John (Juan Fuerte). Franquemont helped community members haul it back to its proper place. Thus some Andean people still consider that stones have their rightful place within a community's design.

Other Cuzco-Area Sites

To a lesser degree, stones enclosed within walls or surrounded by terraces are found at most Cuzco-area sites. For example, they are notable at Písac (fig. 4.9), Ollantaytambo (fig. 4.10), Tipón (fig. 4.11), Chacaná, and Qespi Wara, to name a few. In all these cases the important stone



4.10. A large, relatively flat upright stone with a surrounding platform is found next to important waterworks in the Incamisana sector of Ollantaytambo, Peru.

can be identified because of one or a number of distinguishing features: they are often carved, enclosed within walls, prominently displayed on terraces, or set on platforms.

Important Stones Removed from but Part of Settlements

Some important Inka stones are part of architectural layouts that were not extensive inhabited settlements. The remarkable Sayhuite stone (fig. 4.12) on a terraced hilltop in Apurimac, Peru, is an example. Its variety of motifs making up a miniature landscape is unique in Inka stone carving. Van de Guchte's survey at Sayhuite demonstrates that the terraced hilltop is close to other archaeological remains that include steps and fountains, other carved boulders (Rumihuasi), and a large plaza (Usnu-pampa) with artificial mounds and a subterranean canal. He believes the Sayhuite stone is related to water ritual, as did Carrión (1955: 57–60) and Sherbondy (1982a: 92–93).¹⁰ The Sayhuite stone is not as isolated from a settlement layout as was once held.

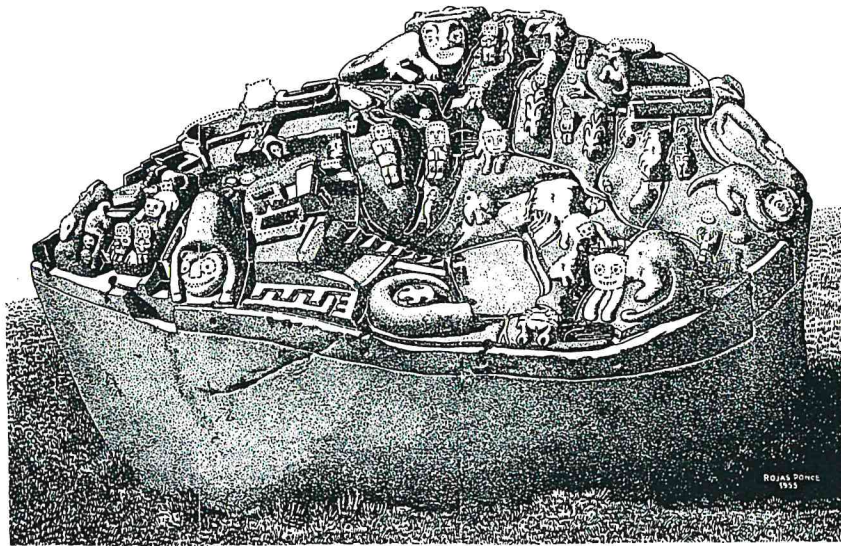
At Cuzco some of the *zeque waqa* stones lie outside the architectural limits of the capital, but are linked to Cuzco through ritual lines.



4.11. An uncarved boulder surrounded by a three-tier platform is found on a height at Tipón, Peru.

This suggests that special stones near Cuzco (and possibly other Inka sites) should be considered part of the Inka concept of a settlement. Examples of such stones at Cuzco are the Guanacauri stone (discussed earlier), the carved Kenqo outcrop (fig. 4.1), and the Tired Stone (Piedra Cansada) at Saqsawaman.

Enough is known about the Piedra Cansada (fig. 4.13) to demonstrate much of its symbolism and link to Cuzco. It is the subject of a unique structural study by Van de Guchte (1984). The Tired Stone rests just to the north of Saqsawaman. A number of sources (Cieza de León, Gutiérrez, Murúa, and Garcilaso) refer to it. Guaman Poma (1980: [159] 138–139) supplies related information about moving “tired stones.” In general, the sources relate that the stone was being moved to (or from) Saqsawaman. It “tired,” or could move no more, and cried blood, and thus was left near the fortress. It became part of the ritual (*zeque*) system of Cuzco and was worshiped as a general *waqa*, at which offerings were made to ensure the strength of the king (Rowe 1979: 20, Ch-4:6). The stone is related to *hanan* Cuzco and a royal *ayllu* in a territorial sense.



4.12. Two views of the Sayhuite stone, drawn by P. Ponce Rojas. The symbolism in its design far exceeds that of most carved Inka outcrops. Canals, terraces, human couples, buildings, felines, and other animals are combined in an animated landscape. From Carrión Cachot (1955).



4.13. The Tired Stone north of Saqsawaman. Now partially destroyed, the outcrop's complex symbolism is mentioned by a number of early histories. Courtesy Anthony Aveni.

Accounts vary as to where the stone came from (a nearby quarry, Yucay, Ecuador) and where it was going (Saqsawaman, Huánuco, Ecuador), but they do appear to establish a relationship with another area. Also, the stone's tiring and crying recall earlier critical times when, in Andean mythology, stones took on human characteristics. In arguments too lengthy to repeat here, Van de Guchte ties aspects of the stone into the symbolic termination of the building of Saqsawaman and the area's irrigation system. In short, this carved outcrop was loaded with meaning and serves as a warning that Inka stones are never understood properly if only described physically.

Accurately located by Zuidema and Aveni in 1980, the Piedra Canzada is a large limestone outcrop (and thus never could really be moved) 74.2 meters in circumference. It is located north of Saqsawaman (to the west of the Hacienda Pucro) and is now known as the Chingana Grande. Sculpted with geometric shapes, niches, and shelves, it has been partially destroyed. Although the Tired Stone rests outside of Cuzco's architectural limits, it is closely tied to Cuzco's mythology, ritual, and royal *ayllu* and might properly be considered part of the urban concept of Cuzco. Such may well be the case with other special stones in the Cuzco area and throughout Tawantinsuyu.

Important Boulders and Outcrops throughout Tawantinsuyu

The Cuzco area has the greatest number of carved and specially displayed rocks. But the Inkas carried this important concept elsewhere, and it shows frequently in their state architecture, often at great distances from the capital.

Examples from Argentina, Peru, and Ecuador

At the Inka fortress of Pucará de Andalgalá, for example, in Catamarca Province, Argentina, one finds a large white stone outcrop in the center of the patio of the highest building in the site (fig. 6.26). Somewhat to

the north, in the smaller plaza of Nevados de Aconquija in the Argentine province of Tucumán (chap. 3), one finds a large stone surrounded by a circular stone platform (figs. 4.14, 3.10). Because it is in a plaza, one could argue that this stone has *ushnu*-related properties. This is not likely, given the presence of a complete *ushnu* complex at the site's larger, nearby plaza (fig. 3.13).

An important case of apparently isolated stones possibly forming part of the Inka settlement concept is found at the administrative center of Pumpu in the department of Pasco, Peru. Beyond the periphery of the site's buildings are a considerable number of rock outcrops. The stones are found mainly in the flat *puna* to the west and south of the buildings, but similar stones may be found in the surrounding hills. At first glance these rocks appear to be insignificant, since they are removed from the "constructed" area. Upon closer scrutiny one finds that some stones are worked with small depressions and may have been used in a ritual context. More will be understood about these stones when they are accurately mapped and their relation to the design of Pumpu studied.

At the administrative center Huánuco Pampa to the north of Pumpu, there are no natural rock outcrops in the flat pampa surrounding the center. The only nearby outcrop is located within the area of storage structures, and enclosed in a rectangular building. Excavation revealed a cache of pottery and figurine fragments buried beside it (Morris 1967: 109–110).

Far in northern Tawantinsuyu, important carved stones (fig. 4.15) are found within the site of Ingapirca (Alcina 1978: 143–144; Jaramillo 1976: 127–146), just northeast of its solid oval structure by a stream. That building rests on a large outcrop (Fresco 1983; Fresco and Cobo 1978). The implications of this outcrop, part of a possible Cañari *pacarina*, are discussed in chapter 9. Northeast of Quito, one finds outcrops prominently placed within the walls of several units (nos. 3, 5, and 6)



4.14. An uncarved outcrop surrounded by a low circular platform of stones at Nevados de Aconquija, Argentina. It is located in the smaller (northwest) of the settlement's two plazas.

within the Pambamarca fortress complex (chap. 6, "Pambamarca"). The outcrop at Unit No. 5 (Quitahoma) is particularly impressive, since it is surrounded by steep natural cliffs on one side and three artificial walls on the other.

Significant Rocks at the Titicaca Sanctuary

The great sacred rock on the Island of the Sun is discussed in chapter 3, as it forms part of an *ushnu* complex. Although rough and unworked, it was adorned with textiles and metals. Other important boulders are also found elsewhere in the sanctuary.

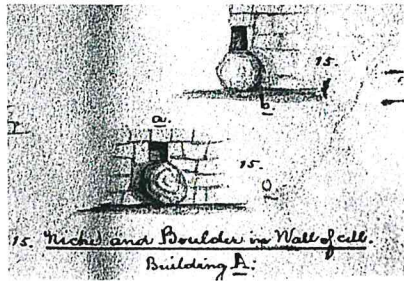
On the southern side of the Island of the Sun at the Inka building Pilco Kayma (Gasparini and Margolies 1980: 262–263), notable for its two-story construction (figs. 1.6, 1.7), one finds boulders integrated into the walls. One is just below a niche (fig. 4.16). Bandelier suspected that the boulders "may have been placed there for some purpose" and commented (1910: 195): "The boulders are so large that it would have required several men to remove them; still it is strange that people who were able to move incomparably more ponderous masses, as shown at Sillustani and Cuzco, should have left them *in situ*, building over and around them. The purpose of making a rude mass an integral part of the side of a room is not clear to me."

Given the relatively common occurrence in the Cuzco area of boulders within Inka walls made of smaller blocks, the example of the wall boulders at the Pilco Kayma does not seem extraordinary. It is quite certain that these boulders are special aspects of the building's composition, particularly since one is located under a niche where offerings could have been placed. One might even speculate that the boulders were a cause for situating the Pilco Kayma at its specific location.

One particularly significant set of carved rocks within the same sanctuary area is found on the Copacabana Peninsula, lying on the edge of



4.15. Part of a carved outcrop associated with waterworks northeast of the oval building at Ingapirca, Ecuador.



4.16. Boulder-niche construction in the Pilco Kayma building on the Island of the Sun, Lake Titicaca, Bolivia. Courtesy Department of Anthropology, AMNH, Bandelier Collection.



4.17. One of a group of carved stones west of the town of Copacabana, Bolivia. It was part of the Lake Titicaca sanctuary.



4.18. One of several carved outcrops near Copacabana, Bolivia. In Inka times pilgrims underwent special rites before proceeding to the Island of the Sun.

the present-day pilgrimage center and town of Copacabana (Portugal and Ibarra 1957; Portugal Z. 1977; Trimborn 1967: 19–23; Rivera Sundt 1984). Modern Copacabana covers a principal Inka settlement (Bandelier 1910: 282). The inhabitants were Inkas and *mitmaq* from various parts of Tawantinsuyu. Several carved stones rest on the western side of the town within a small area (figs. 4.17, 4.18). Some remains of Inka walls are found nearby, but there are not enough to determine the layout of buildings near the outcrops.

Ramos Gavilán (1976: 44, chap. 12) wrote that pilgrims traveling to the Islands of the Sun and Moon would undergo purification rituals on

the Copacabana Peninsula before visiting the islands. It is possible that these rites took place at these stones.

One of the principal carved rocks has been called the Seat of the Sun, or Throne of the Inka, as many other carved Inka rocks with flat shelves or steps sculpted into them are known. These “seats” or “thrones” are best understood as places for offerings or as small altars. There are many such offering shelves in the complex of stones at Copacabana.¹¹ With the exception of Samaipata (discussed below), the Copacabana carved stones may have more shelves than any other set of carved rocks outside of the Cuzco area.

Samaipata

Farther east in Bolivia there are several other sites with Inka carved stones or outcrops (Trimborn 1967: 23–27). None are as impressive as the massive carved outcrop at Samaipata (Sabaypata) in Santa Cruz Province (fig. 4.19). It too was part of a settlement, but unfortunately the town is entangled in a forest and has not yet been mapped (Tapia 1984). Rivera (1979: 46) estimates a settlement of some thirty hectares



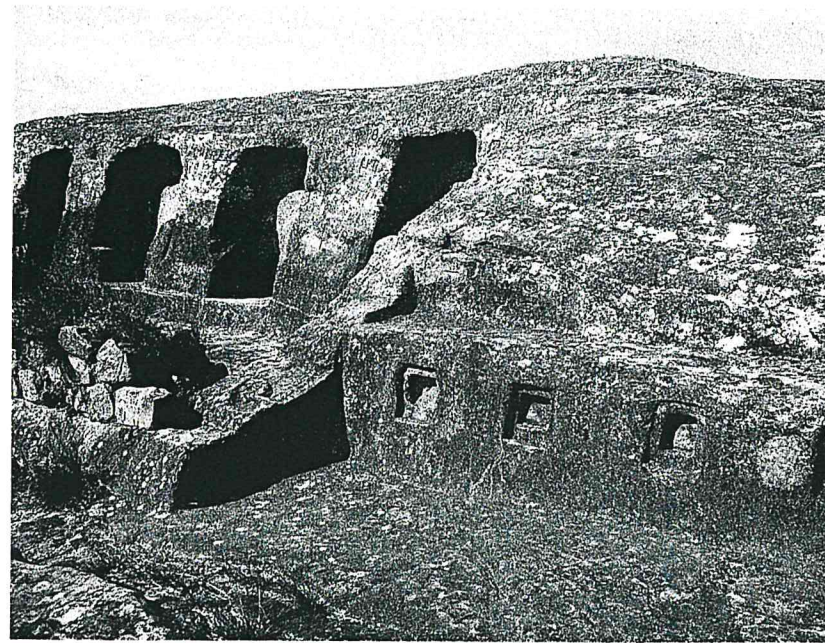
4.19. View to the east over the Samaipata outcrop in Bolivia. The carved surface exceeds 10,000 square meters, the largest of all known Inka carved outcrops.



4.20. The south side of the Samaipata outcrop. It has hundreds of niches, shelves, and steps.

in size. The Alcaya chronicle (1961: 47–50) relates that it was the seat of the region's Inka leader, who controlled the easternmost extension of the Inka state, a territory that entered into the Bolivian lowlands by the Piray and Guapay rivers (Saignes 1985: 5–31). The Alcaya historical source indicates that Samaipata was a fort,¹² but authorities disagree on this issue (chap. 6), as there is little or no evidence of fortifications, and the site itself is not found on the outer fringe of Inka-controlled territory, which is some distance farther to the east.

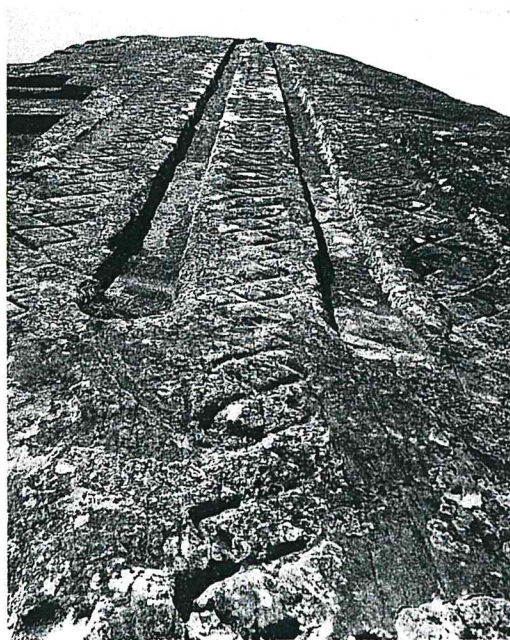
Samaipata may be the largest single stone outcrop ever carved under Inka direction. It is extraordinary, not only for its size, but for its location so far from Cuzco. Long the subject of interest to Bolivian and foreign scholars (D'Orbigny 1835–1847; Pucher 1945; Trimborn 1967: 130–169; Boero and Rivera 1979), the carved stone of Samaipata exceeds 10,000 square meters. Resting at about 1,950 meters above sea level, the sculpted prominence is doubtless Inka because of the great similarity of its motifs to other Inka carved stones and outcrops. The outcrop is oriented east-west, and the principal carved channels are also oriented in that direction, which raises issues related to Inka astronomy



4.21. Large and small rectangular niches are found on the north side of Samaipata's outcrop.

(chap. 8). There are several detailed descriptions of the monument, but Trimborn's (1959: 40–70, 1967: 130–169) are the most detailed and analytical, incorporating and evaluating all previous descriptions as well as unpublished information from Nordenskiöld.

The carved monument has many steps and shelves in great abundance on its southern side (fig. 4.20), a lengthy sloped surface. On the northern side there are elaborate rectangular niches (fig. 4.21). The top of the monument is carved with numerous channels and basins, associated with libations. Three long east-west double zigzag channels forming rhomboid shapes are reminiscent of channels on Inka *paccha* (fig. 4.22) (chap. 5). On the highest part of the rock is a unique set of alternating rectangular and triangular shelves or seats forming a circle some four meters in diameter. On the eastern side of the outcrop are relief carvings of felines, a bird, and a snake (fig. 4.23). Some traces of walls are found just on the southern side of the outcrop (Trimborn 1967: 141) as well as on the eastern side. These walls are not to be confused with the yet-unstudied settlement resting in the forest a few meters to the south of the monument.



4.22. Double zigzag and straight channels run from east to west down Samaipata's top surface.



4.23. Several animals were carved on the eastern side of the top of Samaipata's outcrop. A carved puma is in the foreground.

Too little is still known about Inka stone carving to interpret the full meaning of Samaipata. It would appear, however, that it was not only part of the settlement, but that it was planned, with orderly preconceived designs and features that are interrelated in ways only faintly understood. This is not necessarily the case with all carved rocks, since many appear to be sculpted haphazardly, with niches, steps, shelves, ca-

nals, and basins jumbled together in a way that appears dictated by chance or the rock's original shape, rather than by any complex design concept.

Settlements without Important Stones

The idea that boulders or outcrops, whether sculpted or not, form part of the design of Inka settlements is not applicable to all of the larger Inka settlements. Some settlements were built where stones or rocks did not affect their general design. Such is the case on the Peruvian coast between Lima and Nasca, where large Inka settlements exist but where there is no evidence for important boulders as part of the site. This may be due in part to a general lack of large boulders at sites on the desert, or to influences from local or non-Inka cultural traditions that encouraged other aspects of a region's topography to become part of the design. Thus the relationship of a settlement to the sea,¹³ nearby mountain passes or peaks, and water systems could have replaced "sacred" stones and outcrops. Also, we have no idea of the importance that portable rocks and stones may have had in such sites since none are preserved *in situ*.

South of about 18 degrees south latitude there is no good published evidence for fine Inka stone carving. The reasons for this are yet unclear (Hyslop 1984: 284), but may be related to less labor available in the southern part of the state or to the generally lower priority of such areas when compared with the more densely populated regions and larger settlements of the central and northern Andes. The lack of carved stones throughout what is now Chile and Argentina does not contradict the importance of uncarved boulders or outcrops in settlement planning. Uncarved special stones were important at settlements such as Nevados de Aconquija and Pucará de Andalgalá. The lack of carved boulders in southern Inka sites means that these settlements must be scrutinized with greater care to find the important uncarved boulders and outcrops. These rocks may sometimes be indicated by architectural features that point them out, such as surrounding walls or terraces.

Stone as a Criterion for Settlement Location

The significance of boulders and outcrops in Inka settlements raises the question of whether stones were actually powerful enough to determine a settlement's location. It would appear that important stones could at least determine the location of shrines, smaller than settlements. The Chacha Bamba site in the Urubamba region mapped by Fejos (1944: fig. 11) (fig. 4.24) is a good example of a small architectural complex centering on a carved stone.

But could a sacred rock or outcrop actually determine the location of

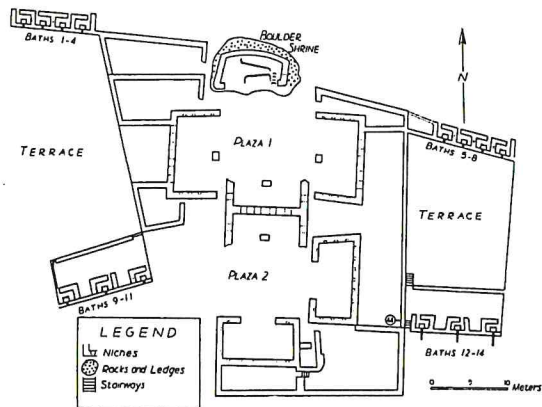
a major human settlement? There is some evidence, albeit tentative. The Inka complex at the northern end of the Island of the Sun (chap. 3) centers around a sacred rock associated with Inka origin myths. If the rock were removed, the Lake Titicaca sanctuary's reason for existing would be lost. Is the architectural complex there because of the rock, or did building the sanctuary decree the importance of the rock?

One site in the Cuzco area, Caquia Xaquixaguana (also known as Huchuy Cuzco), had a special relationship to King Wirakocha (Cieza 1967: 131, chap. 38; Betanzos 1968: 30, chap. 10) and is generally described as being set on a great rock prominence (fig. 4.25). It is thought-provoking to consider that this great natural feature may have been central to the selection of this particular site.

MacLean raises this same question (1986: 93–96) in regard to sites in the area of Machu Picchu. She notes that several sites, including Machu Picchu, were built on particularly rocky terrain, which was incorporated into their architecture. Most of these sites have good examples of boulder sculpture. MacLean explores various practical reasons for choosing such rocky locations but leaves open the question of whether rock as a sacred commodity was a determinant of settlement location.

Outside of the Cuzco area, one might ask whether the Inka occupation of the ancient site of Pucará (Mujica and Wheeler 1981), inhabited for at least two thousand years, had something to do with the prominent rock mountain beside it. Local myths see a puma shape in the mountain, and possibly the mountain's powers were central to the symbolism of the site.

One could list many more Inka sites associated with prominent outcrops or boulders. The point is made, however, that stone and rock may be more significant than previously imagined in determining the locations of some Inka settlements.



4.24. The Chacha Bamba shrine near Machu Picchu focuses on a large carved outcrop. A complex water system with basins in the four corners enhances the ritual importance of this small architectural complex. From Fejos (1944: 38). Copyright 1944 by the Wenner-Gren Foundation for Anthropological Research, Inc., New York.



4.25. Caquia Xaquixaguana (Huchuy Cuzco) rests on a great rock prominence overlooking the Urubamba Valley, Peru. The site is located on terraces set around a plaza in the upper-left-central part of the photograph. Courtesy Department of Library Services, AMNH, Neg. no. 334771 (photo by Shippee Johnson).

Stones and Site Design

Were important rocks consistently placed within certain recognizable sectors of Inka settlements? It seems that this may occasionally have

been the case, but that the varied topography of each site also influenced whether and which stones would be specially treated. Thus settlements without boulders (such as those on the Pacific coast) did not incorporate them into their design. Still other settlements have no outcrops within their architectural limits, but one might find specially treated outcrops nearby. Often, special boulders are the focal point of a set of buildings. Since the boulders were generally not moved, the placement of the buildings must have been determined in part by the boulder.

Were specific criteria consistently used to decide which boulders or outcrops would receive special attention? At sites such as Machu Picchu, Chinchero, Tipón, Pucará de Andalgalá, Ingapirca, and Pambamarca, stones resting on high prominences are specially treated. Indeed, it would seem that any Inka architect designing a settlement with a boulder or outcrop set high would incorporate it into the design.

Nevertheless, all specially defined stones are not located up high. Others appear near water sources or irrigation channels, and in important buildings, or on special agricultural terraces. They formed part of the *zeque* system of Cuzco and perhaps had a similar role in other settlements. Important boulders and outcrops are not always within the architectural limits of a site, but frequently found beside or near it.

Summary

Evidence that boulders and outcrops were integrated into Inka architectural planning and exerted some influence over it is overwhelming. Whereas some important rocks are clearly outside of settlements, those on site peripheries should probably be considered part of the settlement. The question of whether some rocks and outcrops were actually responsible for the siting of settlements beside or around them remains unanswered.

The symbolism of rocks and stone outcrops in Inka culture was so complex that one cannot simply refer to a "cult of stone" or the "sacredness of rock" and expect to explain why such stone is important. Future detailed and comparative research should delve more thoroughly into the role of these stones. Yet-undiscovered patterns in their placement, the presence or absence of carving, their associations with natural and artificial features, the types of carving, and their architectural presentation may some day clarify which stones were intended for offerings (and of what types), which were *pacarinas*, which fulfilled *zeque* functions, and which had multiple roles. Such research will be a major contribution to an understanding of Inka architecture and general site design.

5 Water

Among the many things worshiped by the Inkas, water played a role second only to that of the Sun and the Creator, Wirakocha. The thunder god, Illapa (Tunupa in Aymara), was believed to influence meteorological phenomena such as rain, lightning, thunder, and snow. This god was venerated in the Temple of the Sun in Cuzco, and is said to have had a separate house of worship in the Totocachi district of Cuzco (Cobo 1964: 160–161, Bk. 13, chap. 7), and his statue was carried to war by Inka kings.

Many Andean myths emphasize water, an element so important that it, or at least its source, was considered sacred. Fundamental to the Inka, and to some degree the Andean, world was the concept that water surrounded the world and lay beneath it. For example, the Milky Way was viewed as a great river that traversed the cosmos, and beneath the land was the sea into which all rivers and lakes ultimately drained (Urton 1978). Andean lakes thus formed part of these religious beliefs. Primary among them was Lake Titicaca, which Inka religion linked to the creation, as well as to the origin of their own people. In Andean communities, springs or other water sources were often considered founding ancestors. Sherbondy (1982a: 120–146) has written perceptively about how people's relationship to water sources was used to express concepts concerning their origins and ethnicity, and how myths relating to subterranean water passages could be used to tie people to the same lake, thus expressing "the unity of several people and nations within one kingdom or empire."

Water permeates several aspects of Andean and Inka religion.¹ It is directly tied to sacred mountains (whose worship was thought to be intimately tied to rainfall) where sanctuaries used for worship and sacrifices (Reinhard 1983) were built. Considerable evidence in pre-Hispanic Andean iconography indicates that water worship is quite ancient. There are some grounds (Demarest 1981) for thinking that the creator god Wirakocha, as its name suggests (*kocha* means lake), was closely related