

## WARI RITUAL POWER AT CONCHOPATA: AN INTERPRETATION OF ANADENANTHERA COLUBRINA ICONOGRAPHY

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*Iconographic studies often provide evidence to interpret ritual activities of archaeologically known cultures. Recent excavations at the site of Conchopata near Ayacucho, Peru, led to a re-analysis of the ritual behavior of Middle Horizon (A.D. 750–1000) Wari society. The identification of a hallucinogenic plant design, Anadenanthera colubrina, depicted on Conchopata offering pottery contributes a crucial understanding of a previously unknown artistic icon. This icon was discerned as depicted in various abstract renditions on Middle Horizon textiles, snuff paraphernalia, ceramics, and stone sculpture, including the Gate of the Sun at Tiwanaku, Bolivia. Based on historic and ethnographic evidence, the plant's prehistoric use as a hallucinogen is discussed with regard to suggested chicha drinking ceremonies, and the transitional role of Wari leaders from shamans to priests.*

*Los estudios iconográficos proporcionan a menudo evidencias que permiten interpretar actividades rituales de culturas conocidas desde el punto de vista arqueológico. Las excavaciones recientes en el sitio de Conchopata, cerca de Ayacucho, Perú, condujeron a un nuevo análisis del comportamiento ritual de la sociedad Wari durante el Horizonte Medio (750–1000 D.C.). La identificación de un diseño de la planta alucinógena Anadenanthera colubrina, representada en una ofrenda cerámica Conchopata contribuye al conocimiento crucial para interpretar a un icono artístico anteriormente desconocido. Este icono fue reconocido en diversas versiones abstractas sobre textiles, parafernalia para rape, cerámica y esculturas líticas pertenecientes al Horizonte Medio incluyendo a la Puerta del Sol en Tiwanaku, Bolivia. Basado en evidencias históricas y etnográficas, se discute el uso prehistórico de esta planta alucinógena en relaciona al consumo de chicha en ceremonias rituales y se discute el papel transicional de los líderes Wari de curanderos a sacerdotes.*

The study of iconography can be very important for interpreting prehistoric behavior and social activities. Icons are artistic symbols that are representative of, or interpreted as, sources of authoritative knowledge, usually political or religious. By analyzing the patterns of their use on politico-religious artifacts, we may be able to discern the activities of prehistoric leaders, such as shamans and priests, in controlling and managing their society. Such analysis may help to explain social processes such as the development of a complex society. Since the 1940s, Andean archaeologists have investigated and analyzed the prehistoric remains that define the Wari culture of Middle Horizon (A.D. 750–1000) Andean prehistory (Bennett 1953; Isbell and McEwan 1991; Lumbreras 1960; Tello 1942). From an architecturally impressive, 250-hectare urban center 10 km north of Ayacucho, the Wari col-

onized several diverse populations of the Andes. The evidence of colonization is imposed, standardized architectural buildings that suggest a complex social system and political control by the Wari as they expanded (Anders 1991; Isbell et al. 1991; McEwan 1991; Schreiber 1992; Topic 1991). Within Wari art is an elaborate religious iconography that incorporated coastal Nasca and highland Pukara art from the Early Intermediate Period (A.D. 0–750). This iconography pertains to the Conchopata style from the site of the same name, located in the eastern suburbs of Ayacucho, and to the Robles Moqo style from the Pacheco site on the south coast (Menzel 1964) (Figure 1). In 1997, José Ochatoma, professor at the Universidad Nacional de San Cristóbal de Huamanga, conducted excavations at Conchopata. He recovered more pottery in this ceremonial style, including a stylized plant image. In this paper, I sug-

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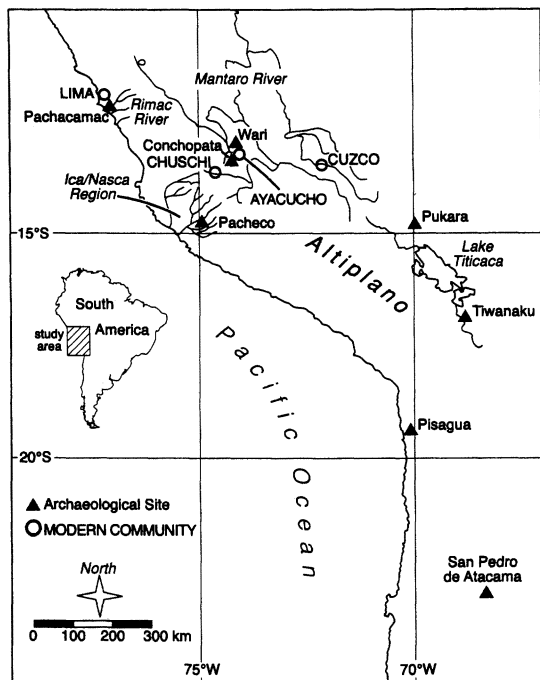


Figure 1. Areas of Peru, Bolivia and Chile with archaeological sites of the Wari and Tiwanaku cultures.

gest this plant image is the first identification of a Wari-style icon of a well-known hallucinogenic plant, *Anadenanthera colubrina*. I will describe the Wari religious iconography, the method of identifying this plant as an icon, the previously unknown renditions on other artifacts, and the plant's hallucinogenic properties. Then I will discuss its use in *chicha* drinking ceremonies, and how it may be an important ritual icon indicating the social development of an ancient priesthood.

Within the Wari iconography, the principal icons are typically images of deities and subordinate attendants. The principal deity icon is usually depicted standing in a frontal pose, grasping a staff in each hand by its sides. The attendant icons are drawn in profile. They are depicted in either a standing pose or positioned horizontally as though flying. If standing, then they appear to be genuflecting on one bent knee. One hand grasps a staff in front of them; if the other hand is depicted, then it is sometimes holding a trophy head or club. The attendant icons are also referred to as "angels" or "winged spirit men" (Menzel 1977:61) that combine animal and human features with a dorsal-wing motif. When combined the attendant icons occur on either side of the deity icon facing the deity icon.

In previous studies of Wari art, the iconography has been interpreted as representing a religious cult "around which the political system was built" (Menzel 1968:93), religious symbols of "control and a pretext for conquest" documenting a "proselytizing ecumenical religion" (Lumbreras 1974:163, 177), or an evolving ideology of a developing hierarchy "with subordination established by natural attributes of authority and power" (Isbell and Cook 1987:32). Thus, the iconography is both political and religious with little, if any, research suggesting that Wari religion and politics were separate social processes. One pattern of iconographic use is that numerous Wari tapestry tunics display the iconography of the subordinate attendant icons in which dozens are arranged in columns of vertical panels. I suggest that Wari leaders might have worn these tunics to symbolize themselves as deity-like by being the focus of these subordinate attendant icons that are purposefully arranged to face toward the tunic's vertical central line or the wearer. In Wari society, the wearer would appear empowered by these religious symbols and elevated to a higher social status (Knobloch 1986, 1988). Thus, as sources of power such politico-religious iconography may document some of the activities by leaders in controlling and managing a society, especially in the case of Wari as its society is presumed to have expanded into a complex conquest state or empire.

Another activity that focuses on this Wari iconography was a curious tradition of burying large, colorfully decorated ceramic vessels, usually urns (Anders 1990; Cook 1979; Menzel 1964, 1968; Ravines Sánchez 1968). Since Julio Tello's 1942 discovery of a possible burial of ceramics or ceramic offering of such urns at Conchopata, the iconography of the decoration has been identified as similar to the iconography displayed on the Gate of the Sun at Tiwanaku, Bolivia and suggests that these two ancient populations from highland Peru and Bolivia possibly shared common religious activities (Bennett 1953:99; Menzel 1964:19-23; Spielvogel 1955; Tello 1942:110-111). The Gate of the Sun may date to Tiwanaku IV (A.D. 450-750), previously described as an example of the Tiwanaku Classic Phase stone sculpture (Bennett 1934:474).

The pottery burials are even more curious in that the Wari smashed these beautiful vessels prior to burial. Perhaps, the smashing was symbolic of sacrificial death or, once the content was gone, the vessels

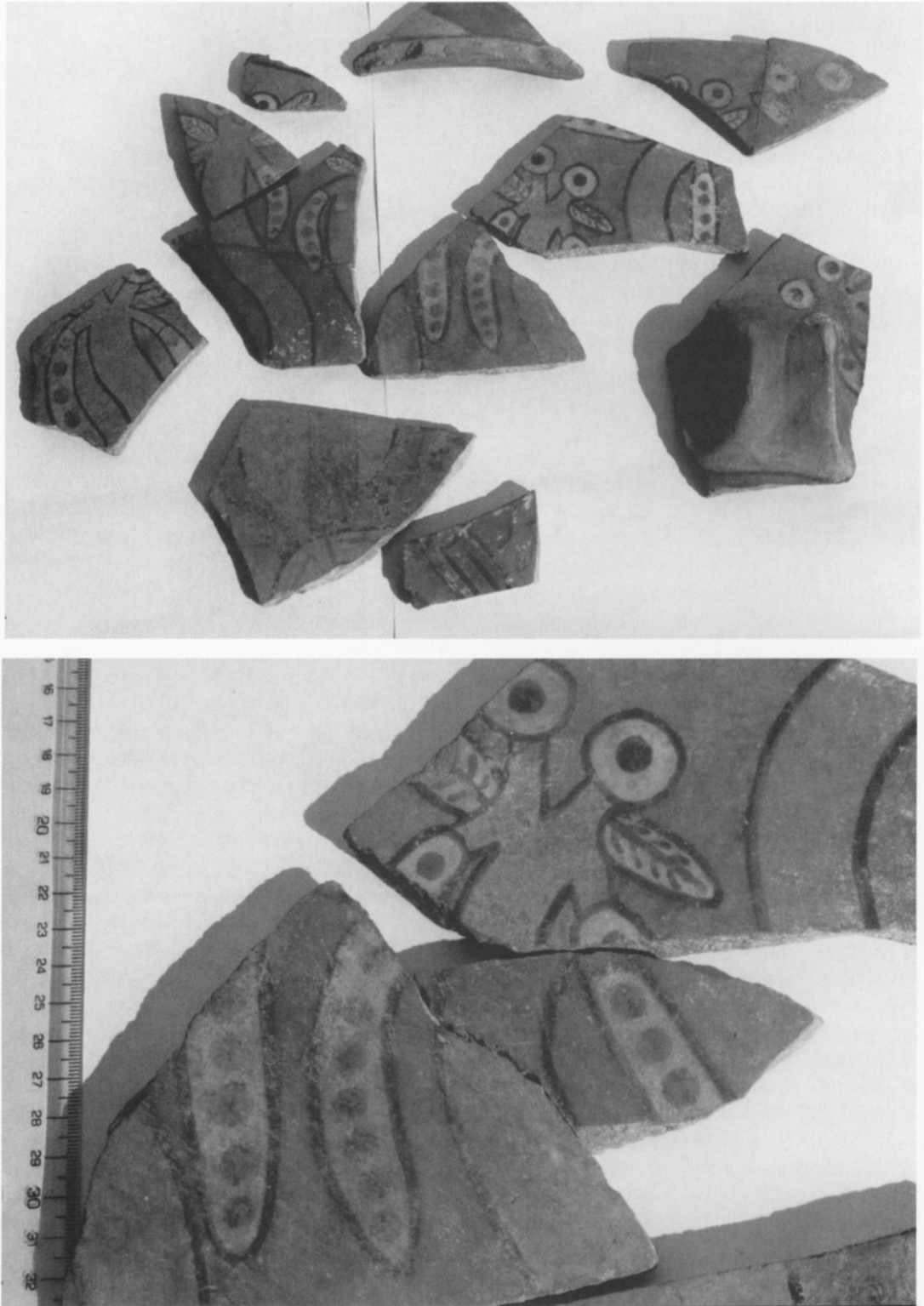


Figure 2. Ceramics from Ochatoma 1997 excavation at Conchopata, Peru: images of the *A. colubrina* plant icon, with detail below.

were too sacred to be ever used again. Along with destroying sacred icons, the extensive amount of labor involved in production and decoration could have enhanced the value of the sacrifice. To support this theory of sacrifice there was one excavation in which humans appear to have been sacrificed in this ritual (Isbell and Cook 1987). Another possible ceramic offering of large urns was discovered at the Pacheco site on the Peruvian south coast. Some urns display variants of deity icons and others display stylized images of plants, such as potato, *olluco*, *mashua* and *oca*. The plant images were identified by Yacovleff and Herrera (1934:Figure 28). Though stylized the plant identification was possible because the Wari artists distinguished primary attributes of the plants, such as the flowers, leaves, branches, fruit, or vegetable. Wari depictions of plants were highly simplistic as two-dimensional, flat shapes symmetrically positioned rather than naturally rendered like a photograph. Recently at the site of Conchopata, salvage excavations by José Ochatoma unearthed fragments of a large jar that also displayed stylized plant images (Figure 2). The artistic tradition or rule of symmetrical simplicity is also evident in the plant image on this Conchopata vessel.

Following artistic rules of symmetrical simplicity, the Wari artist drew this plant image with only two flowers at the top of a central branch, with two leaves below the flowers, one on either side, and with two seedpods hanging down below the leaves, one on either side. The image appears so unnatural that no initial identification was possible. By taking into account that the image was stylized according to Wari artistic convention in which only primary attributes are rendered, I was able to match the image with a natural plant based on those stylized attributes rather than expecting a natural appearance. The match was facilitated by the prior, extensive research of Yacovleff and Herrera (1935:42–43). Their naturalistic drawing of an *Anadenanthera* plant displayed all the primary attributes of the plant image. Specifically, the *Anadenanthera* is a mimosa tree with hanging bean-like pods and belongs to the *Leguminosae* family, thus the plant image displays oblong lobes with black dots. The tree grows to 20 m in height with a dark, spiky trunk whose diameter reaches 60 cm, and multi-paired, bipinnate leaves, thus the leaves are drawn as ovate shapes and almost feather like. The flowers cluster into white, hairy spheres like the flowers of a dandelion gone to seed. When viewed

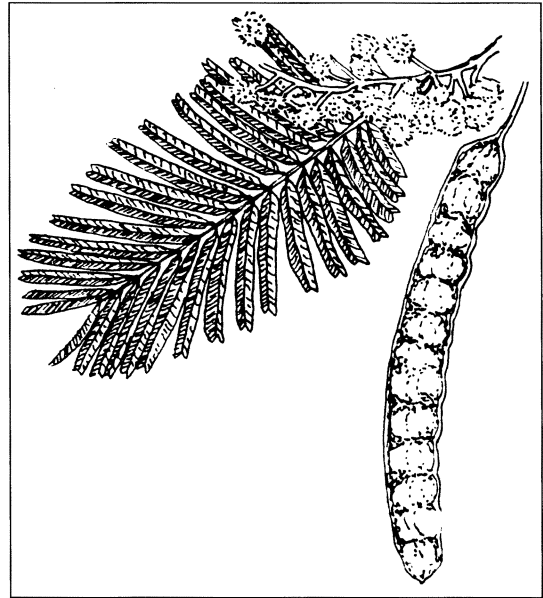


Figure 3. Natural drawing of *A. colubrina* indicating spherical flowers, bipinnate leaves and leguminous seedpod (after Yacovleff and Herrera 1935:Figure 51).

in photographs the centers appear dark with the lighter white around the center, thus the black central dot and lighter colored circle of the circled dot design elements that represent the flowers.

One species of *Anadenanthera*, *A. peregrina*, has a thick corky bark with acacia-like foliage and grows in the *llanos* region of the Orinoco basin of Columbia and Venezuela, as well as savannahs and light forests of northern Amazonia (Schultes 1972:27–28; Schultes and Hofmann 1979:119, 1980:145). Three other species referenced in the literature as *A. macrocarpa*, *A. excelsa*, and *A. colubrina* may have grown in northern Argentina, southern Peru, and Bolivia (Stafford 1992:316). *A. colubrina* grew in the valleys of tropical climates, and *A. macrocarpa* in the highlands of Peru and Bolivia (Yacovleff and Herrera 1935:42–43) (Figure 3). At the time of their research Yacovleff and Herrera labeled the genus *Piptadenia*, which has since been recognized as the genus *Anadenanthera*, founded in 1923 (Schultes and Hofmann 1980:140–141). Moreover, the *A. macrocarpa* species is now referred to as *A. colubrina* and as such is “morphologically very closely related to *A. peregrina*” (Schultes 1972:29). A very detailed botanical description of *Anadenanthera* can be found in Schultes and Hofmann (1980:149–152) who add that *A. colubrina* “occurs in eastern Brazil . . . Argentina, Bolivia, Paraguay, Peru and several local-

ities in southeastern Brazil.” Since the *A. colubrina* depiction on the Conchopata sherds illustrates the plant’s primary attributes, as an icon its various renditions can be identified on other Middle Horizon artifacts. For purposes of future identification, the primary design attributes of the plant icon are: 1) circled dots, usually two, at the top of the icon representing the spherical flowers; 2) two, symmetrically positioned ovate or rectangular shapes with interior lines representing the leaves, usually positioned below the circled dots; and, 3) oblong or rectangular shape with interior dots representing the seedpods. Also potentially useful are two secondary design attributes that are added to this list from other renditions described below. The wavy band representing the plant’s trunk is appended to a curved band of a simple interlocking fret design (see Figure 2). Such bands of interlocking fret designs are common in Wari art to outline stylized human heads. Thus, the entire image was possibly of a plant that appeared to have grown from an anthropomorphic head. This association is found on other renditions of this plant icon in which the icon is appended to a design band outlining a head motif or just a head motif (see Figures 4, 5a, 5b, 5c, 6b, 6d, 7, 8a, and 8b). Another attribute that occurs on renditions of this plant icon is a small triangle or rectangle design element located between the leaf-design attribute (see Figures 5a, 5c, 6d, 7, 8a, 8b, 9b, and 9c). In analyzing Wari and Tiwanaku iconography, I observed these primary and secondary attributes on possible examples or renditions of the plant icon and often found that the renditions combined only two attributes. When only one attribute occurred, I qualify the rendition as very speculative requiring further analysis.

I argue that the recent Conchopata rendition is so precise that there is little, if any, doubt about the botanical identification. Thus, the identification of this plant icon provides the first example of a Middle Horizon Wari artistic representation of a well-known, hallucinogenic plant. With this discovery the following research furthers our understanding of the Wari ceramic offering ritual at Conchopata.

#### Iconographic Examples of *Anadenanthera Colubrina*

A rather unique image of a Wari-attendant icon on a tapestry tunic with unknown provenience has proven crucial in the identification of other examples (Lavalle 1984:76–77) (Figure 4). This textile

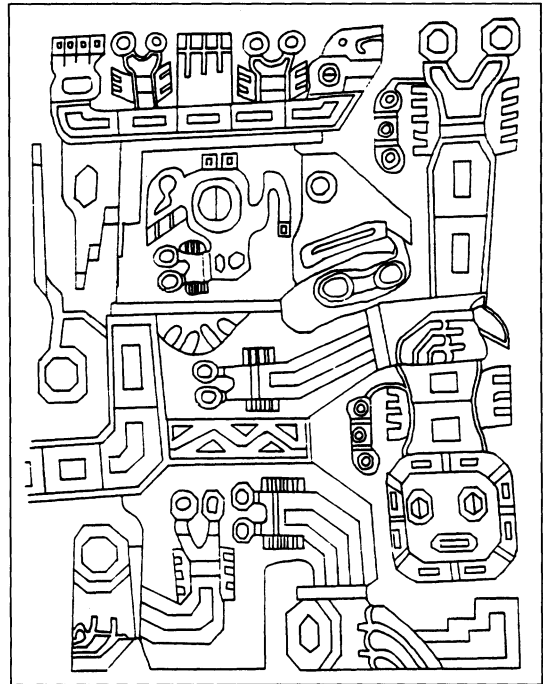
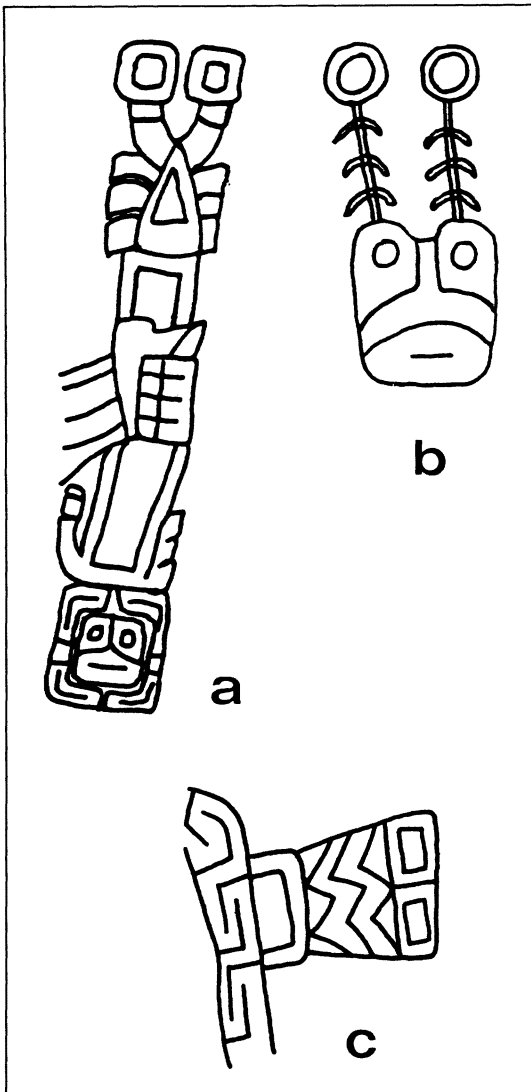


Figure 4. Lavalle textile with unknown provenience: *A. colubrina* plant icon appended to staff, arm, legs, headdress, and beak design elements and winged-eye motif (after Lavalle 1984:76–77).

displays attendant icons with bird-like attributes including one clawed hand holding a staff. At the bottom of each staff is depicted a stylized head motif. At the top is the plant icon. The plant icon has two circled dots for the flowers and two, symmetrically positioned half ovate shapes with lines that look like combs for the leaves. The seedpods are drawn independently of the other primary attributes. There are two seedpods that hang down to one side of the staff, at the top and at the bottom and a third seedpod hangs down from the beak. There are narrow bands running centrally within the attendant icon’s arms and legs that also end in the plant icon. The plant icon is also depicted in the headdress and appended to the eye motif. The eye motif includes a wing design element and will be referred to as a winged-eye motif. This textile example is crucial in identifying other examples because it depicts all three primary attributes, flowers, leaves, and seedpods. With these attributes this textile rendition is the closest example to the Conchopata version that links to the identity of the plant, thereby providing a transitional version to examples with fewer plant icon attributes.



**Figure 5.** Images on snuff tablets; a: San Pedro de Atacama, Chile: *A. colubrina* plant icon located at top of staff (after Torres 1995:Figure 11); b: Tiwanaku, Bolivia: *A. colubrina* plant icon located atop stylized head motif (after Torres 1995:Figure 6); c: unknown provenience: *A. colubrina* plant icon appended to fret band (after Lavallo 1984:184, left).

### Snuff Tablets

On a snuff tablet from San Pedro de Atacama (Torres 1995:Figure 11) (Figure 5a), the entire image consists of a deity icon holding two staffs. The plant icon is appended to the top of the staff in the deity icon's left hand. This rendition depicts two circled dots for the flowers, and two, symmetrically positioned rectangles with two curved lines for the leaves. A triangle design element is between the leaves. At

the bottom of the staff is appended a stylized head motif. This deity icon's staff shares the structural layout with the plant icon of the attendant icon's staff depicted on the Lavallo textile.

A snuff tablet from Tiwanaku depicts a row of four stylized renditions (Torres 1995:Figure 6); only one is shown here (Figure 5b). The plant icon is represented by a circled dot for the flower, and two, symmetrically positioned sets of simple diagonal lines for the leaves. Two plant icons are appended to the top of a head motif. On another snuff tablet the plant icon is stylized and simplified (Lavallo 1984:184, left) (Figure 5c) to only two plant icon attributes. In this rendition the flowers are depicted by the two, circled dots. The leaves are represented by two, symmetrically positioned bands of diagonally intersected lines known as chevron designs.

### Textiles

I suggest the following example is a very simplified rendition with only one plant icon attribute of the leaves as two, symmetrically positioned, vertical bands of chevrons atop a staff (Lavallo 1984:87) (Figure 6a). These chevrons might represent raptor feathers. However, the chevrons point upward. If they represented raptor feathers, then these chevrons should point downward to represent the feather barbs along the shaft as the feather's pith would be attached to the staff. This example is more speculative than others, but I suggest warrants a possibility.

One textile, from Pachacamac, is a very fragmented tapestry depicting rows of attendant icons grasping staffs (Eisleb and Strelow 1980:Figure 328) (Figure 6b). The plant icon is very stylized, combining its primary attributes on the chest of each attendant icon. The flower is a single band with a circled dot hanging from the design band that outlines the attendant's head. The leaves were depicted by two, symmetrically positioned rows of diagonal lines. The seedpod is below as a rectangle with two dots. Another rendition of the plant icon is associated with two "unique profile figures (human?)" on a tunic with no provenience (Bergh 1999:Figure 95). These two standing human figures have their faces and feet in profile yet their two hands hold staffs on either side of a body facing to the front (Figure 6c). The plant icon is appended to the top of the staff held by one human figure and hanging from the belt of the other. The staff version has two circled dots for the flowers and two, symmetrically positioned short

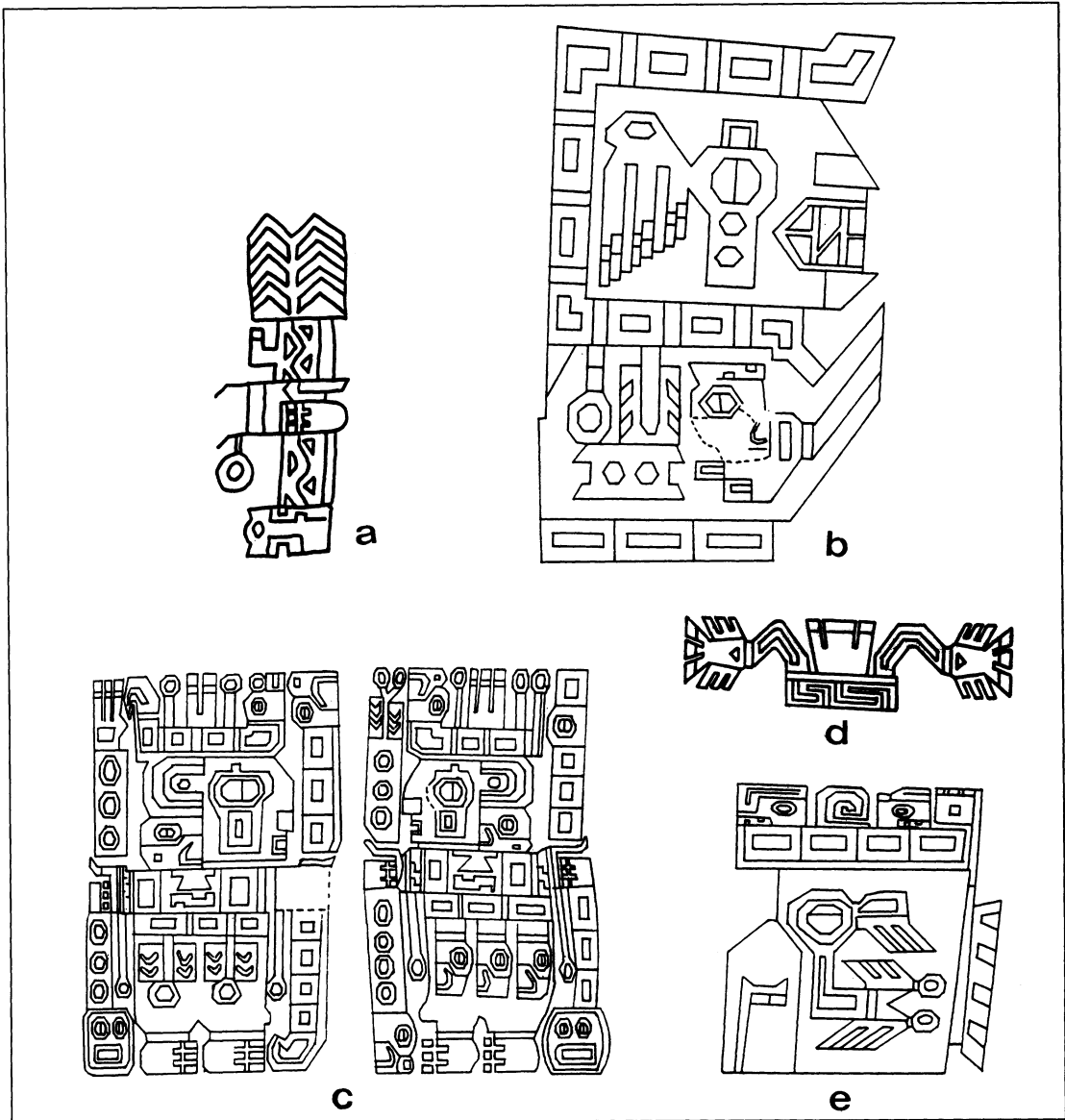


Figure 6. Images on textiles; a: Nasca, Peru: *A. colubrina* plant icon may be represented by two sets of chevrons atop a staff held by an attendant icon (after Lavalley 1984:87); b: Pachacamac, Peru: *A. colubrina* plant icon is represented by cluster of design elements hanging from neckband design (after Eisleb and Strelow 1980:Figure 328); c: unknown provenience: *A. colubrina* plant icon appended to staff and belt (after Bergh 1999:Figure 95); d: Pisagua, Chile: *A. colubrina* plant icon appended to headdress (after Conklin 1983:Figure 24); e: unknown provenience: *A. colubrina* plant icon is appended to winged-eye motif (after LaFarge 1981:94).

chevron bands for the leaves. The two plant icons hanging from the belt have only one circled dot each for a flower with two, symmetrically positioned short chevron bands for the leaves. With these images, the only other plant icon attribute is that one staff with each figure is atop a stylized head motif.

From a Pisagua grave lot in Chile, a Tiwanaku

headband displays a row of “mythical figures,” possibly pumas (Conklin 1983:Figure 23, 24). Conklin dates this textile to the middle of his Tiwanaku sequence, contemporary with the Gate of the Sun (Conklin 1983:Table 1, 1991:Figure 7). Appended to the headdress and front claw or foot are short bands ending in the plant icon. Only the headdress



**Figure 7. Textile with unknown provenience: *A. colubrina* plant icon appended to headdress of a deity icon (The Textile Museum, Washington, D.C., no. 1972.27.1).**

example is presented here (Figure 6d). In this rendition, the plant icon retains the leaves as two, symmetrically positioned sets of diagonal lines, a triangle design element between the leaves, but the circled dots are replaced by three squared design elements on bands to represent the flower attributes. Conklin refers to these latter as “tail feathers” because he suggested the motif represented headless birds. This rendition does appear bird-like but I argue it follows the conventions of the plant icon’s attribute combinations more logically. Also, other Tiwanaku carved stone examples discussed below indicate a preference for the flower and seedpod attributes to be represented by three design elements rather than two. Thus, this rendition may be a stylization with a Tiwanaku design rubric.

Another tapestry tunic with no provenience displays several attendant icons with bird-like attributes (LaFarge 1981:94) (Figure 6e). Only the winged-eye motif has the plant icon appended in a similar manner as the Lavalle textile. This rendition depicts the plant icon with two circled dots for the flowers appended to two, symmetrically positioned sets of diagonal lines for the leaves. Another partial textile tapestry displays a very complex scene of a deity icon flanked on either side by two small human figures, attendant icons, and small, mythical creature icons (Conklin 1971; Rowe 1974:Plate 50). The plant icon occurs appended to the headdress of the deity icon, one on either side just below the top corners (Figure 7). This rendition has two circled dots for the flowers and two, symmetrically positioned sets of diagonal lines for the leaves. A triangle design element occurs between the leaves.

### *Ceramics*

In addition to the Conchopata example, described above, a second example from this site occurs on large urns from Tello’s 1942 excavation photographed by Anita Cook (Isbell and Cook 1987:30–31). On these large urns, a deity icon is flanked by two attendant icon variants. The plant icon is appended to the top of the headdress on one of the attendant icons (Figure 8a). In this rendition, only two plant icon attributes are present. On either side of a triangle design element there are two, symmetrically positioned half ovate shapes with three curved lines to represent the leaves. With all renditions taken into account, the absence of the flower attribute is very rare. A third example comes from the 1999 excavations at Conchopata directed by Anita Cook and William Isbell. The sherd is badly damaged in various areas as indicated by dotted lines in the illustration (Figure 8b). The plant icon is appended to the headdress of an attendant icon. The flowers are represented by two prominent circled dots. As with the Tello example, there are two, symmetrically positioned half-ovate shapes with three curved lines to represent the leaves. The design element between the leaves appears to be a rectangle rather than a triangle. From the Cuzco area of Pomacachi, another stylized rendition was found depicted on a Wari-style tall cup (San Roman Luna 1983) (Figure 8c). There are two circled dots for the flowers and two, symmetrically positioned short chevron bands on either side for the leaves. Without the known plant icon attributes this Pomacachi example could be mistaken for an insect, perhaps butterfly, image. Because this tall cup has straight, slightly



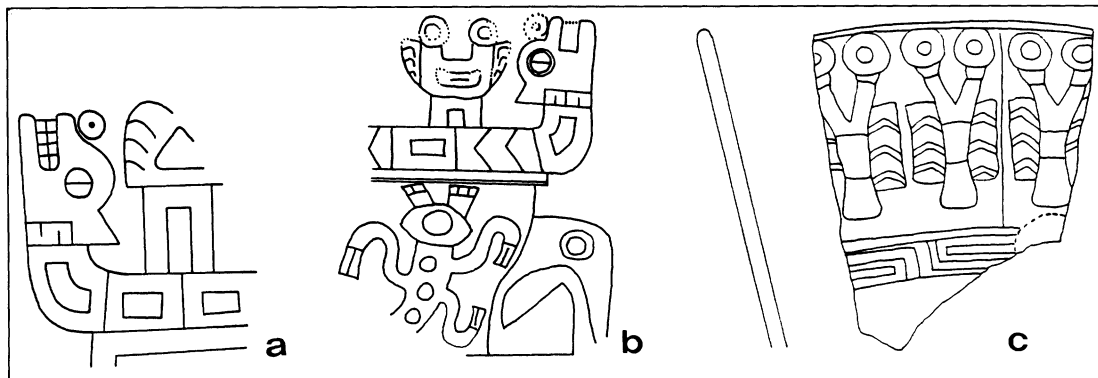


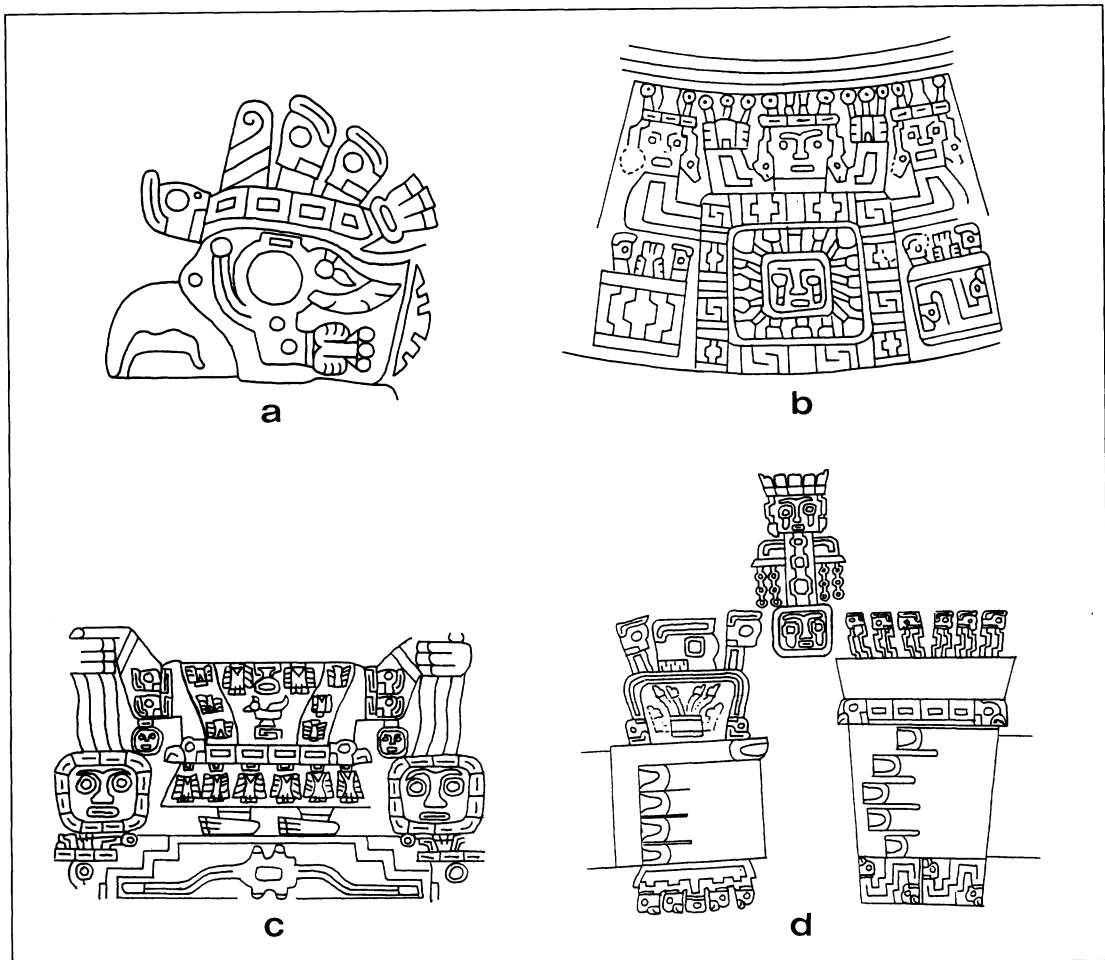
Figure 8. Images on ceramic artifacts; a: Tello's 1942 excavation at Conchopata, Peru: *A. colubrina* plant icon appended to headdress of an attendant icon (after Isbell and Cook 1987:31, upper left); b: Isbell and Cook 1999 excavation at Conchopata, Peru: *A. colubrina* plant icon appended to headdress of an attendant icon; c: Cuzco area, Peru: *A. colubrina* plant icon repeated around top of Epoch 2 style cup (after San Roman Luna 1983:73, bottom).

flaring sides and flat bottom, it is more similar to Epoch 2-shape vessels, and, perhaps, this piece may be used as a temporal marker for future stylistic seriation.

#### Stone Sculpture

The most interesting example of the plant icon thus far discovered is displayed on the famous Gate of the Sun at Tiwanaku, Bolivia. For generations, the iconography of this stone doorway has been interpreted as religious symbolism or as a calendrical device (Posnansky 1945, 1957). Every minute design element has been labeled based either on logic (e.g., eyes, wings, steps, staffs, humans) or conjecture (e.g., sun, birds, gods, angels). Few if any of the stylized design elements or motifs on this famous stone sculpture are known beyond reasonable doubt to represent anything real and natural. Thus, the plant icon identification may be a significant breakthrough in deciphering the meanings of the sculpted iconography. The plant icon is appended to the winged-eye motif of the attendant icon with bird-like attributes (Figure 9a). This rendition has three, rather than two, circles for the flowers and, like the Conchopata ceramic examples, has two, symmetrically positioned half ovate shapes with three curved lines to represent the leaves. This rendition is mirrored by the Lavalle textile (see Figure 4); both of the winged-eye motifs have a short curved band in front of the eye, small rectangular design elements atop the eye, and two filler dots below the eye. This rendition is also similar to the LaFarge textile example (see Figure 6e). The plant icon is also carved into a grinding stone from Tiwanaku (Ponce Sanginés 1964:Figures

23, Plate 11; Rowe 1974:Figure 403). This cylindrical stone is about 15 cm thick and 47 cm in diameter with a shallow circular depression on top. The stone was carved all around the upper half of its outer surface and around a wide border on the top. The outer surface is covered with an interlocking pattern of deity icons, although the tops of their stylized heads are worn off. Around the top border a scroll design of interlocking head motifs displays the plant icon appended to the headdresses (Figure 9b). There are three circled dots for the flowers and two, symmetrically positioned rectangles with two lines for the leaves. Between the leaves is a small rectangle design element. Another stone bowl was located on the Lake Titicaca island of Taquiri (Rydén 1947:Figure 147). Unfortunately, photographs are not published for this "cube shaped" object, but only drawings of three sides of the cube that may not represent the correct details of the plant icon. This rendition depicts the plant icon in the shoulder straps, and hanging from the belt and neck of a deity icon (Figure 9c). These design elements appear like the headless birds of Conklin's Pisagua textile description in that the flowers are represented by three rectangular design elements rather than circled dots. Two, symmetrically positioned rectangles with three lines represent the leaves. Between the leaves is a triangle design element. The deity also grasps two staffs atop head motifs. Another stone sculpture carved in great detail and dating to Tiwanaku IV or the Classic Phase may also have a representation of the plant icon. Known as the Bennett Monolith, this free-standing statue represents a mythical being covered with symbols and icons (Bennett 1934:Figure



**Figure 9. Images on stone sculpture; a: Gate of the Sun at Tiwanaku, Bolivia: *A. colubrina* plant icon appended to winged-eye motif of an attendant icon (after Posnansky 1945:Plate XXV, top); b: grinding stone from Tiwanaku, Bolivia: *A. colubrina* plant icon appended to headdress (after Ponce 1964:Figure 15); c: cubical stone bowl from Taquiri, Lake Titicaca: *A. colubrina* plant icon appended to neckband, shoulder straps and belt of deity icon (after Rydén 1947:Figure 147); d: Bennett Monolith from Tiwanaku, Bolivia: *A. colubrina* plant icon located on chest area of statue (after Posnansky 1945:Insert).**

23; Posnansky 1945:Insert). This mythical being appears to be wearing pants rather than the typical highland tunic. Thus the figure follows the stylized depictions of the attendant icons with discernable arms and legs exposed rather than of the deity icon whose body is covered by clothing, such as a tunic. Two arms are depicted bent at the elbows and held against the chest. One hand holds a *kero* or cup, and the other possible snuff paraphernalia (Berenguer 1987) (Figure 9d). Though structurally unlike other renditions, the plant icon still retains one primary and one secondary attribute: 1) hanging seedpods with the Tiwanaku preference for three circles rather than two, and 2) a staff atop a stylized human head. To

summarize, the Tiwanaku stone sculpture and Pisagua textile renditions are most similar in that they display three design elements to represent the flowers. Thus these artifacts may be temporally associated or signify a cultural distinction from Wari renditions. Most of the associated attendant icons display bird-like design elements. The plant icon is often appended to a staff with a head motif on the bottom. The leaves are always represented by two symmetrically positioned design elements that are either diagonal lines, curved lines, or chevrons. The frequent lack of the seedpod attribute is curious since the hallucinogenic properties of the plant come from the seeds. Perhaps the icon was simplified to mask

such information from common view and, therefore, such icons could have been understood only by a knowledgeable elite.

### The Hallucinogenic Properties of *Anadenanthera Colubrina*

The hallucinogenic properties of *A. colubrina* are due to the production of tryptamine alkaloids in the plant's seeds. Constantino Manuel Torres (1995, 1996; Torres and Repke 1996) has written extensively on the use of *A. colubrina* in South America. Recent analysis indicates that a specific tryptamine known as bufotenine (5-hydroxy-N, N-dimethyl-tryptamine) "is solely responsible for the observed central activity of these preparations" by the Wichi shamans of northwestern Argentina (Torres and Repke 1996:53–54). To activate this tryptamine and acquire the hallucinogenic experience, the seeds are ground and ingested as snuff, enema, or smoke. Ingestion of the seeds by eating or drinking is not as effective because the stomach produces monoamine oxidase (MAO), an enzyme that deactivates some tryptamines. The plant's genetic cousin, *A. peregrina*, is also well known in northern South America and used as snuff, called *yopo* (Schultes and Hofmann 1979:116–119). Within the Wari and Tiwanaku societies, the ceremonial activities are often limited to descriptions of ceramic offerings, burials, trophy heads, and temples. The social behavior by the participants is poorly understood. With the evidence of the *A. colubrina* icon, I suggest that ceremonial activities can be enriched by references to *chicha* drinking rituals and shaman or priest behavior due to the many ethnohistoric and ethnographic examples of the use of this hallucinogen.

### Discussion

Along with its well-documented hallucinogenic properties, the presence of the *A. colubrina* icon on Wari and Tiwanaku artifacts brings to the discussion of politico-religious phenomena several new and interesting areas of further research into understanding iconography and associated ritual activities.

#### *Staffs of Authority*

The wood of the *A. colubrina* tree is ethnohistorically documented to have been made into beautiful staffs that are highly polished: "Su madera dura y pesada se emplea de preferencia para la fabricación de bastones de lujo, los que después de barnizados

presentan jaspes de bello aspecto" (Yacovleff and Herrera 1935:42–43). Currently the wood of this tree is commercially harvested and exported because it is very durable and extremely rot resistant (Eco-Timber 2000). Several examples show the plant icon positioned atop a staff held by Wari and Tiwanaku anthropomorphic icons (see Figures 4, 5a, 6a, and 6c). Depictions of mythical icons holding staffs are ubiquitous throughout the Andes since the Early Horizon (800–100 B.C.) with the north highland Chavín culture. Individuals may have used such symbols of authority to validate themselves as leaders in the minds of the Andean populations they tried to control. With a staff made from the *A. colubrina* wood, a leader might be more closely associated with the plant's ritual power and icon references thereby enhancing an authoritative social position. No Wari staffs have yet been found.

#### *Conchopata Vessels*

The Conchopata ceramic offerings may represent a ritual activity that ended with the smashing and burial of ceremonial vessels. I suggest that the presence of the *A. colubrina* plant icon may help to describe the ceremonial activities preceding the burial.

The current literature compiled by Torres indicates that snuffing paraphernalia are the best indicators for the use of the plant since "psychoactive plants are rarely represented in Andean Pre-Columbian artifacts" (Torres 1995:295). Indeed, analysis of snuff powder (Torres et al. 1991) indicates that the plant was known in the San Pedro de Atacama area associated with Tiwanaku occupation and numerous examples of snuffing implements.

Snuffing implements have not been found in the Wari area, perhaps due to poor preservation of wood. However, the ethnohistoric literature offers another possible explanation of the plant's use. Yacovleff and Herrera (1935:43) provided an important reference to Polo de Ondegardo's sixteenth-century description of this plant, referred to by the Inka as *vilca*. The *vilca* was made into a juice and added to the quintessential Andean beer, *chicha*. As a drink, the effects of *A. colubrina*'s tryptamine might not be as effective due to the stomach's deactivating enzyme, monoamine oxide. However, a similar situation occurs with an Amazonian drink known as *ayahuasca*. *Ayahuasca* consists of several plants that provide the tryptamine alkaloids (Rätsch 1992: 49–51). To allow the tryptamines to take effect

another plant, often *Banisteriopsis caapi*, is added that contains an alkaloid known as harmine. Harmine will inhibit the stomach's MAOs and allow the activation of the tryptamine. Thus, the combination of *A. colubrina* with another plant having harmine would allow activation of the tryptamine. I can only assume that the Wari may have discovered the use of a harmine additive to improve the potency of the *vilca*. Or the *vilca* was simply potent enough for some of the tryptamine to be activated. There are also ethnographic accounts of drinking *vilca* in the communities of Chuschi (Isbell 1978:151–158) and Choque Huarcaya (Quispe 1969:35–38) where it is consumed in an alcoholic drink or *trago* during the *herranza* or cattle-branding rituals. Thus *A. colubrina* could be used in a drink rather than a snuff to attain the desired hallucinogenic condition. As a possible drink additive, I suggest that the plant icon on Conchopata pottery supports a similar use with the most likely candidate for drinking being *chicha*. The numerous large urns and jars found at the site would have been suitable for holding great quantities of *chicha*, especially in a ceremonial context that might entertain a large audience. Wari-style ladles and cups could have been used to dip into and serve the *chicha*. Thus, large ceremonial pottery vessels might be another indicator of the use of this hallucinogen. If *A. colubrina* or *vilca* was used in *chicha* at the Conchopata site, then there are further questions of why it may have been preferred over snuff and who might have controlled its use.

#### *Chicha and Snuff*

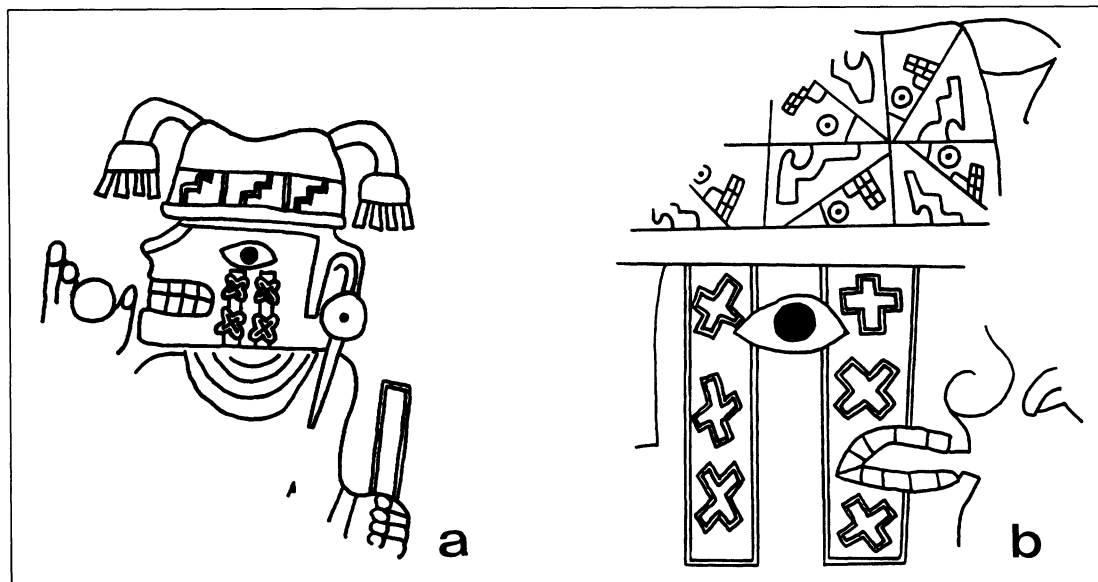
As the references to *vilca* suggest a social behavior of drinking an *A. colubrina* concoction in the Wari area, so do the references to snuff paraphernalia suggest a social behavior of snuffing *A. colubrina* in the San Pedro de Atacama areas. These behavioral activities may indicate distinct cultural differences between the two highland populations even though they shared a similar religious iconography. I will refer to these distinct social patterns as the “drinking complex” and the “snuffing complex,” respectively. In the “drinking complex,” *chicha* is important in ceremonial activities with ethnohistoric documentation as a “drink of the dead” as well as an offering to deities and “*huacas*” (Bastien 1978:178–181). As the *herranza* and Conchopata ceramic offerings may indicate, *chicha* could also be emptied into the ground as an offering. In a “snuffing complex” the

use of *A. colubrina* does not lend itself well as an offering, but may provide a more personal relationship to the supernatural world. Hundreds of snuffing implements have been found with individual mummies. Based on analysis of such artifacts from the San Pedro de Atacama cemeteries, Torres and Repke estimated that the “size and chronology of the sample indicates that approximately 20 to 22% of the adult male population was using psychoactive snuffs c. 200–900 A.D.” (Torres and Repke 1996:43). The “snuffing complex” could allow for large numbers of individuals to participate, but they could do so independently to the extent that each person owned their own snuffing implements. In contrast, I would argue that the numerous large vessels at Conchopata represented a “drinking complex” that supported a large participation at one event. Thus, the Wari “drinking complex” may have allowed for group participation that involved the elite, commoners, and the supernatural in Andean ritual activities with numerous large vessels to embrace an enlarging citizenry. I suggest that the Bennett statue from Tiwanaku may document a synthesis of these two complexes during Tiwanaku IV. Below the plant icon, the statue depicts a deity holding a cup in one hand and snuff paraphernalia in the other (see Figure 9d).

#### *Who Used Anadenanthera colubrina?*

The *A. colubrina* plant icon occurs on ritually smashed ceramic vessels that also depict finely dressed Wari elites who may have been shamans or priests. To determine which, I refer to Gerald Weiss's (1973) description of an Amazonian culture, Campa, in which the use of a hallucinogen can change the anthropological reference of shaman into priest depending on how this individual is perceived by his participating clientele. He provides the following useful details to distinguish shamans and priests according to ethnographic research:

We think of a shaman as obtaining his powers primarily from direct contact with spirits, of a priest as one who earns his credentials primarily through special training (Lowie 1954:179). We think of a shaman as an independent practitioner operating on a part-time basis, of a priest as a member of an organization consisting of full-time specialists (Beals and Hoijer 1965: 585–586; Hoebel 1966:482; Jacobs 1964:281). We see a shaman as one who focuses his professional skills on individuals, particularly for pur-



**Figure 10.** Wari priests depicted on Conchopata ceramic urns; a: priest is positioned between an attendant icon and a deity icon (after Isbell and Cook 1987:31). Note: round mirror is depicted in priest's right hand; b: Note: the beak of another bird is depicted to the right of the face image.

poses of curing, a priest as one who leads group activities of a ceremonial nature (Beals and Hoijer 1965:586; Norbeck 1961:103). We see the activity of a shaman as characterized by possession, trance, and frenzy, while we see a priest conducting routine propitiatory acts of adoration, prayer, and offerings (Casanowicz 1925; Lowie 1940:310–311; Norbeck 1961:103–105; Shirokogoroff 1923; Wissler 1938:201–206) [Weiss 1973:40–41].

For example, the Niño Korin or Callaway are known as shamans rather than priests because they travel great distances in the Andes as curers or “medicasters” for individuals (Posnansky 1945:109; Isbell 1983:199–202). During the curing ritual the shaman uses hallucinogens in order to attain a state of communication with his sources of supernatural power. The “snuffing complex” would include such individualistic behavior. Weiss argues that the transition from shaman to priest occurs to the spectators during such a shamanistic performance or *séance*. This point of transition occurs between the spectators’ perception that one who communicates spiritual advice is a shaman and the spectators’ perception that one who guides the worship of the spirits is a priest. In the “drinking complex” the bringing together of a large group of spectators would be advantageous to a priest in order to command their attention and participation in a religious ceremony with a hallucinogenic drink aimed at reinforcing the priest’s

authority over supernatural power. Thus, the distinction between the two complexes may represent a cultural distinction between societies with shamans, such as San Pedro de Atacama and Callaway and societies with priests, perhaps, Wari and Tiwanaku.

On the Conchopata urns from the Tello excavation associated with the plant icon (see Figure 8a) there is an image of a person depicted with a vertical band of x’s on his cheek (Figure 10a), and was positioned next to the image of a deity, not shown here. I suggest that the person was depicted performing a priestly role in a ritual involving the spirit world. This person wore a four-cornered hat that represents Wari elite (Menzel 1977:31). He is also depicted holding a round, white disk in the palm of his hand that I interpret as representing a mirror (see Lavelle 1984:171, 185). Such a device implies the ability to control the rays of sunlight, thereby adding a powerful symbolic action to the ritual being depicted and possibly observed by numerous participants. On another Conchopata urn, this person is depicted with stylized images of raptors positioned in flight above his shoulders (Figures 10b and 11). Such raptors are assumed to represent symbolic power. These raptors were depicted with large, robust bodies, stout legs with large talons, heavy beaks, beady eyes, distinctive yellow ceres, and feather colorations (Figure 11). James Clements, ornithologist and President of the Board of Trustees at the San



**Figure 11. Crested Eagle (*Morphnus guianensis*) depicted at right shoulder of Wari priest. Note: this figure continues to the left of the image in Figure 10b.**

Diego Natural History Museum, was able to identify these images as Crested Eagles (*Morphnus guianensis*). He also commented that the crest was not drawn as in illustrated handbooks (De La Peña and Rumboll 1998:Plate 24) due to the normal behavior of these eagles. The crest only appears when the eagle is startled (James Clements, personal communication 1999). I suggest that the Wari artist painted an unalarmed pose of Crested Eagles due to taming. In other words, they were controllable. With this person's image positioned next to a deity, his elite dress, the clever use of a mirror for ritual effect, the possible control of powerful raptors, and the association with the hallucinogenic plant icon on *chicha* urns, I argue that this person was a Wari priest.

In conclusion, iconographic study is useful for interpreting archaeologically known societies. In this paper, the identification of a hallucinogenic plant icon within the context of a religious iconography was interpreted to represent the communal behavior of drinking *chicha* and the ritual behavior of shamans and priests. The numerous renditions of the plant icon on other Middle Horizon artifacts suggest a pan-Andean cult or religion. When applied to the artifact evidence from the Wari site of Conchopata, the analysis of the plant icon suggested that the ceramic offering ritual was the culmination of a ceremony involving *chicha* drinking by a large group of participants and controlled by an authoritative person. The person's authority might have been demonstrated by controlling the birds of the sky and the rays of the sun—a probable deity. This person might have

used *A. colubrina* in the *chicha* to enhance the participants' religious experiences while guiding them into the spirit world. Finally, group participation in a *chicha* drinking ceremony and association of supernatural symbols with an individual suggests that the Wari developed the role of priest to manage the increasing social complexity of their expanding political system.

*Acknowledgments.* Research at Museum für Völkerkunde, Berlin in 1985 was supported by NEH travel grant, RY-21015-85. Personal research was carried out at: Phoebe Hearst Museum, Berkeley; Museum of Natural History at Balboa Park, San Diego; Laboratorio de Arqueología, Universidad Nacional de San Cristóbal de Huamanga, Ayacucho. I wish to thank Dieter Eisleb, Lawrence Dawson, James Clements, and Margaret Dykens and Martha Cabrera Romero from these institutions, respectively, for supporting my research. I especially acknowledge the years of training I received from Larry Dawson at Berkeley whose best advice was, "draw it." I wish to thank Anne Weigant and Ann Rowe and acknowledge the Textile Museum for supplying the photo of textile (TM 1972.27.1). I am grateful to the following colleagues and friends who have encouraged and supported my work in this paper: Susan Bergh and Mary Glowacki for providing and recommending images of the plant icon, William Conklin, Constantino Manuel Torres, Patricia J. Lyon, Katharina Schreiber, Anita Cook, and Bruce Harley. I am also in awe of the journal's reviewers with whose expertise this paper is hopefully a comprehensible article. With admiration, I thank José Ochatoma Paravicino; without his fight to preserve Conchopata this research would never have happened. And I am indebted to William Isbell for his constant encouragement and invitation to participate in the current and important research work at Conchopata.

#### References Cited

- Anders, M. B.  
1990 Maymi: modelo de interacción Serrano-Costeña en los Andes centrales durante el Horizonte Medio (nota preliminar). *Boletín de Lima* 71:29–31.  
1991 Structure and Function at the Planned Site of Azangaro: Cautionary Notes for the Model of Huari as a Centralized Secular State. In *Huari Political Organization: Prehistoric Monumental Architecture and State Government, May 17-19, 1985* edited by W. H. Isbell and G. F. McEwan, pp. 165–197. *Dumbarton Oaks*, Washington, DC.
- Bastien, J. W.  
1978 *Mountain of the Condor: Metaphor and Ritual in an Andean Ayllu*. American Ethnological Society, 64. West Publishing, St. Paul.
- Beals, R. L., and H. Hoijer  
1965 *An Introduction to Anthropology*. 3rd ed. Macmillan, New York.
- Bennett, W. C.  
1934 *Excavations at Tiahuanaco*. Anthropological Papers of the American Museum of Natural History Vol. 34, Pt. 3. American Museum of Natural History, New York.  
1953 *Excavations at Wari, Ayacucho, Peru*. Yale University Publications in Anthropology, Number 49. New Haven.
- Bergh, S. E.  
1999 Pattern and Paradigm in Middle Horizon tapestry Tunics.

- Unpublished Ph.D. dissertation, Graduate School of Arts and Sciences, Columbia University.
- Berenguer, J.  
1987 Consumo nasal de alucinógenos en Tiwanaku: una aproximación iconográfica. *Boletín del Museo Chileno de Arte Precolombino* 2:33–53.
- Casanowicz, I. M.  
1925 Shamanism of the Natives of Siberia. *Annual Report of the Smithsonian Institution*, pp. 415–434. Washington, DC.
- Conklin, W. J.  
1971 Peruvian Textile Fragment from the beginning of the Middle Horizon. *Textile Museum Journal* 3(1):15–24.  
1983 Pucara and Tiahuanaco Tapestry: Time and Style in a Sierra Weaving Tradition. *Ñawpa Pacha* 21:1–44, Plate I.  
1991 Tiahuanaco and Huari: Architectural Comparisons and Interpretations. In *Huari Political Organization: Prehistoric Monumental Architecture and State Government, May 17–19, 1985*, edited by W. H. Isbell and G. F. McEwan, pp. 281–291. *Dumbarton Oaks*, Washington, DC.
- Cook, A. G.  
1979 conography of Empire: Symbolic Communication in VII Century Peru. Unpublished M.A. thesis, Department of Anthropology, State University of New York, Binghamton.
- De La Peña, M. R. de, and M. Rumboll  
1998 *Birds of Southern South America and Antartica*. Collins Illustrated Checklist. HarperCollins, London.
- EcoTimber  
2000 Angico/Curupay (H). <http://www.ecotimber.com/Pages/angico.html> (Visited 4/21/2000).
- Eisleb, D., and R. Strelow  
1980 *Altperuanische Kulteren: Tiahuanaco III*. Museum für Völkerkunde, Berlin.
- Hoebel, E. A.  
1966 *Anthropology: The Study of Man*. McGraw-Hill, New York.
- Isbell, B. J.  
1978 *To Defend Ourselves: Ecology and Ritual in an Andean Village*. Institute of Latin American Studies, Austin.
- Isbell, W. H.  
1983 Shared Ideology and Parallel Political Development: Huari and Tiwanaku. In *Investigations of the Andean Past*, edited by D. H. Sandweiss, pp. 186–208. Cornell.  
Isbell, W. H., C. Brewster-Wray, and L. E. Spickard  
1991 Architecture and Spatial Organization at Huari. In *Huari Political Organization: Prehistoric Monumental Architecture and State Government*, edited by W. H. Isbell and G. F. McEwan, pp. 19–53. *Dumbarton Oaks*, Washington, DC.
- Isbell, W. H., and A. G. Cook  
1987 Ideological Origins of an Andean Conquest State. *Archaeology* 40(4):26–33.
- Isbell, W. H., and G. F. McEwan (editors)  
1991 *Huari Political Organization: Prehistoric Monumental Architecture and State Government*. A Round Table held at *Dumbarton Oaks*, May 17–19, 1985. *Dumbarton Oaks*, Washington, DC.
- Jacobs, M.  
1964 *Pattern in Cultural Anthropology*. Dorsey, Homewood, Illinois.
- Knobloch, P. J.  
1986 Development of Huari Iconography: The Adoption of Ancient Symbols to Control Middle Horizon Politics. Paper presented at the 26th Annual Meeting of the Institute of Andean Studies, Berkeley.  
1988 Artisans of the Realm: Art of the Wari Empire and Its Contemporaries. In *Ancient Art of the Andean World*, edited by S. Masuda and I. Shimada, pp. 107–123. Iwanami Shoten, Tokyo.
- LaFarge, H. A. (editor)  
1981 *Museums of the Andes*. Newsweek, New York.
- Lavelle, J. A.  
1984 *Arte y tesoros del Perú: culturas precolombinas—Huari*. Banco de Crédito del Perú en la Cultura, Lima.
- Lowie, R. H.  
1940 *An Introduction to Cultural Anthropology*. Rinehart, New York.  
1954 *Indians of the Plains*. McGraw-Hill, New York.
- Lumbreras, L. G.  
1960 Esquema arqueológico de la sierra central del Perú. *Revista del Museo Nacional* (28):64–117.  
1974 *The Peoples and Cultures of Ancient Peru*. Translated by Betty J. Meggars. Smithsonian Institution Press, Washington, DC.
- Menzel, D.  
1964 Style and Time in the Middle Horizon. *Ñawpa Pacha* 2:1–106.  
1968 New Data on the Huari Empire in Middle Horizon Epoch 2A. *Ñawpa Pacha* 6:47–114.  
1977 *The Archaeology of Ancient Peru and the Work of Max Uhle*. R. H. Lowie Museum of Anthropology, University of California, Berkeley.
- McEwan, G. F.  
1991 Investigations at the Pikillacta Site: A Provincial Huari Center in the Valley of Cuzco. In *Huari Political Organization: Prehistoric Monumental Architecture and State Government*, edited by W. H. Isbell and G. F. McEwan, pp. 93–119. *Dumbarton Oaks*, Washington, DC.
- Norbeck, E.  
1961 *Religion in Primitive Society*. Harper and Row, New York.
- Ponce Sanginés, C.  
1964 *Descripción sumaria del templete semisubterráneo de Tiwanaku*. Centro de Investigaciones Arqueológicas en Tiwanaku. Publicación no. 2. Tiwanaku.
- Posnansky, A.  
1945 *Tihuanacu: la cuna del hombre americano. Tihuanacu: The Cradle of American Man*. 1/2. J. J. Augustin Publisher, New York.  
1957 *Tihuanacu: la cuna del hombre americano. Tihuanacu: The Cradle of American Man*. 3/4. Ministerio de Educación, La Paz.
- Quispe M., U.  
1969 *La heranza en Choque Huarcaya y Huancasancos, Ayacucho*. Instituto Indigenista Peruano, Monograph Series No. 20. Ministerio de Trabajo, Lima.
- Rätsch, C.  
1992 *The Dictionary of Sacred and Magical Plants*. ABC-CLIO, Santa Barbara, CA.
- Ravines Sánchez, R. H.  
1968 Un depósito de ofrendas del Horizonte Medio en la sierra central del Perú. *Ñawpa Pacha* 6:19–45.
- Rowe, J. H.  
1974 Kunst in Peru und Bolivien. Propyläen Kunstgeschichte 18. In *Das Alte Amerika* edited by G. R. Willey. Propyläen Verlag, Berlin.
- Rydén, S.  
1947 *Archaeological Researches in the Highlands of Bolivia*. Elanders Boktryckeri Aktiebolag, Göteborg.
- San Roman Luna, W.  
1983 Datos ethnohistoricos de Pomacanchi. *Arqueologia Andina*, 1:66–74.
- Schreiber, K. J.  
1992 *Wari Imperialism in Middle Horizon Peru*. Anthro-

- logical Papers No. 87, Museum of Anthropology, University of Michigan, Ann Arbor.
- Schultes, R. E.  
 1972 An Overview of Hallucinogens in the Western Hemisphere. In *Flesh of the Gods: The Ritual Use of Hallucinogens*, edited by P. T. Furst, pp. 3–54. Praeger Publishers, New York.
- Schultes, R. E., and A. Hofmann  
 1979 *Plants of the Gods: Origins of Hallucinogenic Use*. McGraw-Hill, New York.  
 1980 *The Botany and Chemistry of Hallucinogens*. Revised and enlarged 2nd edition. Charles C. Thomas, Springfield.
- Shirokogoroff, S. M.  
 1923 General Theory of Shamanism among the Tungus. *Journal of the Royal Asiatic Society of Great Britain and Ireland* 54:246–249.
- Spielvogel, R. B.  
 1955 Wari: A Study of Tiahuanaco Style. Unpublished Ph.D. dissertation, Department of History of Art. Yale University.
- Stafford, P.  
 1992 *Psychedelics Encyclopedia*. 3rd expanded edition. Ronin Publishing, Berkeley, CA.
- Tello, J. C.  
 1942 *Origen y desarrollo de las civilizaciones prehistóricas andinas*. Reimpreso de las Actas del XXVII Congreso de Americanistas de 1939, Lima.
- Topic, J. R.  
 1991 Huari and Huamachuco. In *Huari Political Organization: Prehistoric Monumental Architecture and State Government*, edited by W. H. Isbell and G. F. McEwan, pp. 141–164. *Dumbarton Oaks*, Washington, DC.
- Torres, C. M.  
 1995 Archaeological Evidence for the Antiquity of Psychoactive Plant Use in the Central Andes. *Annali dei Musei civici-Rovereto* 11:291–326.
- 1996 Status of Research on Psychoactive Snuff Powders: A Review of the Literature. In *Jahrbuch für Ethnomedizin*, pp. 15–39. Verlag für Wissenschaft und Bildung, Berlin.
- Torres, C. M., and D. B. Repke  
 1996 The Use of *Anadenanthera colubrina* var. *Cebil* by Wichi (Mataco) Shamans of the Chaco Central, Argentina. In *Jahrbuch für Ethnomedizin*, pp. 41–58. Verlag für Wissenschaft und Bildung, Berlin.
- Torres, C. M., D. B. Repke, K. Chan, D. McKenna, A. Llagostera, and R. E. Schultes  
 1991 Snuff Powders from Pre-Hispanic San Pedro de Atacama: Chemical and Contextual analysis. *Current Anthropology*, 32:640–649.
- Weiss, G.  
 1973 Shamanism and Priesthood in the Light of the Campa *Ayahuasca* Ceremony. In *Hallucinogens and Shamanism*, edited by M. J. Harner, pp. 40–47. Oxford University Press, London.
- Wissler, C.  
 1938 *The American Indian: An Introduction to the Anthropology of the New World*. 3rd ed. Oxford University Press, New York.
- Yacovlevf, E., and F. L. Herrera  
 1934 El mundo vegetal de los antiguos peruanos. *Revista del Museo Nacional* 3:243–322.  
 1935 El mundo vegetal de los antiguos peruanos (conclusión). *Revista del Museo Nacional* 4:31–102.

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Received May 1, 2000; accepted July 24, 2000; revised September 5, 2000.