The use of psychoactive plants by ancient indigenous populations of the North Andes

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INTRODUCTION

The importance of psychoactive plants for the ancient indigenous peoples of South America has been studied from multiple perspectives. These show that the use of such plants permeated every aspect of culture, contributed to social interaction, and were core to shamanic and religious practices. This relationship between human beings and inebriating substances was expressed in complex iconographic systems in a variety of media including wood carvings, monumental stone sculpture, goldwork, and painted textiles.

Most research on this subject has concentrated on the use of San Pedro cactus (Trichocereus sp.) on the Peruvian north coast and adjacent mountains of the North Central Andes on archeological sites, such as Chavín de Huántar (Burger, 2011; Cordy-Collins, 1977, 1980; Sharon, 2000; Torres, 2008). The South Central Andes includes a vast number of archeological sites providing clear evidence for the use of psychoactive plants, most notably Anadenanthera colubrina var. Cebil (Hermosilla, 2001; Horta, 2012; Pérez Gollán & Gordillo, 1993; Torres & Repke, 2006). Anadenanthera contains bufotenine (5-OH-DMT) and was widely used as a snuff.

This investigation focuses on the North Andes and includes discussion of monumental stone sculpture in the environs of San Agustín, Colombia, as well as Muisca, Quimbaya, and Darién (Sinú) goldworking traditions. Through formal and iconographic analyses of ceremonial paraphernalia, this paper shows that the primary ideologies of the cultures of this region involved the use of several psychoactive plants.

Keywords: Anadenanthera, coca, tobacco, Brugmansia, Ecuador, Colombia

MAJOR PSYCHOACTIVE PLANTS USED IN THE NORTH ANDES

Numerous psychoactive plants were available to the pre-Columbian indigenous people of the Northern Andes (Cordy-Collins, 1980; Furst, 1974; Ott, 1996; Plowman, 1984; Schultes & Hofmann, 1980; Sharon, 2000; Wilbert, 1987). Plants likely to have been used during pre-Hispanic times include several species within the following genera: Trichocereus (huachuma, San Pedro), Anadenanthera (vilca, yopo), Brugmansia (horrachero, floripondio, misa), Nicotiana (tobacco), and Erythroxylum (coca). These plants have been briefly discussed in the following sections.

Cactaceae

Trichocereus pachanoi

The genus Trichocereus comprises approximately 40 species of cacti distributed throughout the Andes. Several Trichocereus species (T. peruvianus and T. bridgesii) are used as ritual inebriants, although most documentation refers to T. pachanoi, known in Peru as huachuma or San Pedro. Mescaline is the principal psychoactive alkaloid present in these cacti, and has been found in 12 Trichocereus species (Ott, 1996, p. 88). Potions based on T. pachanoi are apparently restricted to the central and north coast of Peru and adjacent highland areas. The earliest evidence for its ritual use was found at Las Aldas, on the north–central coast of Peru (ca. 2000–1500 B.C.). It is prominently represented in Cupisnique ceramics (ca. 1500–500 B.C.), and in Chavín stone sculpture (900–300 B.C.; Sharon, 2000, pp. 1–2). This cactus is still used in shamanic rites in Peru and Ecuador.

Erythroxylaceae

Erythroxylum coca

The coca shrub belongs to the genus Erythroxylum. It consists of ca. 200 species found mostly in the American

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tropics; it is also present in Africa, India, tropical Asia, and Oceania. However, only two species are the sources of all cultivated South American coca, each having two varieties: *E. coca* var. *coca*, *E. coca* var. *ipadú*, *E. novogranatense* var. *truxillense*, and *E. novogranatense* var. *novogranatense* (Plowman, 1984). Together with tobacco, coca is the most important ritual plant in South America. It is employed by millions of natives in the Andes and the Amazon Basin. The carefully dried leaves are placed in the mouth accompanied by an alkaline substance (normally calcined shells or of ashes of certain plants). It plays an important role in many ceremonies and is related to the origin myths of several South American native groups. Offerings of coca leaves, tobacco, and fermented beverages are of common occurrence; its use in divination is also frequent. Most importantly, coca is an integral part of social interaction, from simple conversations to more complex exchanges, such as political meetings and festivities. Sustained and prolonged chewing of the leaves (with the addition of lime) significantly modifies consciousness. The earliest evidence of its use come from the sites of Culebras (ca. 2000 B.C.) Ancash Dept., Peru (Engel, 1957, pp. 67–68), and Asia (ca. 1800 B.C.) on the central Peruvian coast (Engel, 1963, p. 77).

**Fungi**

*Psilocybe*

About 40 species are now recognized, including *Psilocybe caerulescens*, *Psilocybe mexicana*, *Psilocybe aztecorum*, *Psilocybe zapotecorum*, *Psilocybe semilanceata*, and *Psilocybe cubensis*. The active principles of the mushrooms (the *teonanácatl* of the Aztecs) are psilocybin and psilocin (Stamets, 1996). Ritual ingestion of *Psilocybe* mushrooms...
still exists among the Mazatecs (Wasson, 1980, p. 3). Ritual mushroom use is depicted in the Mixtec deer hide screenfold (14th century) known as the Vienna Codex (Wasson, 1980, pp. 105–109). Evidence of mushroom use in South America is sparse.

**Leguminosae**

*Anadenanthera*

This genus of South American tropical and subtropical leguminous trees is composed of two species, *A. peregrina* and *A. colubrina*, each with two varieties. The two varieties of *Anadenanthera peregrina* are *A. peregrina* var. *peregrina* and *A. peregrina* var. *falcata*. The varieties of *A. colubrina* are *A. colubrina* var. *colubrina* and *A. colubrina* var. *cebil*, *A. peregrina* var. *peregrina*, and *A. colubrina* var. *cebil* are the two species employed as the source of psychoactive preparations, most notably in the form of snuff powders. A powerful psychoactive snuff is prepared from its seeds. *A. peregrina* snuff is known as yopo (niipto) in northern South America. This type of snuff powder was in use in the Greater Antilles during the arrival of Christopher Columbus, where it was known as cohoba. *A. colubrina* snuff preparations are known as vilca in Peru and in Northern Chile. *Anadenanthera*-based snuff powders are rich in bufotenine (5–OH–DMT) and other tryptamine derivatives (Torres & Repke, 2006). The earliest evidence for its use was found at the site of Inca Cueva (ca. 2100 B.C.), located in the Puna de Jujuy, northwest Argentina (Fernández Distel, 1980).

**Malpighiaceae**

*Banisteriopsis*

This is a tropical American genus numbering about 100 species of vines. Several species of *Banisteriopsis* (e.g., *B. caapi* and *B. inebrians*), as well as other plants, are involved in the preparation of a potion known in the Amazon Basin as ayahuasca, yagé, or *caapi*. Frequent additives to the *Banisteriopsis* preparation include *Psychotria viridis* (chacruna) and *Diplopterys cabrerana*. Dimethyltryptamine (DMT), harmine, and harmaline are the most important alkaloids present in ayahuasca or yagé potions. Ayahuasca is still drunk by native groups of the Amazon Basin such as the Tukano, as well as by healers of the Peruvian Amazon (Luna, 1986). However, evidence for its use in an archeological context is lacking.

**Solanaceae**

*Brugmansia*

These small trees (about 10–20 feet tall) are closely related to *Datura*, but are classified as a distinct genus. All species of *Brugmansia* are South American in origin; none is known to occur in the wild, suggesting great antiquity for its ritual use. Several species of *Brugmansia* have been ritually used in Andean America since antiquity; among these, the most frequently used are *Brugmansia aurea*, *Brugmansia sanguinea*, and *Brugmansia suaveolens*. *Brugmansia* contains tropane alkaloids, most notably scopalamine and atropine. *Brugmansia* is usually prepared as an infusion of leaves and stems. It is frequently added to other brews, such as San Pedro and ayahuasca (for a thorough description of *Brugmansia*, see Hay, Gottschalk, & Holguín, 2012).

**Nicotiana**

Tobacco has played a central role in American shamanism. There are at least 64 species of tobacco, but only a few were of widespread use during pre-Columbian times. Snuffing was a frequent method of use, but tobacco was also chewed and smoked, or applied to the skin as an ointment. *Nicotiana rustica* and *Nicotiana tabacum* were the species widely cultivated. *N. rustica* is harder and is higher in alkaloid content; it is also the older of the two as well as having a wider geographical distribution. *N. tabacum* did not extend beyond the tropics during pre-Columbian times (Wilbert, 1987, pp. 4–8). The use of tobacco in the ancient Andes has been clearly determined and it is mentioned by Garcilaso de la Vega, and in the compilations of Jimenez de la Espada. Wild specimens of *Nicotiana* are reported from the early Peruvian coastal site of Caral (2200–1200 B.C.), and from Chiripa (1500–100 B.C.), in the Bolivian altiplano (Oyuela-Caycedo & Kawa, 2015, p. 32). A leather pouch containing tobacco was found at Niño Korin, Bolivia (ca. 300–500 A.D.; Bondeson, 1972).

**THE NORTHERN ANDES**

In the Northern Andes, use of psychoactive plants is evident in Muisca (ca. 500–1500’s A.D.) and Quimbaya (ca. 1–500 A.D.) metallurgy, and in San Agustin stone sculpture (ca. 400–1100’s A.D.) of the Upper Magdalena River area. In Ecuador, decorated lime containers and ceramic vessels depicting coca chewers (Figure 2) are part of a long tradition extending from late Valdivia (ca. 2100 B.C.) to Chorrera times (after 1000 B.C.; Lathrap, Collier, & Chandra, 1976; Plowman, 1984, p. 146). Snuffing implements have also been recovered, without associated plant material, from Valdivia and Chorreras archeological contexts (Stahl, 1985, p.117; Zeidler, 1988, p. 245). Snuffing practices apparently persisted until late in the preconquest period as evidenced by the Guancavilca (Manteño) archeological site of San Marco in the Colonche Valley (Stothert & Cevallos, 2001). Excavation of a group of undisturbed graves, dated ca. 1470–1550 A.D., produced four wooden snuffing tubes similar to those found in late prehistoric contexts in Northern Chile and Northwest Argentina. Chemical analysis of residue from one of the wooden inhalers produced negative result for alkaloids (Stothert & Cevallos, 2001, p. 56).

Due to the high relative humidity of this area, perishable materials have disappeared from the archeological record. The stone sculpture of San Agustin provides ampe iconographic support for snuffing in the Upper Magdalena River area. The evidence provided by snuffing equipment, which is so prevalent in the drier environment of the South Central Andes, is restricted to Muisca metallurgy. The Quimbaya goldworking tradition includes elaborate bottles and flasks as containers for the lime used in chewing coca leaves.
Evidence for the use of psychoactive mushrooms in South America is scarce. However, anthropomorphic gold pendants attributed to the Darién style exhibit fungiform headdresses suggestive of ritual use of mushrooms. These cultures are discussed in detail in the following sections.

San Agustín

The archeological region of San Agustín is located in southern Colombia, on the eastern slopes of the Colombian Massif (Figure 1). Most of the archeological remains are located at altitudes ranging from 1,500 to 2,000 m, within the present day municipalities of San Agustín, San José de Isnos, and Salado Blanco, in the Department of Huila. The population of San Agustín was not concentrated in a major urban center. Instead, habitation sites were scattered, usually on hilltops, in an area of roughly 190 square miles. As a consequence, there are multiplicity of sites, about which 40 are known. Each usually has several pieces of sculpture and a burial area (Reichel-Dolmatoff, 1972, p. 31).

The basic theme in San Agustín sculpture is the representation of a human being who usually exhibits zoomorphic characteristics. While most of the stone sculpture consists of freestanding figures, there are also carved boulders, relief slabs, and bedrock carvings. Iconographically, the fanged mouth is the most widely distributed trait. The alter ego concept, bird–snake associations, and animal transformation are common thematic units. The transformation concept is basic to the understanding of San Agustín sculpture, as it pervades almost every aspect of the iconography of this culture (Reichel-Dolmatoff, 1972, p. 83). A comparative study of analogous motifs on snuffing paraphernalia from the Amazon Basin and the Andes might aid in the interpretation of some of the major themes in the stone sculpture of San Agustín.

The double or alter ego could serve as a point of departure for such a comparison (Figure 3). Several depictions of the alter ego motif have been found along the Trombetas River, a tributary of the Amazon in its middle course. Nordenskiöld (1930, Plates XL, XLI) illustrates two figures from Lake Sucurujú, on the left bank of the Trombetas River and now in the collection of the Gothenburg Ethnographical Museum. One of the figures (Figure 3a) shows a striking resemblance to the doubles from Alto de Lavapatas (Figure 3b) and Alto de las Piedras (Figure 3c), since these two figures depict a crouching human with a zoomorphic being on its back. The Amazon basin figure is only 17.5 cm in height, finely executed in a reddish stone, with a carefully hollowed-out cavity in the back of the feline. Nordenskiöld (1930, p. 57) suggested that it “probably served as a sacred cup.” Wassén (1965, p. 34) has argued that the cavity was used for holding some sort of psychoactive snuff. He supported his argument by citing Nordenskiöld’s suggestion of its use as a sacred cup and by noting the use of similar motifs decorating tubes and snuffing trays employed by the Kaxiyana, native people that inhabit the Trombetas River area (Frikel, 1970, pp. 8, 60). The most convincing evidence presented by Wassén (1965, p. 35) is his tracing of the alter ego motif in snuffing paraphernalia throughout the Amazon basin.

The concept of the double, as it is commonly understood in the Amazon area, is related to the idea that, during ecstatic trances, the shaman undergoes a process of transformation in which animal characteristics are experienced. When the need arises to represent this “other” being, in ceremonial or snuffing paraphernalia, it usually acquires feline and/or avian characteristics. The figures from the Trombetas and those from San Agustín seem to be concerned with the representation of the concept of an alter ego during shamanistic psychoactive experiences. This is further reinforced by the presence of this theme in snuffing tubes and trays from Northwest Argentina (Ambrosetti, 1902, Fig. 13; Salas, 1945, Fig. 89) and Northern Chile (Torres & Repke, 2006, Pl. 43).

The argument for a snuffing complex in San Agustín is also supported by evidence in sculptures that are not alter ego representations. Several statues hold a shell in one hand and a stick in the other, as is clearly seen in the main figure from the east mound of Mesita A (Reichel-Dolmatoff, 1972, Pl. 14) and on a similar sculpture from Alto de los Idolos (Figure 4a). Snail shells are used as snuff containers (Figure 4b) by many tribes of the Amazon basin (Wassén, 1965, pp. 52, 63, Figs 16, 28, 29). The size of these shells range from 12 to 17 cm, or slightly larger than the palm of the hand. It seems highly likely that a snuff container is represented by the shells in these two sculptures. The object held in the right hand could then be identified as a snuffing tube.
In addition, direct resemblances, such as the doubles or snuffing paraphernalia, several other factors support the argument for the use of psychoactive snuffs in San Agustín. In this culture, there is a frequent juxtaposition of different elements in one figure. As already seen, the doubles combine human, feline, and reptilian qualities. A sculpture from the northwest mound of Mesita B depicting a bird holding a snake with its beak and claws is a good example of such a combination of motifs (Reichel-Dolmatoff, 1972, Pl. 32). The same association persists in snuff utensils from other areas of the Andes.

In addition to iconographic similarities of Andean and Amazonian snuffing paraphernalia with the sculpture of San Agustín, the use of yopo (A. peregrina var. peregrina) was described for the Upper Magdalena area during the 16th century. Bernardo de Vargas Machuca (1892, 2, p. 82), writing ca. 1599, described the use of yopo, tobacco, and coca to attain an ecstatic state among Pijao shamans (mohans) of the Upper Magdalena River. He defined yopo as the fruit of a leguminous tree:

\[ Jopa \text{ is a tree that produces certain small pods, similar to vetches, and the seeds inside are likewise, but smaller. These Indians take ground in the mouth in order to speak with the Devil. (Spanish origin in de Vargas Machuca, 1892, 2, p. 111)} \]
The interest of the sculptor in portraying a human being with zoomorphic traits, and bird–feline–snake juxtapositions, was partially motivated by the experiences provoked by shamanic inebriants. Extensive use of psychoactive plants by the native population of the Northwest Amazon and the use of similar motifs in Amazonian snuff paraphernalia support the theory for a snuffing complex at San Agustín.

**NORTH ANDEAN METALLURGY**

Complex goldworking traditions developed in the North Andes provide unique examples of snuffing and coca chewing paraphernalia, as well as suggestive evidence for the use of psychoactive mushrooms. Colombian pre-Hispanic goldwork is comprised of diverse regional styles. It is classified into two broad and distinct categories referred to as regions and horizons (Plazas & Falchetti, 1979, pp. 7–9). Regions are defined by the presence of objects with coherent stylistic and technological characteristics. Muiscan and Quimbaya represent two major regions. Coexisting with the local styles are foreign objects that appear in several goldworking regions, and are considered to be an international “Goldworking Horizon.” The mushroom-headed Darién pendants represent such a Horizon.

**THE MUISCA**

At the time of European contact, the Muiscas, Chibcha-speakers of central Colombia (Figure 1), were utilizing a variety of psychoactive plants, including tobacco, Brugmansia, coca, and Anadenanthera (Reichel-Dolmatoff, 1975, pp. 10–12). This area was densely populated when the Spaniards first arrived in 1537. The Muiscas never gathered in large urban centers, but instead lived scattered in rural villages. Muiscan village federations achieved a highly complex political system and social structure (Reichel-Dolmatoff, 1965, p. 162). The frequency of sumptuous goods associated with iconography related to shamanism as well as snuffing paraphernalia (see below) suggests that psychoactive plants played an important role in the development of Muiscan culture.

Muiscan goldwork is characterized by planiform, trapezoidal figurines known as tunjos. There are also large pectorals, facial ornaments, and innumerable small votive objects in human or animal form (Pérez de Barradas, 1958, 1, Pl. VII; vol. 2, Pls. 129, 130). The most widely used technique of metal working is casting by the lost wax method.

Approximately 20 Muiscan gold snuff trays have been reported in the literature (Bray, 1978, Pl. 154A, 154B; Kunike, 1916, Pl. 24, Figs 124, 126–128; Pérez de Barradas, 1958, 2, Pls. 141, 156, 285). Most consist of a rectangular cavity area surrounded by a border with false filigree decoration (Figure 5). From one of the narrow sides of the receptacle usually extends a slightly narrower panel with high-relief representations. The iconography is composed of avian, feline, and ophidian motifs; human beings are sometimes represented. These objects are all cast by the lost wax method and range in size from 6 to 16 cm. Trays with known provenances include one found near the town of Gachancipá, another at Guatavita, and two near Cogua, all in the present-day Department of Cundinamarca. These three sites are located within 25 km of each other within the Muiscan core territory.

The first description (1883) of a snuff tray in South American archeological literature is that of a Muiscan artifact (Zerda, 1972). This tray formed part of a cache of 12 golden objects deposited inside an anthropomorphic ceramic vessel. The urn contained several tunjos and a small golden frog, as well as the tray under discussion. The find was made in 1882, at the site of Chirajara, hacienda Susumuco, near the town of Quetame, Cundinamarca (Zerda, 1972). Quetame is located on the southern frontier of Muiscan territory. This is an area with easy access to the lowlands of the Guaviare, Vichada, and Meta Rivers, where extensive use of snuffs has persisted up to the present.

The act of snuffing is represented in several tunjo figurines (Fig. 6), and ceramic effigy vessels (Bray, 1978, Fig. 155). Kunike (1916, Figs 270, 271) reproduced two golden-seated figures, each holding in the left hand a tray ornamented with a bird. The tray held by the tunjo figurine is similar to the one from Chirajara and another illustrated by Kunike (1916, Fig. 128). Still a third tunjo with a tray and a tube is at present in the Museum of the American Indian, Heye Foundation, New York. Two additional tunjo representations holding snuff trays were illustrated by Pérez de Barradas (1958, 2, Pls. 250, 283). The snuffing representations depicted on these objects reinforce the hypotheses that these trays were used for snuffing.

The writings of 16th century Spanish chroniclers suggest *A. peregrina* (yop) as one probable botanical source of Muiscan snuff powders. Probably, the earliest mention of the use of a snuff powder among the Muiscas is made by Fray Pedro Simón (1882–1892, 5, 60) in the early 1600s:

*Not so long ago, finding myself in the Sogamoso valley, in one of our curacies called Tota, immediately after saying Mass, I met an old man by name of Paraico next to the church door . . . and knowing he was a sorcerer I had him show me what he was carrying under the rags he was wearing, and found on him a knapsack with the tools of his trade, which were a small gourd which contained the powder of certain leaves they call yopa, together with some of the same leaves not yet pulverized, and a piece of a mirror of ours imbedded in a little stick, and a small broom . . . and a deer bone cut lengthwise in a slant and very well adorned, made like a spoon with which . . . they take these powders and put them in their noses and because of their pungency, make the mucus flow down to the mouth, and they observe this in the mirror, and if it runs straight it is a good sign, but if crooked, the contrary, for everything they endeavor to divine.*

*de Oviedo y Valdés (1959, 3, p. 122), writing ca. 1544, had previously mentioned the use of yop (yop, jopa, and niipo) among the Muiscas and its relation to divinatory practices.*
These Indians have another idolatry or sorcery, and they will not take to the road, or accept war, nor do any other thing of importance, without knowing, or at least trying to inquire, what will be the outcome of their enterprise. In order to do so they have two herbs which they ingest, called yop and osca which when taken separately, beginning from a certain time and at intervals, they say that the Sun tells them what they must do in those things about which they have inquired.

The statement “two herbs which they ingest, called yop and osca which when taken separately, beginning from a certain time and at intervals” suggests alternating the dose. First one, then separately and at an interval, the other. Ethnographic evidence and pharmacologic research on the monoamine oxidase inhibiting effects of the harmala alkaloids present in Banisteriopsis species clearly suggest that sustained intake of Banisteriopsis stems could enhance the effects of the tryptamine containing snuffs (yopo).

Other 16th century chroniclers of neighboring areas describe yopo in more detail. Fray Pedro de Aguado mentioned the use of yopo snuff among Indian groups of the lowlands east of the Muisca heartland. In the following quotation, he refers to the source of yopo as the seed of a tree. Aguado observed the use of this powder among the Guayupe of the Guaviare River in the year 1560:

They are accustomed to take yopa and tobacco, and the former is the seed or pip of a tree, and the latter is a certain leaf they keep, broad, long and fuzzy, and these they smoke, sometimes by mouth or sometimes through the nose, until it inebriates them and deprives them of their senses . . . This custom of taking yopa and tobacco is widespread in the New Kingdom and, so I understand, in most of the Indies, and more so than any other occupation . . . with the smoke the Indians take of these things they become inebriated and deprived of their natural faculties. (de Aguado, 1956, 1, p. 599)

According to Wilbert (1987, p. 85), the Guayupe smoked tobacco and Anadenanthera cigars through both nose and mouth. The observations by Aguado and Wilbert are of importance, since the preceding evidence suggests A. peregrina as a source of Muisca snuff powders. The Guayupe were situated on the southeast boundary of Muisca territory, and sites such as Quetame would have had easy access to the region; the presence of Anadenanthera in the Muisca heartland was at best sparse. All of the Muisca
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interface with the Orinoco lowlands was inhabited by native groups such as the Achagua and the Tunebo well known for their intensive use of psychoactive inhalants (Márquez, 1979, pp. 68, 69; Rivero, 1956, pp. 58, 108). However, Oviedo was an experienced observer, who had described the use of cohoba snuff among the Taíno and identified its source as the beans of a tree (de Oviedo y Valdés, 1959,1 , p. 292), and yet noted Muisca snuff as composed of herbs. The possibility then remains that the Muisca could have also had a locally available snuff source and not be exclusively dependent on the importation of Anadenanthera seeds from adjacent areas.

THE QUIMBAYA

The term Quimbaya denotes a distinctive metallurgical tradition from the Middle Cauca River Valley, in Southwest Colombia. The style is defined by a group of 122 objects known as Tesoro de los Quimbayas (Treasure of the Quimbayas), currently in the collection of the Museo de America, Madrid (Plazas, 1978, p. 25). The cache formed part of the funerary furnishings of two elaborate graves from La Soledad, Quindío Department. Most of the objects were cast in gold or tumbaga (a gold and copper alloy) by the lost wax method. Coca-chewing paraphernalia is notable among these and includes seventeen lime containers (poporos), and eight elaborate lime dippers or spatulæ (Plazas, 1978, p. 22, Fig. 1). These objects were part of Colombia’s contribution to the Ibero-American Exposition of 1892. On the conclusion of the exposition, the Treasure of the Quimbayas remained in Spain as a gift from the Colombian government to Spain’s Regent, María Cristina de Habsburgo, for her arbitration of a border conflict between Colombia and Venezuela (Plazas, 1978, p. 23). Dating of Quimbaya objects is controversial, since treasure hunters have obtained most of the known gold pieces. The Middle Cauca Valley has been extensively plundered due to the frequency of gold and tumbaga artifacts. Consequently, most Quimbaya objects lack precise provenience and contextual associations. Bruhns (1969–1970, p. 71) has tentatively proposed a date of ca. 1–500 A.D., based on stylistic comparisons with Brownware Incised pottery, a style for which archeological data is available. She supports her argument with a detailed comparison between anthropomorphic representations on Brownware Incised ceramics and Quimbaya gold style.

Ancient use of coca leaves in Colombia is documented by the frequent presence of related artifacts. Archeological leaves of Colombian coca (E. novogranatense var. novogranatense) have never been reported (Plowman, 1984, p. 150). Quimbaya lime containers, or poporos, comprise the most elaborate objects associated with coca leave chewing (Figure 7). Powdered lime, an alkaline material manufactured from the ashes of a vegetable source (e.g., quinoa stems) or calcined shells, is an integral part of the coca leaves mastication process. The alkaline powder, if applied carelessly to the coca-leaves wad, might cause a burn on the buccal membranes. The lime and the leaves are mixed into a fairly homogenous wad. The proper use of lime powder is crucial to extracting the alkaloids from the leaves (Antonil, 1978, p. 124). Originally, the term poporo referred to gourds used as lime containers by the Kogi of the Sierra Nevada de Santa Marta (Reichel-Dolmatoff, 1985, II, p. 276). The term is applied to similarly shaped gold or tumbaga bottles to denote their affiliation with coca leave chewing. In addition to those poporos in the Quimbaya Treasure, the Museo del Oro in Bogotá owns significant Quimbaya artifacts of this type (see Pérez de Barradas, 1966).

Quimbaya lime containers can be classified into three types with two varieties each:

1. Phytomorphic bottles (Figure 7a) – this type is composed of vessels with globular body and neck with concave profile, either mounted on a flaring support or with a flat bottom. The surface of one variety is smooth; the other is distinguished by its striated and convoluted shape (Pérez de Barradas, 1966, 2, Figs 1, 12, 20, 26). The shape of some of these objects is clearly derived from gourds, which are often dried and used as bottles and dippers. The smooth surfaced Quimbaya bottles closely resemble present-day Kogi poporos (see, e.g., Bray, 1978, Fig. 34).

Figure 6. Tunjo figurine holding snuff tray, gold and copper alloy, Muisca, Colombia. Museo del Oro, coll. # 1867, Banco de la República, Bogotá, Colombia (after Pérez de Barrada, 1958, 2, Pl. 250)
2. Flasks (Figure 7b, c) – flat bottles with concave or convex sides and globular neck comprise this category. Two variations are discernible: the first is undecorated, and the second is ornamented by anthropomorphic figures in high relief. Both types share a relatively narrow profile and a sunken area at the center of the broad surfaces (Pérez de Barradas, 1966, 1, Figs 37, 42 left; Pérez de Barradas, 1966, 2, Figs 42, 43).

3. Anthropomorphic bottles (Figure 7d) – this group consists of seated or standing male or female personages, generally undressed (Pérez de Barradas, 1966, 1, Figs 15, 16, 29). All wear a cap or a diadem, and a multiple strand necklace. Some of the figures have a flask and a lime dipper pendant on the necklace (Bray, 1978, Fig. 358; Pérez de Barradas, 1966, 1, Figs 30 right, 31 right). One seated figure (Bray, 1978, Fig. 360) has a suspension hook on each shoulder, suggesting the possibility of its use as a chest pendant. Held objects include double (Pérez de Barradas, 1966, 1: Fig. 15) and quadruple spirals (Pérez de Barradas, 1966, 1, Figs 16, 31 left; Bray, 1978, Fig. 377), phytomorphic poporos (Bray, 1978, Fig. 143a) and, on one occasion, a pair of mushrooms (Kerchache, 1994, p. 143 top left).

DARIÉN ANTHROPOMORPHIC PENDANTS

The Darién goldworking horizon includes a highly varied set of anthropomorphic figures with a wide geographical distribution (Figure 8). Suspension hooks with evident
signs of wear indicate their use as pendants. They first appear ca. 100–300 A.D. in western Colombia, Panama, and Northern Costa Rica (Falchetti, 1979, p. 34); two were recovered from the Cenote at Chichén Itzá (Falchetti, 1979, p. 24, Figs 15.4, 15.5; Pérez de Barradas, 1966, Fig. 55). In Colombia, these objects are most frequent in the Sinú area (Figure 1), particularly in San Jacinto metalwork. One of the mushroom-headed pectorals from the San Jacinto area is associated with a 17th century date, indicating continued use after the Spanish conquest (Falchetti, 2000, p. 146). Most are manufactured from tumbaga alloy and cast by the lost wax method. In her comprehensive studies of Darién pendants, Falchetti (1979, 2000, 2008) separated them into two groups: “Darién Pendants” and “Related Pendants.” She divided the figure into 12 units corresponding to different features and attributes. The presence of five or more diagnostic traits defined the first group; the second group was composed of figures having less than five. Her sample consisted of 135 “Darién pendants” and 62 “Related pendants” (Falchetti, 1979, pp. 2, 3).

Darién anthropomorphic pendants are highly variable and demonstrate a remarkable adaptation to local styles. A headdress composed of two hemispherical elements, a winged zoomorphic snout, and a flat and schematized body (Falchetti, 2008, p. 39) are diagnostic features. This icon was of widespread distribution and shared by people of diverse ideologies throughout Colombia and Central America. Falchetti (2008, p. 64) suggests “that the diagnostic features of Darién pendants might represent a common means of communication . . . that went beyond the particular expressions of the local worldviews.” These basic elements are constantly modified, as it is clearly seen in the angle of the hemispherical headdress, which varies in its relation to the figure’s shoulder. In the more volumetric figures, it parallels the shoulders (Figure 8a, b), while in the flatter and schematized pendants it ranges from a 45° to nearly vertical (Figure 8c, d). A stylistic seriation (Bolian, 1973, p. 225, Table 4) proposed four phases of chronological development based on a broad set of diagnostic traits. The earliest pendants are those with hemispherical headdress parallel to the shoulder (Phases I and II). Phase III is
defined by the headdress at about a 45°, and Phase IV by a nearly vertical headdress. It presumes a formal evolution from naturalism to schematized abstraction. A stylistic seriation similar to this should be used with caution, since archeological data are lacking for the majority of these objects.

The hemispherical components of the headdress have been identified as psychoactive mushrooms by several authors. The first to propose this identification was José Pérez de Barradas (1954, p. 300) in a discussion of Darién pendants found within Calima territory in southwestern Colombia. In a later work, Pérez de Barradas (1966, p. 129) favorably reconsiders this proposition and further supports his argument with recently published information by Heim (1963) and Heim and Wasson (1958; see also Wasson, 1980) regarding psychoactive mushroom use in Mesoamerica. Emmerich (1965, pp. 76, 77) independently suggested that these represented “a pair of mushrooms, probably of hallucinogenic properties.” Subsequently, other authors have supported this interpretation (Furst, 1974, p. 63; Schultes & Bright, 1979; Schultes & Hofmann, 1980, pp. 66–68). No other interpretation of the hemispherical headdress components has been advanced.

In addition to its domed shape, the identification of the hemispherical elements as mushrooms is suggested by the stipes supporting the domes. The central dome supports are always present, even when they are not technically necessary, as is the case in the flatter representations (Pérez de Barradas, 1966, 2, Pl. 73; Schultes & Bright, 1979, Pls. 34, 35). A sharp umbo is seen on some of the caps (Falchetti, 1979, Fig. 6; Pérez de Barradas, 1966, 2, Pls. 72, 76), this is a characteristic of some Psilocybe species. Several have a design along the border that according to Schultes resembles the scalloped edge of the cap of Panaceolus sphinctrinus (Schultes & Bright, 1979, pp. 116, 117). In Mesoamerica, mushrooms are always counted by pairs (Wasson, 1980, p. 12), reminiscent of the paired placement on the Darién pendants.

The zoomorphic snout, wings, and other zoomorphic features evident on these figures demonstrate affinities with shamanism and ecstatic states. Avian elements are seen on numerous pendants (Figure 8b); on a few occasions, the mushroom-headed personage holds four birds at chest level (Pérez de Barradas, 1966, 2, Pl. 46; Schultes & Bright, 1979, Pls. 32, 33). Bird imagery is directly related to ecstatic flight (Wassén, 1965, pp. 24–29), and its presence on these artifacts reaffirms the identification of the hemispherical headdress elements as psychoactive mushrooms.

A frog or toad is frequently represented at the convergence of the two staffs and over the figure’s snout (Figure 8c). It is depicted facing toward the mushrooms with its legs splayed; most share a braided dorsal band (Reichel-Dolmatoff, 1988, Pls. 227–229). On the relatively more abstracted and stylized pendants that presumably characterize the later developmental stages, these amphibians are depicted by a body composed of quadruple spirals (Figure 8d; Pérez de Barradas, 1966, 2, Pls. 71, 72). This motif, as well as the lateral elements composed of multiple spirals, links the Darién pendants with Quimbaya poporos (Bray, 1978, Fig. 375; Pérez de Barradas, 1966, 1, Figs 16, 30 left). Toad symbolism is widespread throughout northern South America; there are numerous stories in which a frog or toad woman teaches a culture hero the necessary skills for survival. She is also mother of the jaguars and can alternate, or combine, feline and amphibian traits (Furst, 1974, p. 92). The association between toad and mushroom is also frequent in Maya mushroom stones from Guatemala (Wasson, 1980, pp. 184–185, Figs 10–13). The inebriating qualities of certain toad toxin preparations should also be considered. The Amahuaca and the Matsés from Amazonian Peru are said to rub toad skin secretions into self-inflicted wounds. Friar Gage, who traveled in Guatemala during the 1600s, described how the Pokoman Maya added toads to a fermented potion. Two psychoactive tryptamines, 5-OH-DMT and 5-MEO-DMT, are components of toad venoms of several Bufo species (Ott, 1996, pp. 177–178). It should be noted that bufotenine is a major ingredient of Anadenanthera snuffs, and that 5-MEO-DMT is an important component of Virola snuffs. The evidence suggests that the Quimbaya might have used the toad for its psychoactive properties, however, more evidence is needed to corroborate such use.

Psilocybe mushrooms are widely distributed throughout Colombia, but their ritual and psychoactive use has never been reported. Yurimaguas Indians of Amazonian Peru, as reported in a late 17th century document, ingested a potent potion that included a “tree fungus,” probably Psilocybe yungensis (Schultes & Hofmann, 1980, pp. 66–68). This species was used as a shamanic inebriant in Mexico by the Mazatec and Mixe. P. yungensis has been reported from Colombia, Ecuador, and Bolivia (Ott, 1996, p. 316). It should be noted that a sharp umbo is often present on the campanulate caps of these mushrooms (Stamets, 1996, p. 168). This is a feature seen in the hemispherical caps on Darién pendants. In addition to P. yungensi, P. hoogshagenii has been documented in Colombia. This species is frequent in Puebla, Oaxaca, and Chiapas, and has also been registered in Argentina and Brazil (Stamets, 1996, p. 118–119). Panaceolus sphinctrinus, one of the psychoactive mushrooms of Mexico, has been collected in Colombia (Schultes & Bright, 1979, p. 121).

The scarcity or even lack of archeological evidence demands alternative avenues of investigation. An inquiry into the possibility that the Darién pendants are evidence of psychoactive mushroom use in the Colombian Andes must include discussion of chronology and geographical distribution. The highest concentration occurs in Colombia, where they are found in the Calima and Tolima areas, in the Middle Cauca Valley, in the Chocó, and most frequently in the Sinú goldworking tradition (87%; Falchetti, 1979, p. 5). However, their distribution is not restricted to Colombia. Darién pendants have been found at Venado Beach (after 400 A.D.) in the Panama Canal area, and at Paritas (after 700 A.D.) in the Azuero Peninsula (Bray, 1992, Fig. 3.4; Cooke & Bray, 1985, p. 43). A Panamanian pendant (Bray, 1992, Fig. 3.5) demonstrates the variability of the mushroom-headed personage. Instead of the spiraled flanking elements characteristic of the Colombian specimens, it exhibits two reptilian figures with curled nose and fanged snout common in the Veraguas-Gran Chiriquí Group (700–1520 A.D.) of the Isthmus of Panama (Bray, 1992, p. 40). The two pendants found in the Cenote at Chichén Itzá are stylistically related to Northern Costa Rican specimens.
and were probably manufactured there (Falchetti, 1979, p. 24, Figs 15.1–15.5).

Metal objects were introduced to the Isthmus of Panama, ca. 100 B.C.–500 A.D.; the evidence suggests the Tairona and the Quimbaya as primary influences (Cooke & Bray, 1985, p. 35). This was a period of increased relations between northern Colombia and lower Central America. It can be proposed that simultaneously with the northward movement of metallurgy, ideological exchanges took place that included ritual and shamantic knowledge. Use of psychoactive mushrooms could have been introduced into Colombia via Central America. The earliest Darién style pendants date from ca. 100 B.C.–500 A.D. (Falchetti, 2008, p. 40), coinciding with the time period and patterns of exchange under discussion. The adaptability of the mushroom-headed icon to diverse regional interpretations suggests a diffusion partly independent of ideological or ethnic affiliations, its spread partially motivated by the psychoactive qualities of the mushroom.

SUMMARY

In the Northern Andes, early evidence for the use of psychoactive plants is evident in the depiction of coca chewers in late Valdivia (ca. 2100 B.C.) ceramics; snuffing implements are also present in Valdivia archeological contexts. The iconography of San Agustín stone sculpture and Muisc and Quimbaya metallurgy provides clear support for the use of various psychoactive preparations in this region. Ritual use of coca, tobacco, and yopo is amply described by early chroniclers; however, the use of mushrooms is only briefly noted and has not been properly documented for South America during the post-Conquest period. The Darién pendants are the most suggestive evidence for such practices. Several factors indicate that the ritual use of psychoactive mushrooms might have been a cultural trait introduced into this area form Mesoamerica.

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