

*Sacred Plants and Fungi
of the Americas*



Osiris González Romero
CENTER FOR THE STUDY OF WORLD RELIGIONS

CENTER FOR THE STUDY OF WORLD RELIGIONS

42 Francis Avenue, Cambridge, MA 02138

cswr.hds.harvard.edu

cswr@hds.harvard.edu

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of the Americas*

Osiris Romero González

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INTRODUCTION

The Sacred Plants and Fungi of the Americas Series is focused on psychedelic plants and fungi among Native American traditions across the North and South American continents. Entries present different plants and fungi, along with their various cultural uses by Native American people. They also document artwork about these plants and fungi. Sacred plants and fungi are psychedelic plants and fungi. While each entry explores the plant or fungi and its cultural contexts, the entries are focused on presenting artwork about these plants and fungi, for art often conveys more meaning and context than any other feature. The series favors Native-language names whenever possible.

The use of plants and fungi with psychedelic properties in the Americas can be traced back centuries, even millennia. Psychedelic plants and fungi, including cacti, exhibit mind- or soul-manifesting properties. The word “psychedelic” is a novel combination of Greek words meaning “mind/soul” and “to show.” These substances enhance human mental faculties such as visionary consciousness and imagination. Psychedelic substances—those substances which “manifest the mind/soul”—are classified as “psychoactive.” They “activate the mind/soul” in pharmacology terms, which means they affect the central nervous system. Both biological and cultural functions must be addressed when considering these sacred plants and fungi. Plants and fungi with psychedelic molecules have specific effects on the human brain. These effects make them culturally significant.

Each entry in the Sacred Plants and Fungi of the Americas Series opens and is organized by the name of a psychedelic sacred plant or fungi, including its different vernacular names, common English names, and botanical-scientific names. Headings also include the names of the art in the entry and list the cultures relevant to the art. Throughout these entries, the series will note chemical and biological details for these sacred psychedelics when appropriate.

The first section, titled “Names,” explores the nuance of these plants’ or fungi’s names in different languages and cultures and also documents their scientific study and biological effects. Then, each entry presents a section titled “Introduction and Artwork” that presents and analyzes an image or images of art associated with the plants or fungi in question: paintings, monuments, sculptures, or ritual paraphernalia. Artwork will range from ancient to contemporary. Art provides nuance for cultural relevance and uses of psychedelic plants and fungi that go beyond straightforward reporting. Each artistic image is accompanied by an explanation of the plant or fungi and its place in the cultural heritage of those Native American people and cultures who revere and cultivate these plants and fungi. These sections are titled “Geography and Contexts,” and they include maps whenever possible.

In addition to presenting art, each section presents “Primary Sources and Evidence” that include physical and material evidence as well as primary sources that include these Native cultures’ own “writing” about these plants and fungi, as well as colonial, “outsider” records observing the use of these plants and fungi.

Entries conclude with two sections that interpret the evidence. One is titled “Interpretation,” and another, titled “Implications,” explains the implications emerging from studying these plants and fungi, as well as the implications for the use of these substances, including their medical-industrial research. Interpretations especially note these plants’ and fungi’s role in establishing and cultivating relationships with human and more-than-human agents. These agents are considered real entities in the cultures in question. Implications are the important takeaways for readers.

Throughout the Sacred Plants and Fungi of the Americas Series, interpretations and implications are supported by scientific evidence. They also employ a humanistic approach. We consider scientific archaeology, history, and material culture to be equal to humanistic ethnography and art. Context is key, and understanding the contexts and cultures that revere these plants and fungi prevents hasty judgments and cultural extraction. These plants and fungi are more than substances and more than drugs. Furthermore, these psychedelic substances are valuable because their effects are not mental or psychological. Many of these substances and experiences are social and communal, and that aspect is understudied.

Psychedelic substances are incorrectly described as hallucinogens, and the psychedelic experiences as hallucinations. Psychedelics strengthen users' visionary consciousness and cause significant and lasting transformations in thought and mood that amount to changes in consciousness and perception, but these experiences are not mere hallucinations. The term hallucination connotes seeing something false, something that is not really there, that is only apparent to the experiencer and nobody else, something that is, thereby, materially false.

The psychedelic experience in Native American cultures is a source of knowledge and is not falsehood or distortion. These are not mere escapes from normal thinking. Psychedelic experiences profoundly change perceptions by revealing what is not evident in ordinary states of consciousness. The agency of the experience and the agency of the more-than-human beings encountered through psychedelic experiences prevent dismissing psychedelic experiences as something false. If something has agency, it cannot be a mere illusion. These experiences inspire changes in ordinary life, and Native American cultures consider the beings encountered in these experiences to be real beings.

The Sacred Plants and Fungi of the Americas Series disseminates images of Native American artistic masterpieces: ceramics, sculptures, rock art, ritual paraphernalia, ancient codices, and also contemporary art. The series and project encourage informed reflection and responsible scholarship about plants and fungi. Whenever possible, archaeological and art historical archives are interpreted according to cutting-edge research in anthropology and material culture.

A rigorous historical account of sacred plants and fungi in the Americas reveals an array of cultural uses that endure today, uses that are often overlooked in historical and scientific records. Understanding the history of these plants and fungi illuminates the roots of Native cultures' knowledge about these sacred substances'

transformative power and their value for the cultural heritage of the world. The lack of recognition of different cultural uses of psychedelics has caused unnecessary misunderstandings. It has also led to significant and enduring problems, including prohibitionism, cultural appropriation, and epistemic injustice. Perhaps most urgently, it has fostered extractivism—an ideology of access and cultural consumption that removes these practices from their Native context.

Regarding the diversity of cultural uses in a broad sense, plants and fungi with psychedelic properties can be used for purposes deemed sacramental but can also be used for purposes deemed therapeutic, philosophical, creative or aesthetic, social and political, hedonistic or for pleasure, and palliative for people with terminal illnesses, which expands the United Nations World Drug Report 2023 that distinguishes only three types of use: medical, spiritual, and non-medical. These experiences intensify rather than reduce ordinary life through the potent chemicals they contain. The vibrant experiences depicted in this series demonstrate the ways these sacred plants and fungi enhance human experience.

Taking inspiration from the Harvard Study of Psychedelics in Society and Culture interdisciplinary effort, program, the Sacred Plants and Fungi of the Americas Series strives for pluralism, cultural diversity, scientific accuracy, reciprocity, and respect. To overcome the hasty generalizations and external denominations that bedevil psychedelic studies, the Sacred Plants and Fungi of the Americas Series uses Native American peoples' self-denominations rather than external terminology, which is not only ethical but best practice.

The Sacred Plants and Fungi of the Americas Series is informed and guided by the Transcendence and Transformation Initiative at Harvard's Center for the Study of World Religions (CSWR) that highlights cultural uses of plants and fungi with psychedelic properties to explore religious and spiritual traditions that "aim to transcend our normal states of being, consciousness, and embodiment, and thus to transform the individual, community, and society." The series and project are an example of the collaboration required for studying psychedelics and engaging the emerging field of Psychedelic Humanities. The Harvard Divinity School and the Center for the Study of World Religions (CSWR) are committed to psychedelic education to a broad audience, informed by Native American perspectives, disseminating trustworthy information and responsible philosophical interpretation.

Huachuma, Achuma, Wachuma, San Pedro Cactus, *Trichocereus pachanoi*

Chavin Culture

NAME

Huachuma, achuma, wachuma, and San Pedro are names for the *Trichocereus pachanoi*, a cactus with psychedelic properties, similar to *peyotl* (peyote). (Image 1) The Indigenous name “huachuma” is directly related to these cactuses’ physical properties as “a big cactus.” Cultural anthropologist Douglas Sharon explains that “The ethnoarchaeological and ethnohistorical information of Huachuma is supplemented by some interesting linguistic insights. Achuma is defined in a 1812 Aymara vocabulary as ‘big cactus’ and ‘a drink that makes one lose judgment’ . . . Apparently in the nineteenth century the verb *chumarse* (‘to get drunk’) was found in Peru and Chile.”[1]



IMAGE 1

Trichocereus macrogonus var. *pachanoi* in Ecuador, Betsy Lambert, Creative Commons. <https://www.inaturalist.org/observations/143839815>

Colonial sources describe the cactus and its use pejoratively, displaying the typically negative “Colonial gaze” by stating that the huachuma cactus is a plant that “makes one lose judgment,” even though the vernacular Spanish name San Pedro is related to St. Peter, the Christian saint who bears the key to open Heaven’s doors. Sources compare the inebriation produced by this plant to the drunkenness produced by alcoholic beverages, not taking into account other intoxicating ingredients in huachuma concoctions, such as datura or brugmansia plants, that are added in folk medicine.

INTRODUCTION AND ARTWORK

Titled *Smiling God*, the stele in **Image 2** depicts an anthropomorphic figure in a bidimensional plane. The figure looks to its right, holding a cactus resembling the shape of a huachuma (*Trichocereus pachanoi*) cactus displayed in **Image 1**. According to archaeologists and art historians, “The Smiling God was a version of the deity represented in the Great Image (*Lanzón*) or major cult object.”[2]



IMAGE 2

Smiling God San Pedro-bearing stele. Chavín de Huantar, Peru. Mesia Montenegro et al 2014.[3]

The figure in the stele acts in a ritual manner. The god, or perhaps a ritual specialist, wears a headdress consisting of intertwined serpents. Snake heads are close to the cactus, nearly touching it. Looking at the cactus, the two snakes' bodies intertwine and then stretch back into the figure's *trenza*, its hair braid that hangs down from its neck and back.

The figure's face has a feline nose and cat-like fangs that resemble a jaguar or puma as they are commonly depicted throughout Indigenous traditions such as the Olmecs and the San Agustín. The size of the figure's eye is unusually big, shaped as a half-moon, suggesting the visionary properties and effects after consuming huachuma. Feline claws are prominent on both of the figure's hands. On the figure's back is a geometrical figure with a glyph that resembles a human-like face.

The figure wears a two-headed serpent belt, and each of its two heads hangs toward the figure's left and right feet. Cultural anthropologist Douglas Sharon highlights the significance of the two-headed serpent: “Depicted on the stone slab was a fanged, taloned supernatural figure with a two-headed serpent belt carrying a four ribbed Sanpedro.”[4] Four-ribbed cactuses were considered special to the Chavín people because they are rare and also because Andean cosmologies related their fourfold structures to the four cardinal directions, the Four Corners of the World.

GEOGRAPHY AND CONTEXT

Huachuma or *Trichocereus pachanoi* (**Image 1**) cactuses grow in South America, mainly in Peru, Ecuador, and Bolivia, but they can be found growing throughout the Andes, as shown on the map in **Image 3**. The

area of distribution of *Trichocereus pachanoi* includes the northern highlands of Peru, where the ancient archeological evidence comes from, “but also the Peruvian north central highlands (Cordillera Blanca) and Bolivia (Cochabamba province, where it was called achuma.”[5]

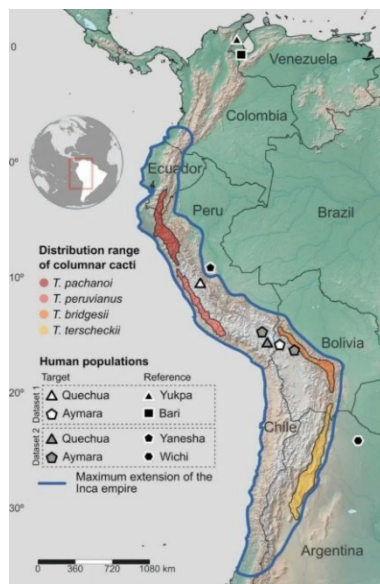


IMAGE 3

Distribution Map. Trichocereus macrogonus var. pachanoi. Padro et al 2022. [6]

Ancient archeological evidence of the Indigenous use of huachuma in the Americas comes from analysis of material remains that include pollen, seeds, and other organic remains in Peru. The archeological record reveals a long human relationship with *Trichocereus pachanoi*, at least 8,000 years. The huachuma is perhaps the most ancient American psychoactive substance with cultural continuity from ancient times into the present, due to its long-recorded use and its continued use in contemporary folk medicine in Peru.

PRIMARY SOURCES AND EVIDENCE

Evidence of ancient huachuma (*Trichocereus pachanoi*) use is common throughout the Andes. As presented in **Image 2**, “The most famous iconographic find, the so-called ‘San Pedro bearing stele,’ or the ‘Smiling God’ in Chavín de Huantar, has been dated to 750 BCE.”[7] Indigenous traditions from Peru—including the Cupinisque, Chavín, Salinar, Moche, and Lambayeque—display robust evidence from ceramics, sculptures, and other iconography.

The oldest huachuma organic evidence was discovered in the Ancash region of Peru in a cave named the Cueva del Guitarrero. In this cave, inhabited continuously since 8600 BCE, a high concentration of the pollen from *Trichocereus pachanoi* has been detected, tracing back to the oldest phase of human occupation in the region. Carbon dating of pollen, seeds, and organic remains found there is associated with ceramic vessels, stone steles, and iconography. Ritual paraphernalia associated with the huachuma establishes the antiquity of human use of huachuma in this area; therefore, the introduction of this plant inside the cave was not incidental but intentional.[8]

Sixteenth- and seventeenth-century primary historical sources document huachuma use in the Andes. Cultural anthropologist Douglas Sharon writes that “In 1582, the *Relaciones Geográficas de Indias* described the

drinking of aguacolla in native confessional rites among the Gonzalves in Ecuador [...] In 1602 in Tacobamba, Bolivia, a native confessor conducted a ‘*misa*’ with ‘*achuma*’ during which he claimed to incarnate the Spirit of Christ.”[9]

INTERPRETATION

Huachuma (*Trichocereus pachanoi*) is an ancient psychedelic plant or entheogen used in the Andean region since at least 8,000 BCE. When synthesized, the psychedelic alkaloid found in the cactus is known as mescaline. Ritual paraphernalia and ceramics found throughout the Andes provide rich evidence for ancient cultural uses of huachuma: sacramental, medical, and artistic/creative. Evidence of huachuma use prevails into current times as a key ingredient in traditional medicine.

The cactus has symbolic and spiritual meanings beyond a medicinal context.[10] “Besides this role as a catalyst for psychological transformation, achuma (or huachuma), also appears to have a cosmological function as indicated by the fact that the majority of the clearly rendered cacti in the archeological record have four ribs.”[11]Pre-Columbian cultures present huachuma cactuses correlated with the directions that structure all creation. Contemporary mestizo healing rituals throughout the Andes consider San Pedro cactuses capable of opening Heaven’s doors, just like St. Peter.

IMPLICATIONS

Within Indigenous civilizations of Peru, the use of huachuma (*Trichocereus pachanoi*) has been recorded in several cultures, showing a close relation with cosmology and revealing long-standing cultural continuity. Ritual paraphernalia for ancient huachuma rites include stones, highly polished wooden sticks, pottery vessels, and carefully-shaped mineral chunks of gold and silver. Uses include medical, ritual, divinatory, and creative or aesthetic, and these uses persist into the present day.

Anthropological research conducted in the Peruvian Department of Lambayeque, located 500 miles north of Lima, documents contemporary use in folk medicine. Revealing the therapeutic properties of the huachuma cacti, “In an all-night ritualistic curing ceremony, the healer and patient drink a potion made from San Pedro. [...] the healer divines the cause of the illness afflicting the patient and prescribes herbs to administer to the sick person. Patients come not only from the village, but from many distant parts of Peru.” [12] In these rituals, where both healer and patient undergo the effects of huachuma, the healer usually spends several minutes talking with the patient about his or her problems and symptoms. Ritual songs in the rites may include Catholic liturgy, even in Latin, revealing the entanglement of different religious and spiritual traditions in huachuma rituals.

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Peyote, *Peyotl* or *Hikuri*, *Lophophora williamsii*

Indigenous Cultures of Northern Mexico and Southwestern US

NAME

Known in English as peyote, the names of this sacred cactus—*peyotl*, *bikuri*, *jikuli*, or *jiculí*—come from languages belonging to the Uto-Aztecan language family, which includes languages spoken throughout Aridoamerica, Mesoamerica and the Western United States. This entry favors the Nahuatl name “*peyotl*.”

Anthropologist and *peyotl* scholar Stacy B. Schaefer explains, “Since peyote first came under scrutiny of western botanists and psychopharmacologists, it has gone through a series of name changes, until science settled in *Lophophora* for the genus and *williamsii* and *diffusa* for the two species of peyote that have been positively identified.”[1]

The Nahuatl language name “*peyotl*” can be translated as “silk cocoon.” The Huichol language name “*bikuri*” can be translated as “mirror” and “moon.” The Wixárika people, also known as Huichol, are an Indigenous people in Western and Northwestern Mexico, primarily in the Sierra Madre Occidental mountain range, but they also have sizable communities in the Southwestern United States. “*Jikuli*” or “*Jiculí*” are names for peyote used by the Raramuri or the Tarahumara in the Mexican state of Chihuahua, by the Cora in Nayarit, and by the Tepehuan in Durango. Historians have registered the sacramental use of *peyotl* by the Lipan Apaches in the plains of Northern Mexico and Texas and by the Teochichimecas, a wide-ranging nomadic people. All these Indigenous peoples maintain sacramental use of *peyotl* cactus.

INTRODUCTION AND ARTWORK

Featured in **Image 1**, the visionary artist José Benítez Sánchez’s yarn painting titled *Kauyumarie’s Nierika* illustrates a Wixárika (Huichol) cosmogony tale in which the sacred forces emerge from the underworld and then come to the Earth. The radiant disk featured is a *nierika*, which is *peyotl* (peyote) and is also a mirror, a cactus, a blue path of the sacred Kauyumarie deer—each *peyotl* button resembles and represents these ideas.



IMAGE 1

Kauyumarie’s Nierika. José Benítez Sánchez. *Yarn Painting*, 1974. Mixed media: plywood, beeswax, and wool yarn. Photograph by Juan Negrín. Wixárika Research Center

The Blue Deer named Kauyumarie, meaning “Our Old Brother Deer,” finds the *nierika*, the luminous circle that is a gateway to the spirit world, a common element in Wixárika (Huichol) art. His *nierika* unifies the spirit of physical beings and the spirit worlds. Beings come to life through the *nierika*. The lines stretching out from the center on physical *peyotl* buttons are thought to resemble the cosmological paths of the sacred Kauyumarie Blue Deer in this sacred narrative.

Below the *nierika*, Tatéi Werika Wimari, whose name means “Our Mother Eagle,” opens her wings and bows her head to listen to Kauyumarie, who sits on a rock below and to the right of her. Kauyumarie’s words descend on a thread and into a vessel, transforming his speech into vital energy depicted as a white flower. Above Kauyumarie, in the form of a serpent with deer horns, “Spirit of the Rain” gives life to the gods who stretch around these images as they spread across the earth.[2]

GEOGRAPHICAL DISTRIBUTION

Peyotl (peyote) grows mainly in Northern Mexico and Southern Texas desert regions in special ecological zones with the right soil for the cactuses to thrive. *Lophophora williamsii*, the botanical name for *peyotl*, is native to the high desert region of San Luis Potosí, which the Wixárika (Huichol) people call Wirikuta, and is also native to parts of the Mexican states of Zacatecas and Coahuila and to the South Texas plains along the Lower Río Grande. *Lophophora diffusa*, a cactus of the same family, is only observed growing in a small desert zone in the Mexican State of Queretaro.[3]

Recent archeological research has discovered seeds and *peyotl* buttons, along with petroglyphs depicting the *peyotl* cactuses, in the Northeastern Mexican state of Nuevo León, an understudied region[4]. Archeologists in the “Prehistory and Historical Archaeology of Northeastern Mexico” project found *peyotl* seeds in Villaldama, an ancient archeological site in Nuevo León that dates from at least 12,000 BP. (Used in carbon dating, BP is a dating designation meaning “before the present,” before the year 1950.

Archaeologists use this term and the more conventional BCE and CE depending upon the evidence they interpret.) There are no data regarding radiocarbon tests on the seeds or buttons, but other artifacts there, such as flint arrows, have been carbon-dated to 6000 BP. As part of a hearth, two molars from the mouth of an extinct American equine date to almost 11,000 years BP.[5]



IMAGE 2

Lophophora williamsii (Lem. ex Salm-Dyck) J.M.Coult. Observed in Mexico by altamiranohg and presented at iNaturalist.

<https://www.inaturalist.org/observations/245787140>

PRIMARY SOURCES AND EVIDENCE

Archaeological evidence locates *peyotl* (peyote) buttons in prehistoric sites throughout what is now Texas and Northern Mexico. Analysis of rock art, ceramic vessels, iconography, and colonial sources reveals a long history of *peyotl* use in the Americas.

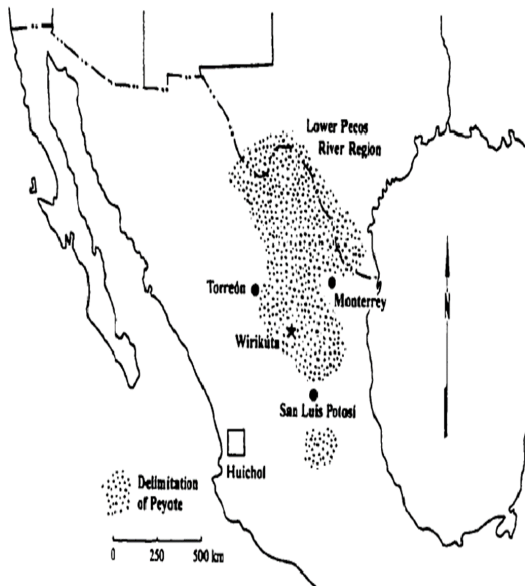


IMAGE 3

Map of Peyote Distribution. Reproduced from Boyd, Carolyn Elizabeth.[6]

Discus-shaped, dried *peyotl* buttons were discovered near ancient rock art in the Shumla caves on the Texas side of the Rio Grande River.[7] These preserved buttons are radiocarbon dated to approximately 4,000 years before the common era (BCE), and they still contain mescaline at a concentration of around two percent. [8] Several cave and rock-shelter sites in Texas contain preserved *peyotl* whose radiocarbon dates range between 5000 and 5700 BCE.[9]

In West Central Coahuila, Mexico, a dried, preserved *peyotl* button that was part of a necklace was found in the Mayran mortuary complex, a multiple-interment burial cave, suggesting the necklace was part of funeral offerings. This *peyotl* button is dated between 810 and 1070 CE. Analysis to identify its alkaloids reveals mescaline, the psychedelic principle in *peyotl*, but also chemical compounds including lophophorine, anhalonine, pelletine, and anhalonidine that all had an entourage effect when consumed. Lithic and perishable items were also found at the site.[10]

Recent archeological excavations of the La Morita II cave in Nuevo Leon, Mexico, revealed an array of rock art manifestations carbon-dated to be from 6000 BP (before the present). Archeologists conclude that the cave had mixed functions for daily life and as a funerary site. “This deduction is based on the location of spears and projectile points to 4500 BP; remains of objects made from perishable materials, such as fragments of cordage and basketry from 300 BP . . . Other elements that contextualize daily life in the cave were coprolites (dried feces) and seeds of cacti, such as peyote and three species of the region.”[11]

The sixteenth-century *Florentine Codex*, the seventeenth-century *Parecer de Juan de Salcedo sobre el Peyote*, and Inquisition trial records describe cultural uses of *peyotl* that include medicine and divination as well as ritual and sacramental uses. Book X, Chapter XXIX, of the *Florentine Codex* provides information regarding the

knowledge developed by the Teochichimeca, nomadic people who lived in northern Mexico: “And they knew the qualities, the essence, of herbs, of roots. The so-called peyote was their discovery. These, when they ate peyote, esteemed it above wine or mushrooms. They assembled together somewhere in the desert; they came together; there they danced, they sang all night, all day. And on the morrow, once more they assembled together. They wept; they wept exceedingly. They said [thus] eyes were washed; thus they cleansed their eyes”.^[12] The *Florentine Codex* Book XI, Chapter VII, further describes *peyotl*'s visionary properties.



IMAGE 4

Illustration of *Lophophora Williamsii* (Lem.) by Coulter, listed as *Echniocactus Williamsii* Lemaire in *Bot. Mag.* 73 (1847) t. 4296.^[13]

INTERPRETATION

Considering the long history and wide array of Indigenous traditions, there is likely no single cult or homogenous ritual or ritual system for sacramental use of *peyotl* (peyote). Ancient rituals have been registered for a number of Northern Mexico Indigenous peoples: Teochichimecas, Wixáricas, Coras, Raramuris, and Lipan Apaches. Colonial sources, however, show a clash of cultural paradigms between Native American cosmologies and the Catholic Church.

According to the unpublished manuscript *Parecer de Juan de Salcedo sobre el Peyote*—written in 1619 by the rector of the Real y Pontificia Universidad and now held by the University of Wisconsin-Madison Library—since the First Apostolic meeting of 1524 in Mexico, the Church considered the sacramental use of *peyotl* to be an obstacle to evangelizing Indigenous peoples because *peyotl* rituals and *peyotl* lore resemble ancient rituals and worldviews predating Christianity in the New World. *Peyotl* and its sacramental use were officially banned by an inquisition edict in 1620, but 100 inquisition trial records document cultural uses of this sacred cactus during the seventeenth and eighteenth centuries.

In the nineteenth century, the *peyotl* cult spread among Native American peoples in the Southwest United States. The spread of *peyotl* knowledge is recognized among Indigenous peoples in Oklahoma, mainly the Comanche and the Kiowa, but also in Arizona among the Diné or Navajo. *Peyotl* knowledge is found in the prairies of Canada, notably in Saskatchewan, far from the Southwestern United States.

IMPLICATIONS

By the end of the nineteenth century, the Native American Church of Jesus Christ (NAC) arose in the context of the United States government's 1890 ban of Ghost Dance rituals in the U.S. After the ban, NAC members considered the sacramental use of *peyotl* (peyote) to be at the core of their ritual practices. The *peyotl* cult grew rapidly among Native American peoples in the U.S. state of Oklahoma. The NAC is considered a counterbalance against colonialism.

First practiced in 1889, responding to massive land seizures and cultural assimilation, Ghost Dance rituals were large-scale ceremonies involving hundreds of participants in a circle dance. These rituals were declared to reconnect with the Ancestors, to acknowledge a Native American way of life, and to symbolically end colonial expansion. Ghost Dance rituals frightened settlers and authorities, and the U.S. government banned them.

The Native American Church emerged to protect the religious freedom of its members. *Peyotl* is considered a medicine and a divine gift that provides counseling and strength to deal with colonial legacies of discrimination, lack of recognition, and the lack of medical services. NAC rituals sacramentally use *peyotl* for its therapeutic properties, treating mental and spiritual health issues.[14] NAC rituals are usually performed during the night inside a *tipi* and around a bushfire where chants and sacred narratives are displayed by a ritual specialist known as a roadman or medicine man.

The Native American Church of Jesus Christ gained official recognition in 1918, but, since its beginning, NAC members were harassed, prosecuted, and incarcerated by the U.S. Government. The United States government has attempted to make the NAC illegal, and many states introduced anti-peyote legislation throughout the first half of the twentieth century. Due to the NAC's organization as a legal and recognized church, the result of protracted legal disputes, the NAC survives and thrives, increasing the number of church affiliates and winning court cases.

The *peyotl* cult in the NAC has been considered a counterbalance against colonialism and emerged from mass resistance by Native Americans. The NAC continues efforts to raise ecological awareness regarding the peyote preservation [15], for *peyotl* is now a plant species under threat due to unsustainable consumption as well as narrow range of *peyotl*-bearing lands being developed, agricultural competition, and border enforcement.

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Morning Glory

Coaxibuitl, “Snake Plant,” and *Ololiubqui*, “Round Thing”;

Semillas de la Virgen, “Seeds of the Virgin”; *Ipomoea corymbosa*

Teotihuacan, Nahua and Mazatec Cultures

NAME

Because of the wide range of Indigenous, Spanish, and botanical names for the plant and seeds of the *Ipomoea corymbosa*, this entry will favor the English name, “morning glory.” The morning glory plant has recently been botanically reclassified as *Ipomoea corymbosa*, but earlier scientific and anthropological research used the prior term, “*Turbina corymbosa*.”

The morning glory has a range of names throughout Mesoamerica. In Spanish, it is called “*semillas de la Virgen*,” meaning seeds of the Virgin (Mary). In Nahuatl, it is called *ololiubqui*, which means “round thing.” In the Chinantec language from Oaxaca, México, it is known as “*A-mu-keia*,” which means “medicine for divination.”[1] In Indigenous languages, here and generally, botanical names require further study by linguists to explore their meanings and associations.[2]

Some cultures, such as among the Nahua, distinguish between the plant/vine and the seeds it produces. The *Ipomoea corymbosa* vine is known in the Nahuatl language by the name “*coaxibuitl*,” which means “snake plant.” It is also often known in the Nahuatl language by the name “*ololiubqui*,” the name of its seeds, meaning “round thing.” The seeds are small brown ovals. The *Ipomoea corymbosa* plant itself, the vine that produces *ololiubqui*, is a climbing vine. When they climb trees, the vines resemble snakes climbing a tree trunk. The vine is also named “*biedra*” or “*bejuco*” by Spanish writers.[3]

INTRODUCTION AND ARTWORK

The morning glory vine may be considered and depicted as a deity, or the images may depict the plant as a healer and a healing ritual. There appears to be a Mesoamerican “hard nucleus” in which cultural features are shared by different civilizations across eras and regions: water deities are related to fertility and the vegetal world across cultures. As shown below, the morning glory is associated with fertility and gynecology. Furthermore, the morning glory plant is connected to *Psilocybe* mushrooms, healing rituals, and healers.

Anthropologist Peter Furst proposes that the front-facing female deity featured in **Image 1** is a metaphysical conception of the morning glory vine. This image is found at the center of the Tlalocan mural, the *Paradise of Tlaloc*, at the pre-Colombian site Tepantitla, in the sacred city of Teotihuacan, northeast of Mexico City.



IMAGE 1

A possible female deity. *Tepantilla Murals*, Teotihuacan, México 200 CE. Museo Nacional de Antropología, Mexico City.

Responding to challenges of his interpretation, Furst explains that “We are generally agreed that the frontal deity is indeed female and that she seems to represent the Earth Mother in a youthful and bountiful aspect. [Esther] Pasztory believes that she comes closest in character to Xochiquetzal (Precious, or Quetzal, Flower), the young Earth Mother and creator goddess of fertility and vegetation [...]. As fountainhead of terrestrial water, which pours from the area of her nose and mouth, she seemed to me to embody primarily the characteristics of Chalchiuhtlicue, Lady of the Jade Skirt, goddess of water that flows over and under the earth, mother of springs, streams, lakes and water holes, and, according to some traditions, wife, or sister, of Tlaloc.”[4]

Furst’s iconographic identification requires support by more archeological evidence, for his interpretation could be a backward projection of Aztec cultural features onto the Teotihuacan civilization (100 CE-700 CE) that predates the Aztecs (1300-1521).

Asunción Alvarado, a Mazatec contemporary artist from the Sierra Mazateca region of Oaxaca, depicts a range of sacred plants and fungi, including the morning glory, in his work. In **Image 2**, the painting *Abuela Medicina (Medicine Grandmother)* portrays the *Ipomoea corymbosa* vine growing from the bottom of the painting, extending its branches to both sides, climbing to the top. The background of the painting is a starry sky. The imagery of the vine is accompanied by imagery of *Psilocybe* mushrooms—those mushrooms containing the psychedelic compounds psilocin and psilocybin—and *Salvia divinorum*, suggesting a sacred status of these plants and fungi.



IMAGE 2

Abuela Medicina (Medicine Grandmother) by Asunción Alvarado, 2023.

At the painting's center, a ritual incense burner with a luminous yellow fire sheds light. The leaves of the morning glory plant are clearly depicted, and their stems appear to undulate like a moving snake. The purple flowers, found in the middle and toward the top, identify the plant as the morning glory. Luminous purple hummingbirds radiate an orange aura as they fly, looking toward the edge of the frame. At both sides of the burner are depicted leaves from the *ská pastora* (*Salvia divinorum*), another sacred and psychedelic plant. Surrounding the fire are the blue shapes of six sacred *Psilocybe* mushrooms.

At the top and center is depicted a realistic female face of a wise woman or ritual specialist (*chotaj chinej*): Mazatec doctors who ritually deploy morning glory or *Psilocybe* mushrooms to treat patients. Asunción Alvarado explains that the “seeds of the Virgin, or *ololiuhqui*, were used in ancient times for divination and healing, just like other mystical and sacred plants of the Mazatec people. Today, very few wise men and women still use them. The seeds are held in high regard, as they must be handled with great care by a wise person who knows the seeds well.”[5] Alternatively, the depiction in **Image 2** can be interpreted to parallel the plant as a deity in the ancient Tepantitla Murals.

GEOGRAPHY AND CONTEXT

The *Ipomoea corymbosa*, or “morning glory,” is widely distributed throughout the Americas, especially in warm areas. (**Image 3**) The morning glory was previously classed as *Turbina corymbosa*, but it is now considered an *Ipomoea*. This distinction is not noted in earlier scholarship; therefore, *Turbina corymbosa* should be understood to be *Ipomoea corymbosa*. “*Turbina corymbosa* has a vast range on the American continental mainland, from Mexico southward throughout Central America into South America as far as Bolivia and southern Brazil. It is also found throughout the West Indies, the Bahamas, and Bermuda.”[7]

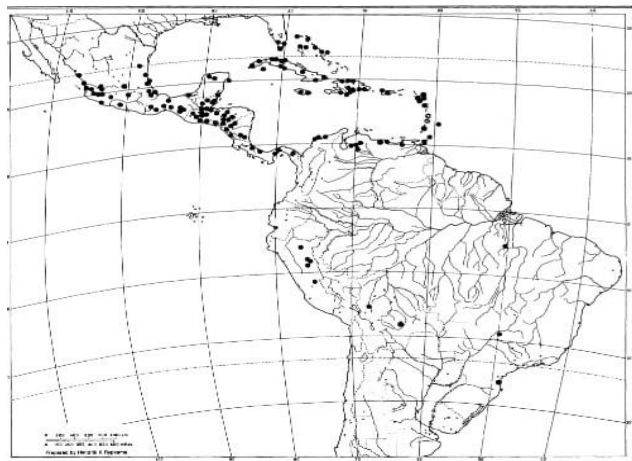


IMAGE 3

Locations where *Ipomoea corymbosa* grows. The morning glory plant grows easily and abundantly in the mountains of Southern Mexico, as well as in the Caribbean and South America. [6]

In Mesoamerica, the morning glory natively grows in Central and Southeast Mexico. In Oaxaca, another species called “*badob negro*” in Spanish, with the botanical name “*Ipomoea violacea*,” has long been used ritually and therapeutically by Native American peoples. Both *Ipomoea corymbosa* and *Ipomoea violacea* have psychedelic principles. “*Violacea*” means “purple,” referring to its flower, and is more potent than the *Ipomoea corymbosa*. “*Corymbosa*” means “a cluster,” referring to its flowers. (**Image 4**)

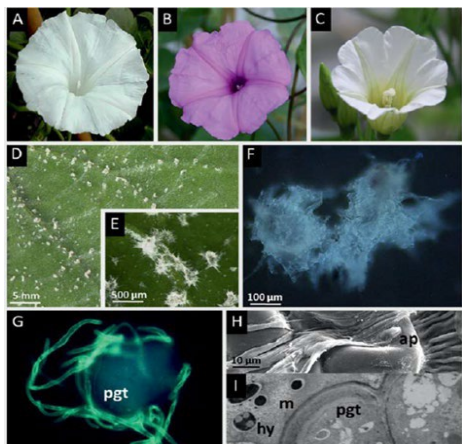


IMAGE 4

Flowers of *Ipomoea* plants juxtaposed with the mycelium of the ergot spreading *Periglandula* fungi.[10]

Simple chemical compounds in the morning glory, such as lysergic amides, belong to the psychedelic chemical family of ergot alkaloids known as ergines. Lysergic amides are structurally close to lysergic acid diethylamide (LSD). Albert Hofmann, the chemist who discovered LSD, isolated the active principle chemicals in morning glory seeds, identifying the psychedelic alkaloids ergine and isoergine as well as the non-psychedelic alkaloids canoclavine, elimoclavine, and lysergol.[8] Cutting-edge research posits that the psychedelic properties in the morning glory developed from these vines’ evolutionary symbiosis with an ergot-spreading fungi species called *Periglandula ipomoea*. That symbiosis transferred the fungi’s psychedelic chemical principles into the seeds of the plant.[9]

PRIMARY SOURCES AND EVIDENCE

Historical evidence for the cultural use of *Ipomoea corymbosa* and *Ipomoea violacea*, morning glory vines with different flowers, can be located in early manuscripts and chronicles composed by Spanish missionaries in Mexico, including the sixteenth-century ethnographic *Florentine Codex* and Francisco Hernández’s seventeenth-century medical text titled *Rerum Medicarum Novae Hispaniae Thesaurus*, “*Treasury of Medical Matters of New Spain*.”

Book XI, Chapter VII of the *Florentine Codex* explains the therapeutic and visionary properties of the morning glory as found in Nahua culture. “It leaves are slender, cord-like, small. Its name is *ololihqui*. It makes one besotted; it deranges one, troubles one, maddens one, makes one possessed. He who eats, who drinks it, sees many things which greatly terrify him. He is really frightened [by the] poisonous serpent, which he sees for that reason [...] He who hates people causes one to swallow it in drink and food to madden him. However it smells sour; it burns the throat a little. For gout it is only spread on the surface.”[11] The clash of different cultural paradigms when the Spanish encountered the Nahuas fosters this dismissive colonial perspective.

Francisco Hernández writes about the morning glory as *Turbina corymbosa*. Hernández was a Spanish physician sent by King Philip II on a seven-year research expedition (1570-77) to survey the therapeutic properties of New World plants, cacti, and fungi. “The *T. corymbosa* plant heals the syphilis, after exposure to cold or distortion and fracture of a bone the plant—when mixed with some resin—alleviates the pain by increasing body strength, drives out flatulence and controls an unnatural surge. Crushed seeds help to cure diseases of the eyes when extracts mixed with milk and chili are applied to head and forehead, stimulate sexual interaction after ingestion, crushed seeds smell strong and are mildly warm. During divination when Indians contact their gods and ask for answers they ingest plant material, go mad, develop visions and view daemons. When suffering

from gout pulverized seeds suspended in oil from *Abies spec.* or in white honey.”[12] The range of Indigenous uses for morning glory spans from clinical treatments, including sexual and optic diseases and gout, to divination and visionary uses.

INTERPRETATION

Ipomoea corymbosa and *Ipomoea violacea*, both vines called “morning glory” in English, and their seeds, have been used by Mesoamerican peoples for centuries, perhaps millennia. Indigenous iconographic evidence and varied historical sources document therapeutic, sacramental, and divinatory uses of morning glory throughout Mesoamerica. While Colonial physicians sought to understand medical properties, the plants and their psychedelic use were condemned, and users were persecuted. Sixteenth- and seventeenth-century Colonial sources document the morning glory plants’ cultural significance and wide distribution throughout Mesoamerica.

Because these plants could alleviate syphilis symptoms and treat gynecological issues, both plants in the Aztec worldview were symbolically related to fertility deities such as Xochipilli and Xochiquetzal. Supernatural forces were thought to inhabit the plant because their psychedelic properties allowed communication with deities, some belonging to Mesoamerican traditions and others that are Catholic and syncretic.

A distinctive feature that makes these plants unique is that their psychedelic properties, namely their ergot alkaloids, originate from atypical evolutionary symbiosis with the fungi *Periglandula ipomoea*. [13] Strictly speaking, this fungus is the source of the ergot alkaloids that contain the psychedelic principle compounds found in morning glory plant seeds. It seems that the symbiosis is only present in these plants and not others found in conjunction with *Periglandula ipomoea*.

IMPLICATIONS

Connections of morning glory to gynecology, fertility, and venereal disease treatments are backed by Indigenous knowledge and contemporary scientific research, suggesting that the morning glory will play a prominent part in future ethnogynecology. Despite the psychological emphasis on sacred plants in current psychedelic research, the therapeutic potential of psychedelic plants is not exclusively related to mental health conditions, as demonstrated by morning glory treating a broad range of illnesses unrelated to the mind or the soul.

The morning glory’s therapeutic potentials continue to be discovered. Regarding therapeutic potentials, recent research shows that:

“The peptide ergot alkaloid exhibits a strong uterotonic activity. It is a vasoconstrictor, which is mainly used against migraine. Ergotamine is the only naturally occurring ergot alkaloid that is still in use as medication in Germany . . . Ergots alkaloids were developed into semisynthetic compounds carrying the ergoline core. . . They are used in obstetrics, against female infertility, Parkinson’s disease, or for the cognitive improvement of the elderly.”[14]

Acknowledging Indigenous knowledge of the morning glory and this sacred plant's uses reveals not only wide-ranging future therapeutic uses but also can remedy ongoing problems surrounding the unethical extraction of plants revered by Native cultures. Indigenous people always considered morning glory plants, whether *Ipomoea corymbosa* and *Ipomoea violacea*, to be means to communicate with deities and not merely therapeutic substances, i.e., drugs. Greater knowledge of the cultures around these plants fosters greater responsibility and fewer hasty generalizations regarding these plants and the cultures that revere them.

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Teonanacatl, “Flesh of the Gods” or “Holy Mushrooms”; *Psilocybe aztecorum*

Nahua (Aztec) Culture

NAME

Mesoamerican cultures (at least 11 of them) have used *Psilocybe*—a genus of mushrooms, some of which contain the psychoactive chemicals psilocybin and psilocin—for ritual, divination, and therapeutic or healing purposes. *Psilocybe* use, growth, and cultivation are widespread throughout Mesoamerica, and there are regional variants for all Indigenous *Psilocybe* names. This entry focuses on Nahua/Aztec rather than surveying Mesoamerican *Psilocybe* use due to the wealth of evidence regarding Nahua/Aztec cultural uses of *Psilocybe*.

In the Nahuatl language spoken by Nahua/Aztec people, one name for the *Psilocybe* mushroom is “*teonanacatl*,” which can be translated as “the flesh of the gods”—formed from compounding the word “*teotl*,” meaning “God/gods” or “sacred,” and “*nanacatl*,” meaning “mushrooms or flesh.”^[1] Another possible translation for the name “*teonanacatl*” is “holy/sacred mushroom.” The term “*teonanacatl*” is a generic Nahuatl-language name covering a range of mushroom species that includes *Psilocybe aztecorum* (**Image 1**), *Psilocybe mexicana*, and *Psilocybe caerulescens*, and more.^[2] Another Nahuatl-language name for *Psilocybe* mushrooms is “*apipiltzin*,” meaning the “water children.”^[3] While “*apipiltzin*” is a general term, these mushrooms are also personhoods, meaning that they have subjectivity and agency beyond being physical mushrooms.



IMAGE 1

Psilocybe aztecorum, observed and photographed by Alan Rockefeller, found on iNaturalist.

<https://www.inaturalist.org/observations/106190576>

INTRODUCTION AND ARTWORK

Across Mesoamerican cultures, *teonanacatl* mushrooms are symbolically linked to deities of death and the Underworld. **Image 2** from the *Codex Magliabechiano*—a sixteenth-century Nahua/Aztec pictographic manuscript—depicts an encounter between a person eating *teonanacatl* mushrooms and the Lord of Death, Mictlantecuhtli. Those who consume *teonanacatl* are entranced and become ritual specialists who are intermediaries between the human realm and sacred entities, communicating with ancestors, gods, and nature spirits.

In the painting, a seated man consumes two *teonanacatl* mushrooms. Behind him, another figure, a god, touches his head. Trance states in Aztec culture are initiated by ingesting *teonanacatl* mushrooms such as *Psilocybe aztecorum* (**Image 1**) and *Psilocybe mexicana*. “The three jade green mushrooms in front of the celebrant undoubtedly were painted in this colour to indicate their great value.”[4] Three mushrooms is the dose described in the sixteenth-century *Florentine Codex*, a Spanish ethnography composed in Spanish and Nahuatl languages by a Franciscan friar and a group of Nahuatl elders, scholars, and artists.

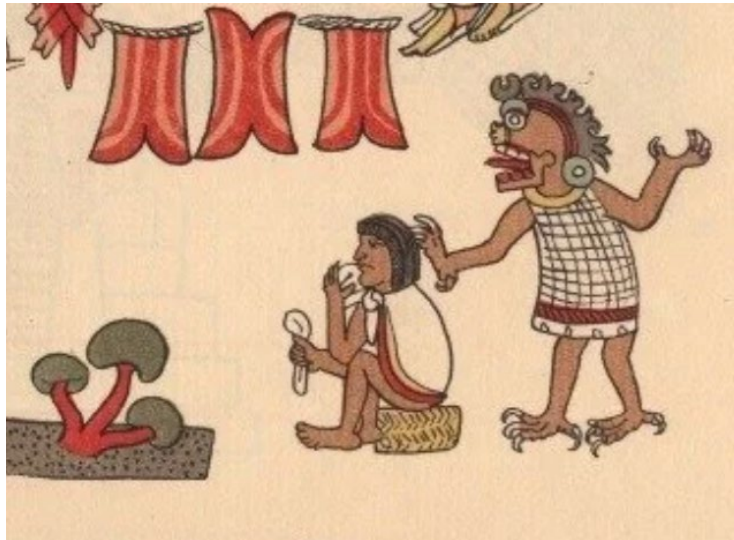


IMAGE 2

Teonanacatl use depicted in the sixteenth-century Codex Magliabechiano f.90.r.

According to Mercedes de la Garza, scholar of pre-Columbian Mesoamerican cultures, “A representation of the *Magliabechiano Codex* illustrates precisely the custom of only eating two or three mushrooms and on the visions produced. We see a native seated in front of three mushrooms, with another in the right hand and ingesting one more. Behind him, placing a hand on his head, is Mictlantecuhtli, the deity of death, expressing the experiences and images of death that those who ingested the *teonanacatl* used to have.”[5] Mictlantecuhtli, found behind the mushroom-eating man who looks to the left, is the ruler of Mictlan, the Place of the Dead—not necessarily the Underworld but closely related to the Underworld in funeral rituals. “The second illustration from the *Magliabechiano Codex* offers three elements: mushrooms, a man eating them, and a ‘supernatural’ effigy behind him. The reader will notice that the man holds a mushroom in each hand; that is, they have a pair of them.” [6] The man consuming the mushroom, however, could have a third mushroom in his mouth, agreeing with the three-mushroom dosage in colonial sources.

GEOGRAPHY AND CONTEXT

Researchers indicate that “Mexico represents without a doubt the world’s richest area in diversity and use of hallucinogens in aboriginal societies.”[7] As a region, Mexico contains 10 percent of the world’s total biodiversity and accounts for the most significant psychoactive biodiversity and the number of *Psilocybe* species. (**Image 3**) Several Indigenous *Mesoamerican* cultures have used varieties of *Psilocybe* mushrooms.[8]

Psilocybe aztecorum (**Image 1**) and *Psilocybe mexicana* grow in volcanic regions of Central Mexico, especially surrounding the Popocatepetl and Iztaccihuatl volcanoes, “known only from the high mountains of Central Mexico: Río Frío, Nexpayantla (in the Popocatepetl), and Nevado de Toluca, in the State of Mexico, Paso de Cortés (between Iztaccihuatl and Popocatepetl), in the State of Puebla, and La Malinche, in the State of Tlaxcala.”[9] The most significant number of *Psilocybe* mushroom species in the

world, around 27, are grown in the state and region of Oaxaca, Mexico, and there are probably more species there that have not yet been documented and registered.

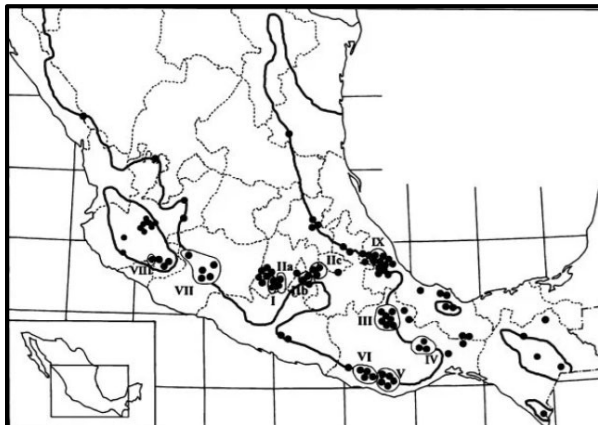


IMAGE 3 Map displaying the distribution of *Psilocybe* mushrooms in Mexico. “Distribution of sacred species of *Psilocybe* in Mexico and the indigenous peoples who use them. Each dot represents one locality, or several adjacent localities. The thick solid line delineates mountainous areas with a temperate climate (1,500 m altitude or higher). Dotted lines indicate state borders within Mexico. Thin solid lines encircle current territories of mushroom-using indigenous groups: I: Matlazincas; II: Nahuas (a: Nevado de Toluca; b: Popocatepetl volcano; c: Necaxa); III: Mazatecs; IV: Mixes; V: Zapotecs; VI: Chatins; VII: Purepechas (Michoacan); VIII: [Nahuas] (Colima); IX: Totonacs (Veracruz). All groups indicated have been confirmed to use ceremonial mushrooms through the present except for the Colima Nahuas (VIII).” [10]

PRIMARY SOURCES AND EVIDENCE

Because mushrooms are 80 percent water, it is almost impossible to find and analyze material remains of *teonanacatl*. Evidence derived from sculptures, ritual paraphernalia, and historical sources suggests an ancient cult of *teonanacatl*.

Afterlife concerns were a central cultural feature in Nahua religion. **Image 1** from the sixteenth-century Nahua/Aztec religious text *Codex Magliabechi* depicts a figure consuming *teonanacatl* mushrooms accompanied by Mictlantecuhtli, the Lord of Death. Death deities in Nahua culture are associated with sacred narratives about human origins and human fate. Compiled in the sixteenth century by Fray Bernardino de Sahagún with the significant support of Nahua scholars and artists, the *Florentine Codex* presents a large number of references to *teonanacatl*. “It is called *teonanacatl*. It grows on the plains, in the grass. The head is small and round; the stem is long and slender. It is bitter and burns; it burns the throat. It makes one besotted; it deranges one, troubles one. It is a remedy for fever, for gout. Only two [or] three can be eaten. It saddens, depresses, troubles one; it makes one flee, frightens, makes one hide. . . He who eats many of them sees many things.” [11] While a negative colonial tone predominates, this quote describes *teonanacatl* and a range of its medicinal and visionary effects.

Completed in 1577 at the Imperial Colegio de la Santa Cruz in Tlatelolco, which today is Mexico City, the *Florentine Codex* includes a ceremony performed by Nahua traders to give thanks for a successful expedition. This *teonanacatl* ritual has communitarian aspects, and the description reveals the significance not just of the visions but of talking about the visions. “At the very first, mushrooms had been served. They ate them at the time when, they said, the shell trumpets were blown. They ate no more food; they only drank chocolate during the night. And they ate mushrooms with honey. When the mushrooms took effect on them, then they danced, then they wept. But some, while still in command of their senses entered and [sat] there by the house on their seats; they danced no more, but only sat there nodding.” [12] This testimony highlights hedonistic uses of psychoactive mushrooms, especially among Nahua/Aztec elites; the communal and joyful consumption of entheogens is widely unacknowledged and understudied in scholarship, even in psychedelic studies.

INTERPRETATION

Colonial, anthropological, and Indigenous sources document that some consumers of *teonanacatl* become ritual specialists. Through their trance experiences, they are intermediaries between inhabitants of the human realm and sacred entities: ancestors, gods, nature spirits, and, especially, rain deities.[13] The Nahua/Aztec link between *teonanacatl* psychoactive mushrooms and death deities is shared with the Mayans.

Teonanacatl are embedded in Maya and Nahua territories and cultures. Historical sources demonstrate that *teonanacatl* mushrooms are related to the rainy season, and these cultures link sacred mushrooms with rains and thunderbolts, symbolically reflecting the natural growth of physical mushrooms during the rainy season of July and August. Nahuas relate *teonanacatl* to deities of fertility, water, and thunderbolts. The most potent *teonanacatl* are thought to grow from soil at locations where lightning has struck. *Teonanacatl* mushrooms are not merely a drug or a substance that can be isolated from the territory; they are beings/entities with which it is possible to establish communication through ritual language.

Mushrooms are sacred beings themselves, and they enable communication with the wide range of these cultures' deities and ancestors; furthermore, *teonanacatl* mushrooms are connected to the afterlife, concerns about the afterlife, and Underworld sacred beings, including the Lord of Death.[14] Mayans connect sacred mushrooms to the underworld death-beings known as Nine Lords of Xibalba.[15] Nahua culture associates the *teonanacatl* with Mictlantecuhtli, the Lord of Death. The image of the Lord of Death was not always frightening to ritual specialists; during healing rituals and divination, Mictlantecuhtli can be benevolent and can refer generally to the ancestors.

IMPLICATIONS

In the last two decades, psilocybin and psilocin have taken a predominant role in psychedelic science and medicine because of their therapeutic potential to treat conditions related to depression, anxiety, post-traumatic stress disorder, palliative care, and addiction treatment. These therapeutic potentials have generated dozens of clinical studies, changes in legislation in some countries, the new design of public policies, the construction of a more favorable public opinion, and the creation of a growing industry around *Psilocybe* mushrooms and their chemical components.

All this has caused paradigm shifts and a dizzying series of social and cultural transformations. These transformations seem novel at first glance, but the relationship between humans and *Psilocybe* mushrooms has a long tradition among the Indigenous peoples of the Americas, especially among the Nahua/Aztecs. To better understand *Psilocybe*'s therapeutic potential and the cultural transformations associated with it, it is essential to know the history and contexts of its different uses.

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Xi'i Ndoto, Psilocybe mexicana

Mixtec culture

NAME

Psilocybe mexicana is a mushroom (**Image 1**) that grows in the State of Oaxaca and throughout Central Mexico; *Psilocybe* is a genus of mushrooms, some of which contain the psychoactive chemicals psilocybin and psilocin. *Psilocybe mexicana* is used for ritual and therapeutic purposes by many Indigenous Mesoamerican peoples: Chatins, Mazatecs, Mixes, Nahuas, Zapotecs, and Mixtecs.[1] *Psilocybe mexicana* mushrooms have a range of Indigenous names depending on the context in which they are used.



IMAGE 1

Psilocybe mexicana observed by Alan Rockefeller on iNaturalist.
<https://www.inaturalist.org/observations/182283461>

In Ñuu savi, the Mixtec language spoken in Oaxaca and its environs, the generic term for mushroom is *jibi* or *xi'í*. [2] One Ñuu savi-language term for visionary mushrooms is *xi'i ndoto*, which can be translated as “the fungus that awakens.” [3] In Nahua culture, *Psilocybe mexicana* is known as *teonanacatl*, “Flesh of the gods,” [4] a term compounding the word *teotl*, meaning “god,” and the word *nanácatl*, meaning “fungus” or “flesh.” In Mixe/Ayuuk language, *Psilocybe mexicana*'s name is *pi:pti*, or *pi:pta*, meaning “resembles a thread.” [5]

Several species of *Psilocybe* mushrooms grow in territories occupied by Mesoamerican cultures, and different cultural uses correspond to different *Psilocybe* species. Three species for sacramental use by Ñuu savi (Mixtec) people are *Psilocybe mexicana*, *Psilocybe caerulenscens*, and *Psilocybe zapotecorum*.

INTRODUCTION AND ARTWORK

The *Codex Yuta Tnobo* or *Codex Vindobonensis Mexicanus 1* is a sixteenth-century pictographic manuscript created by Ñuu savi (Mixtec) people of contemporary Oaxaca, Guerrero, and Puebla regions of Mexico. The *Codex* portrays Ñuu savi cosmogony by depicting the creation of the universe before the First Dawn that consecrates corn, *pulque* (a fermented beverage), and visionary mushrooms, all essential crops for Ñuu savi people. [6] The Ñuu savi culture links rain, water, maize, and mushrooms to fertility; all four are represented in Plate 24 of the *Codex*. **Image 2** details sacred entities and gods associated in consecration rituals in plate

24 of the *Codex*. Toponyms are depicted symbolically in the *Codex*—they can be recognized by Ñuu savi glyphs for “town.” Plate 24 also depicts dates—they can be recognized as colorful dots attached to a symbol by a line. The *Codex*’s pictographic language can be read starting from the bottom-right side, gradually ascending counterclockwise to the upper right corner, and continuing to the left side of the plate. The names of many deities in this image, such as Nine Wind or Lady Eleven Lizard, contain pictographic numbers that are easily recognized by Indigenous readers of the images. The interpretations below are enriched by the research of two scholars who are themselves Ñuu savi: Faustino Hernández Santiago and Gabina Aurora Pérez Jiménez



IMAGE 2

Codex Yuta Tnoho or Codex Vindobonensis Mexicana 1, Plate 24.

To the center-right side is Nine Wind, who carries on his back a sacred entity named Lady Eleven Lizard, who holds four mushrooms on her headdress. Behind Nine Wind and Lady Eleven Lizard is Lady Four Lizard, who also holds four mushrooms on her headdress. Lady Eleven Lizard and Lady Four Lizard both symbolize the female spirit of the sacred mushrooms, and they both also display their own totemic animal or *nagual*, the Lizard, which is closely associated with fertility.

Nine Wind, Lady Eleven Lizard, and Lady Four Lizard are moving to the left towards the God of Rain and Thunderbolts located in front of a corn plant; he wears a turquoise mask with snake fangs. The Snake, whose shape and movements resemble lightning bolts, is this god’s totemic animal. In Mesoamerican cultures, the God of Rain and Thunderbolts is closely associated with sacred mushrooms, and the most powerful mushrooms in earth where lightning has struck.

The Ñuu savi scholar Faustino Hernandez Santiago explains that “The story begins on the banks of the Apoala River or Yuta Tnoho, with the meeting of two *ñuhu* (name the Mixtecs use for sacred beings even today), one red and the other golden. Then, there is a dialogue between two deities, a venerable old man and the hero of the Mixtecs people, 9-Wind or Coo Dzavui.”^[7] The name of Coo Dzavui—Nine Wind, the god who carries Lady Eleven Lizard above—can be translated “Serpent of the Rain.” He has been compared to Quetzalcoatl, the feathered-serpent god of the Nahua Aztecs.

The god Nine Wind sings while he makes music using an instrument that scrapes a bone against a skull. Anders, Jansen, and Perez Jimenez explain that Nine Wind sings hymns, “scraping bones on a skull, while eight of the First Lords ate the mushrooms. Lord 7 Flower, seated on a jaguar skin cushion, was the leader of the

group: he was crying in a trance.”[8] Lord Seven Flower has been compared to the Nahua god Piltzintecuhtli, “Young Lord,” the god of the rising sun, healing, and visions. Lord Seven Flower, tears in his eyes and holding two mushrooms, is positioned in front of Nine Wind.

To the left of Lord Seven Flower and Nine Wind are deities participating in a cosmogonic ritual. Each deity carries two mushrooms in their hands, reflecting Mesoamericans’ sacred views about duality. Anders, Jansen, and Perez Jimenez identify the following deities: “[...] in front of him participated Lord 2 Dog, the Elder Priest, Lord 1 Death, Sun [Macuilxóchitl], Lord 4 Movement, Nuhu with Jaguar Mouth, Long Curls and Crown of Knotted Paper, Lady 9 Reed, Quechquemiltl of Jade, Lady 1 Eagle, the Grandmother, Lady 9 Grass, Lady of Death [Ciuacoatl], Lady 5 Flint, Flower of Corn. They had a great vision.”[9]

Limited space prevents the examination here of historical genealogies of Ñuu savi rulers as depicted on Plate 24 of the *Codex Yuta Tnobo* or *Codex Vindobonensis mexicanus 1*.

GEOGRAPHY AND CONTEXT

Xi’i ndoto mushrooms (**Image 3**) grow in several regions of Oaxaca, Mexico. *Psilocybe mexicana* grows in subtropical regions below 2800 meters of elevation, though they do not grow there exclusively. “*Psilocybe mexicana* [...] seems to have had its origin from tropical terricolous species such as from the evergreen tropical forests, which have small spores and brown cystidia.”[10] *Psilocybe* mushrooms in Mexico can be classified into three groups corresponding to different geographical ecological zones, and *Xi’i ndoto* belongs to the group “encompassing the great majority of hallucinogenic species in Mexico, [that] is found in the intermediate zones where a moist, subtropical climate and hilly terrain give rise to mesophytic cloud forest at elevations of 1,000-1,600 m[eters].”[11]



IMAGE 3

Map of the Ñuu savi (Mixtec) region. [12]

PRIMARY SOURCES

Mushrooms are 80% water, making analysis from material remains of *xi’i ndoto* impossible; however, an abundant corpus of sculptures, codices, and ritual paraphernalia suggest *xi’i ndoto*’s early use.

The *Codex Yuta Tnobo* or *Codex Vindobonensis Mexicanus 1* dates from pre-Hispanic times in the early sixteenth-century and depicts ancient rituals using visionary mushrooms and also depicts a range of cosmogonic symbols and narratives. The *Codex* refers to the Ñuu savi (Mixtec) place of origin at the sacred tree of Apoala

and the ritual that took place before the First Dawn.[13] It also contains toponyms that continue to be inhabited by contemporary Ñuu savi people.

Inquisition archives on the topic of Indigenous rulers of Yanhuitlan, Oaxaca, in the Ñuu savi region, describe a range of sacred mushrooms' sacramental uses. Robert Gordon Wasson explains that "In proceedings before a Spanish scribe and notary, three Indians notables gave testimony concerning their ostentatious worship of the gods of the old religion. As they have been baptised, they were of course apostates. The principal Indian gave his testimony in Mixtec. It seems that he had taken inebriating mushrooms to invoke divine help in various circumstances." [14]

Ethnographic research and the interpretations by Ñuu savi scholars reveal *xi'i ndoto*'s cultural uses—sacramental, therapeutic, and divinatory—and nuance the symbolism of sacred mushrooms by exploring cultural features of the entheogenic experience, especially *xi'i ndoto* facilitating encounters with wisdom and gaining wisdom. While "the use of [specific] hallucinogenic mushrooms in the communities under study was not reported . . . informants mentioned that in the San Antonio Huitepec municipality south of the Santa Catarina Estetla and San Juan Yuta Communities healers and shamans use mushrooms for divination or healing purposes." [15] *Xi'i ndoto* mushrooms still grow in this territory, but knowledge about their cultural use is disappearing.

INTERPRETATION

In Ñuu savi (Mixtec) worldview, *xi'i ndoto* mushrooms have the quality of being animated, an aspect of their personhood. They are an integral part of the sacred landscape that cannot be detached from the territory where they grow. "The mushroom has the quality of being animate. There is a conversation between the mushroom and the one who takes it. The fungus knows much, and thus is able to foretell. As the mushroom itself foretells, the proposition of ingesting it, as an intention, is what put one into contact with the spirit of the mushroom. Insofar as the mushroom knows of deeds and activities that man cannot know without its aid, the fungus represents the extra-human world. In itself it contains a supernatural or sacred force related to wisdom." [16] Due to *xi'i ndotos*' visionary properties, images depicting sacred entities and supernatural beings likely emerged from visions or dreams during entheogenic experiences.

The spirit of the *xi'i ndoto* has a feminine character among the Ñuu savi. In ritual preparations, a girl is in charge of collecting and preparing *xi'i ndoto* mushrooms. "The meaning of the mode of preparation increases its importance taking into account the kind of person who grinds it, for it must necessarily be a girl, which is also a necessary and unique element in the Mixtec pattern. Undoubtedly, we are in the presence of a belief about the essential quality of the mushroom expressed socially through the kind of person representing complete purity: the girl. The reverent attitude shown toward the mushroom its only parallel at the other end of the social scale in respect for the elders." [17]

Xi'i ndoto have been hypothesized to be connected to art, especially painting and writing, including the painting/writing of codices like the *Codex Yuta Tnobo* or *Codex Vindobonensis Mexicanus 1*. During fieldwork undertaken in Necaxa, a Nahuatl region in the Mexican State of Puebla, the mycologist Gaston Guzmán registered the name *teotlaquilnanacatl*—its correct spelling is *teotlacuilnanacatl*—for *Psilocybe* mushrooms, and that name can be translated as "an Aztec word that probably means "mushrooms of the gods" or "divine one who paints or writes," from *teo* = god, *tlacuilo* or *tlacuilo* (= painter or writer) and *nanacatl* = mushroom." [18] Another possible translation of the Nahuatl-language term *teotlacuilnanacatl* is the "mushroom of the sacred writing,"

linking the use of *Psilocybe* mushrooms with the creative process in painting and writing. This is only a hypothesis, and all codices should not be considered composed under the influence of *Psilocybe* mushrooms. Writing is related to wisdom. Native Mesoamerican people's association of psilocybe mushrooms with writing affirms that *Psilocybe* mushrooms are considered a source of wisdom and truth.

The entheogenic experiences brought about by *Psilocybe* mushrooms are not a series of hallucinations, as Western prohibitionist policies continue to depict them. The term *xi'i ndoto* means the “fungus that awakens,” which denies the incorrect assumption that the entheogenic experience is an escape from reality. The goal of *xi'i ndoto* and its use is to awaken a person. *Xi'i ndoto* extends consciousness in the search for wisdom to solve an illness or address a problem.

IMPLICATIONS

Nowadays, cultural usage of *xi'i ndoto* by Ñuu savi (Mixtec) is threatened by the enduring effects of colonization and the prevailing criminalization and stigmatization resulting from lack of information and because general audiences and authorities still consider *Psilocybe* mushrooms to be a drug. Mexican Law contains an exception to prohibitions for the sacramental use of *Psilocybe* mushrooms by Indigenous peoples; unfortunately, many communities are not aware of this legal exception. Criminalization and lack of recognition erase cultural heritage.

Xi'i ndoto mushrooms enable communication between humans and ancestors as well as sacred and more-than-human beings, including rain deities and guardians of hills, caves, springs, rivers, lagoons, or forests. Sacred entities, including *xi'i ndoto*, are identified to be natural forces, and they are recognized and respected as persons. Personhood is a cultural feature that understands the world in human terms.

The process of personhood, a dialogical process of communication through chants and prayers and entering reciprocal relationship, has ethical consequences. Dealing with a person is not the same as dealing with an object or substance—which is how many contemporary psychedelic activists and clinical scientists widely perceive *Psilocybe*—or as a drug—which is how prohibitionists invariably perceive *Psilocybe*.

Among Ñuu savi, *xi'i ndoto* have a range of uses and purposes. Therapeutic uses: It is stated that the mushroom has healing power. *Xi'i ndoto* discovers the causes of diseases and prescribes the appropriate cure. Divinatory uses: *Xi'i ndoto* is an agent who forecasts the future and talks about the past. Ritual uses: *Xi'i ndoto*'s preparation is striking: The Mixtec pattern for preparing *xi'i ndoto* consists of grinding it with water in the *metate*, a stone base for grinding grains, before consuming it. In other cultures, such as the Mazatec, it is customary to eat the mushroom whole or shredded, but not ground. Creative uses: The hypothesis that some mushrooms were used for creative purposes—including to paint or to write codices—sheds light on an overlooked vein of research that explores the rich and diverse creative and aesthetic uses of sacred plants and fungi by Native Mesoamerican peoples.

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Nti' si'tho', “The Little One Who Springs Forth”; *Cui'ya jo' o su'*, “The Mushroom of Higher Reason”; *Psilocybe caerulescens*

Mazatec and Chatino Cultures

NAME

The names for *Psilocybe caerulescens* mushrooms in different languages reflect the manners by which these fungi grow and their cultural context in Mesoamerica. In the Mazatec language of Oaxaca, Mexico, the *Psilocybe caerulescens* (**Image 1**) is named “*nti' si'tho'*,” meaning “the little one who springs forth,” which is appropriate because these mushrooms “sprout upward” from where they grow. As part of their cultural heritage, Mazatec people of Oaxaca, Mexico, and their environs use “*nti' si'tho'*” mushrooms for healing and divination rituals. In the Spanish language, *Psilocybe caerulescens* is named “*derrumbe*,” meaning “landslide,” for the mushrooms grow where soil has slipped down. It is known in English as the “landslide mushroom” (*Psilocybe caerulescens* is also documented growing in sugarcane fields). This entry favors the Mazatec Native term “*nti' si'tho'*” for *Psilocybe caerulescens*.



IMAGE 1

Psilocybe caerulescens var. *Murril* observed in Mexico by karolm_miranda_vrgn and displayed on iNaturalist.Sierra Mazateca, Santa María Chilchotla, Oaxaca, Mexico. [inaturalist.org/observations/225456146](https://www.inaturalist.org/observations/225456146)

Details embedded in and surrounding the word “*nti' si'tho'*” reveal these sacred fungi’s place in Mazatec culture. The first syllable “*nti*” is a diminutive that conveys deference and affection, displaying the intimacy Mazatec people have with these mushrooms, and the word “*si'tho'*” means “that which springs forth”; therefore, “*nti' si'tho'*” can be translated “the little one who springs forth” or “the dear little one who sprouts.” Roger Heim and Robert Gordon Wasson explain the Mazatec-language term in a way that stresses the mysterious nature of the mushrooms and their facilitated experiences: “That which comes of its own accord,

no one knows from where, like the wind that comes without us knowing where from or why.”[1] Rolf Singer and Alexander H. Smith explore the connection between “*nti' si'tho'*” and the shifted earth: “*Nti-xi-tjo-qui-xo*, pronounced *ndee'-shree-t(h) oe-kee-shro*, meaning dear little thing that comes out of the earth of a landslide.”[2]

In addition to the Mazatec people, “*nti' si'tho'*” is considered sacred by other Mesoamerican cultures. For instance, in Yaitépec pueblo, Oaxaca, *Psilocybe caerulescens* is reverently connected to wisdom and called “*cui' ya jo' o su'*,” meaning “the mushroom of higher reason” in Chatino language.[3] The significant connections between *Psilocybe caerulescens* and wisdom or higher reason are further explored in this entry.

This entry focuses on *Psilocybe caerulescens* var. *mazatecorum* (in taxonomy and botany, “var.” means variant and usually refers to a place or the surname of a botanist who discovered the variant) due to the rich historical and anthropological evidence for this particular mushroom’s sacramental, divinatory, and therapeutic use in the Mazatec Highlands of Oaxaca, Mexico.

INTRODUCTION AND ARTWORK

Contemporary Mazatec artists are inspired by the sacramental uses of *Psilocybe caerulescens* that they call “*nti' si'tho'*.” Asunción Alvarado’s 2025 painting titled *Nindo Ngan 'i6 Cerro de la Gran Energía*—meaning “In The Mountain of Great Energy”—features sacred “*nti' si'tho'*” mushrooms surrounded by a range of sacred shapes and images. (Image 2)



IMAGE 2

Nindo Ngan 'i6 Cerro de la Gran Energía (2025) by Asunción Alvarado. Acrylic/Canvas Series Holy Children.

A brilliant orange and yellow '*nti' si'tho'*' mushroom is depicted at the painting’s center. The mycelium, the underground root structure of the mushroom, and the stipe, the stem or stalk of the mushroom, undulate from the bottom center towards a big orange mushroom cap. Below the mushroom cap, on each side of the stipe, are two yellow hummingbirds that look toward the painting’s edges, and in front of each hummingbird are two pink shapes that resemble shells; these are volutes or scrolls. Below these volute scrolls are four blue anthropomorphic figures, and on top of each volute scroll, as if growing from them, are blue mushrooms, both of which are thin, resembling arrows pointing up and out to the edges of the painting’s frame.

The volute scroll shapes are significant details in the painting. Volutes are shapes that in ancient Mesoamerican traditions are related to words, specifically ritual and poetic language. “Volutes of words” is a phrase related to communitarian works that strengthen bonds and create shared responsibility in communities. Volute scrolls symbolize *xábasen*, which means “mutual aid” or “communitarian work” in the Mazatec language, a cultural feature shared with other Mesoamerican cultures, including the Nahuatl who use the term *tequio* to mean “communitarian work.”

In the center of the painting, superimposed and directly above the sacred “*’nti’ si’tho’*” mushroom is a big orange bird with outstretched wings and yellow feathers; the bird flies upward to the top of a radiant mountain in the painting’s background. The base of the mountain extends across the open wings of the bird, forming a triangle, and its wings resemble arrows pointing outward to the edges of the frame. The mountain features purple, pink, and yellow colors, with black borders. Lit candles, also pointing up and out, are drawn above each wing of the radiant bird. Above the bird’s head is a transparent circle extending to the top of the mountain. Inside the circle are more volute scrolls rendered in green lines in each corner of a pentagon that contains a green circle with another circle bearing a white, radiant center point. Yellow rays outside the circle create a brilliant atmosphere extending across the top of the picture, contrasting the darker and more structured bottom of the picture, perhaps contrasting the illuminated heavens and the grounded Earth.

Regarding the symbolism in the painting, Asunción Alvarado explains: “This work depicts the energy of the mountain as a living being and creator of sacred mushrooms or holy children. It is a manifestation of the sacred, visualizing the spirits of the mushroom. In the center, a cosmic bird spreads its wings, which merge with the summit of the sacred mountain. The candles represent clarity on the path of trance. All the elements embrace the mountain as a sacred and ritualistic whole.”[4]

GEOGRAPHY AND CONTEXT

Psilocybe caerulescens (Images 1 and 3) has a broad distribution in the Americas. **(Image 4)** “[*Psilocybe*, hereafter in the quote *Ps.*] *caerulescens* grows mainly in shaded places in plantations or shaded fields, while *Ps. mexicana* prefers sunny open fields and pastures. *Ps. caerulescens*, according to the statements of the Mazatec Indians whom we consulted, regularly inhabits the surface of old landslides, two or more years after the landslide has occurred.”[5]



IMAGE 3

Psilocybe caerulescens var. Murril observed in Mexico by Joey Santore and displayed on [iNaturalist.inaturalist.org/observations/106474859](https://www.inaturalist.org/observations/106474859)

“*Nti' si'tho'*” mushrooms (**Image 1**) grow widely and are used sacramentally, for divination, and therapeutically by an array of Indigenous peoples in several regions of the Mexican State of Oaxaca, including the Mazatec Highlands and the Southern Oaxaca Mountains.[6] In Chatino country, also in Oaxaca, *Psilocybe caerulescens* grows in wet meadows near Yaitépec pueblo.[7] '*Nti' si'tho'*' is found growing in Central Mexico in the States of Puebla and Veracruz, and it has also been found growing in the United States. [8] *Psilocybe caerulescens* especially grows in the Southeastern United States, particularly in northern Georgia. (**Image 4**)



IMAGE 4

Map of the distribution of *Psilocybe caerulescens*.

<https://www.gbif.org/species/5242497>

PRIMARY SOURCES AND EVIDENCE

Mushrooms are 80 percent water, making it difficult to find evidence of their material remains. Sculptures, paintings, and historical literary sources suggest ancient use in Mesoamerica. Mayan mushroom stones—sculptures of decorated mushrooms— date from 1000 BCE.[9] Twentieth-century anthropological research demonstrates the widespread persistence of sacramental and healing rituals among Mesoamerican cultures such as Mazatecs, Chatinos, Zapotecs, and Nahuas.[10]

Pre-Hispanic, pictographic codices depicting sacred mushrooms are found before the sixteenth century. Sixteenth- and seventeenth-century Colonial chronicles written by friars and missionaries document the consumption of sacred, visionary fungi. Regarding Mazatec culture, ancient evidence is less abundant. The Church’s Inquisition trial records are scarce in their depictions of sacred mushrooms, in comparison to their records about peyote. This lack of evidence and Mazatec secrecy around “*nti' si'tho'*” was a core part of William Safford’s hypothesis that ritual uses of “*nti' si'tho'*” disappeared during colonial times. Safford was skeptical of Spanish Colonial chronicles. Safford argued that in Colonial documents these sacred mushrooms known by the Nahuatl-language term *teonanacatl* were primarily peyote buttons.[11]

Scholars contested Safford, especially anthropologists. In 1940, Blas Pablo Reko argued that *Psilocybe* mushroom rituals continue to be practiced among Indigenous peoples in the State of Oaxaca, Mexico.[12] In 1938, Jean Basset Johnson was the first anthropologist to witness a mushroom ritual; he also mentioned the ritual uses of *Salvia divinorum*. [13] In the same year, Richard Evans Schultes [14] and Blas Pablo Reko [15] traveled to Huautla de Jimenez in Oaxaca, gathering mushroom samples that they sent to Harvard University for identification. Their scholarship is featured in the journal *American Anthropologist* Volume 42, numbers two and three published in 1940. Robert Weitlaner, who had worked in the Oaxaca region for years looking for the ancient Mazatec calendar, provided insightful information regarding the continuity of mushroom rituals in Mesoamerica. [16] The advent of World War II caused these important findings made during a very short period of time to remain generally unknown.

Only in the Postwar Period was ethnomycology—ethnographic study around mushrooms—established as a scientific discipline that could explore Mesoamerican use of *Psilocybe* like “*nti’ si’tho’*.” The works of Robert Gordon Wasson, Valentina Pavlovna Wasson, Roger Heim, Rolf Singer, and Gaston Guzmán presented and structured emerging and ongoing systematic research. Especially notable is Wasson’s encounter with Maria Sabina—the Mazatec ritual specialist and healer or *chotaj chinej* who had a deep knowledge of ritual and therapeutic uses of sacred *Psilocybe* mushrooms—that was published for a popular audience as a photo essay in *Life* magazine in 1957.[17] (Image 5)



IMAGE 5

María Sabina and her daughter during a mushroom ritual called a *velada*. Photograph by Allan Richardson (1955), Tina and Robert Gordon Wasson Ethnomycological Collection Archives, Harvard University.

Wasson’s writing about Sabina is limited by the dominance of his own perspective; nowadays, due to the scholarship of Álvaro Estrada, it is possible to know Maria Sabina’s first-hand testimony regarding *nti’ si’tho’* mushrooms and their ancestral uses. “I didn’t know in reality whether the mushrooms were good or bad. Nor did I even know whether they were food or poison. But I felt that they spoke to me. After eating them, I heard voices. Voices that came from another world. It was like the voice of a father who gives advice [...] Sometime later, I knew that the mushrooms were like God. That they gave wisdom, that they cured illnesses, and that our people, since a long time ago, had eaten them.”[18]

María Sabina was not an isolated figure. She was one of many keepers of communal, ancestral knowledge about *nti’ si’tho’*. Singer and Smith describe another “*nti’ si’tho’*” expert: “Isauro Nava Garcia, an exceptionally intelligent and cooperative man who could express himself well in Spanish, and equally well spell the words of his native Mazateco, turned out to be a keen observer of fungi. He recognized easily and almost infallibly the different species of *Psilocybe*, knew where they could be found and when.”[19] According to Sabina, the traditional knowledge of “*nti’ si’tho’*” is shared through sacred narratives, oral history, and practiced knowledge of healing rituals across generations as Mazatec cultural heritage.

María Sabina faced challenges during her life for sharing her knowledge with outsiders such as Robert Gordon Wasson. However, Mazatec culture has different and plural perspectives regarding sacramental and therapeutic uses of “*nti’ si’tho’*” and the secrecy around *nti’ si’tho’* rituals and lore, highlighting the respect and consideration for healing rituals in Mazatec cultural heritage.

INTERPRETATION

Sacred fungi, especially “*nti’ si’tho’*,” are associated with wisdom and language among Native Mesoamerican cultures, especially among the Mazatec people. Colonial sources generally consider Indigenous rituals to be idolatry or superstition, and modern approaches to *Psilocybe* label them exclusively as drugs, whether medicinal or illicit, without accounting for their role in culture and society. Both perspectives are problematic. The psychedelic or entheogenic experience in Mesoamerica should be considered a source of knowledge, not a chemically-induced “drug experience” or a series of hallucinations.

In the Chatino-language spoken in the Oaxaca region, the word for *Psilocybe caerulescens* mushrooms is “*cui’ ya jo’ o su*” which can be translated as “the mushroom of higher reason.”[20] While this meaning may seem strange to scholars and advocates of the so-called Psychedelic Renaissance, the association of the *Psilocybe* and their facilitated experiences is an example of one significant feature regarding Indigenous philosophies. *Psilocybe* are embodied higher reason, and they are, therefore, associated with wisdom; these are not mere substances nor drugs nor hallucinogens, as they are usually conceived by non-Indigenous perspectives. A hallucination is the perception of something not actually happening or a distortion of actual experience. Hallucinations are, by their nature, false. Experiences mediated by “*nti’ si’tho’*” are authentic experiences, not false ones.

Maria Sabina considered herself a wise woman; her wisdom and association with wisdom makes her a healer, and the Mazatecs connect healing to language, the “*nti’ si’tho’*” being mushrooms of language: “I am not a Curer because I do not give potions of strange herbs to drink. I cure with Language. Nothing else. I am a Wise Woman. Nothing else [...] I take Little One Who Springs Forth, and I see God. I see him sprout from the earth. He grows and grows, big as a tree, as a mountain. His face is placid, beautiful, and serene as in the temples. At other times, God is not like a man: he is the Book. A Book that is born from the earth, a sacred Book whose birth makes the world shake. It is the Book of God that speaks to me for me to speak. It counsels me, it teaches me, it tells me what I have to say to men, to the sick, to life. The Book appears, and I learn new words.”[21]

Wisdom is associated with healing, for Mazatecs’ conceive illness to be the irruption of a negative element into the world and into language; the irruption is a fissure visible to the Wise, and through that fissure illness and death appear. For the Mazatec’s, language is “the corner in the wound” with which the Mazatec wise doctors “plow the world.”[22] Mazatec wise doctors— whether they be called “*chjota chjiné*,” “*chjota bendaá*,” or “*chjota tje’el*”— “patch up” the world wherever it has been broken for whatever reason; they cure with language: the mushrooms of language, are used to patch up a wounded world.[23]

IMPLICATIONS

The Mazatec-healer Maria Sabina is recognized and associated with *Psilocybe* mushrooms worldwide; however, her ideas and teachings are often misunderstood. Her testimonies, chants, and ritual language demonstrate deep Native understanding about how sacred fungi, including “*nti’ si’tho’*” and “*cui’ ya jo’ o su*,” provide wisdom and are associated with wisdom in Indigenous contexts.

A significant feature of entheogens with psychedelic properties that researchers and advocates often praise is their power to transform mood, consciousness, and how we approach daily life.[24] This transformative power of consciousness is not easy to achieve through entheogens. On the other hand, everyone

is capable of recognizing the significance of ritual language and the teachings embedded within Indigenous sacramental, artistic, or creative uses, regardless of an individual's personal experiences. Cross-cultural approaches to *Psilocybe* and other entheogens and psychedelics can overcome persisting cultural biases and hasty generalizations.

Mazatec visionary art, such as found in **Image 2**, reveals the rich symbolism and meaning of sacred mushrooms, but visionary art also shows the scope and significance of aesthetic and creative uses of sacred fungi such as “*nti' si'tbo'.*” Visionary art and artists reinterpret ancient cultural heritage, creating new mental landscapes that expand our capacity to grasp new possibilities for our consciousness.

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Vilca, Anadenanthera colubrina

Chavin Culture, Andes, and throughout South America

NAME

Vilca, also known as “*cebil*,” is a South American psychoactive snuff powder containing the prepared pods of the *Anadenanthera colubrina* tree—a tree resembling the *Anadenanthera peregrina* tree from which is made a Caribbean psychoactive snuff powder called “*yopo*” or “*coboba*.” While *Anadenanthera colubrina* is widespread in South America, this entry will favor the term “*vilca*” and the ancient Chavin culture from the northern Andean highlands of Peru, which flourished 900-200 BCE. *Anadenanthera colubrina* snuff, or *vilca*, continues to be used throughout South America, especially in Peru, suggesting a duration of continued psychedelic plant use.

Cultural uses of *vilca* include divination to gain knowledge and insight, therapeutic applications to treat illness, and as a physical purgative; *vilca* experiences in Ancient times include interaction with supernatural agents. Material evidence of early *vilca* use in ancient ceremonial centers was social, not isolated ecstatic experiences by individuals.[1] Divination is performed by consuming *vilca* snuff powder and interpreting the visionary effects. Its therapeutic properties expel sickness, especially respiratory illnesses: *Vilca* functions as an expectorant, balances humors, and treats cholera. The inhaled powder functions as a physical purgative, not unlike the vomiting common with drinking Ayahuasca or Yagé brews.

The main psychoactive principles in *vilca* are bufotenine and *N,N*- dimethyltryptamine (DMT). Bufotenine is a naturally occurring alkaloid related to the neurotransmitter serotonin—they share tryptamine as a parent molecule—that naturally occurs in specific species of toads of the genus *Bufo* and a wide range of plants. DMT is an active, naturally occurring psychedelic compound that strongly interacts with serotonin receptors in the brain; it is found in a variety of Amazonian plants.

Anadenanthera colubrina seed-pod snuff has a range of names throughout South America. *Vilca tanri* is a regional powder in Peru that, in addition to *Anadenanthera colubrina*, contains the non-psychedelic, high-protein beans of Andean *Lupinus mutabilis*, known as “*macá*” or “*macay*.” In the Quechua and Aymara languages, the word “*vilca*” signifies sacredness. Other South American Indigenous names for *Anadenanthera colubrina* snuff include “*aimpa*,” “*batax*,” and “*kuripai*.”[2] Compiled and published in Lima circa 1612, the *Dictionary of the Aymara language: First and Second Parts*, explains: “*Vilca*: The sun as it is was said in antiquity and now they said inti . . . Villca: Shrine dedicated to the sun and other idols . . . Villca is also a medicinal thing, or thing given to drink as a purge, for sleeping, and in the sleep would come the thief who had taken the estate belonging to the one who drank the purge, and recover his state; it was a sorcerer’s deception.”[3]

INTRODUCTION AND ARTWORK

The *Tello Obelisk* found in the ancient complex of Chavín de Huántar in Peru is a four-sided, vertical depiction of a zoomorphic crocodile being, but the overall image stretches across all four sides of the obelisk: the two broader sides depict each horizontal side of the crocodile's body, and the narrow two images connect the sideview images and fill the obelisk with a range of images. The images should be considered beings, if not persons. **(Image 1)** The obelisk depicts three types of images: phytomorphic plant imagery, such as seeds, leaves, and trees; zoomorphic animal imagery, such as birds, felines, shells, and crocodiles; and anthropomorphic human imagery. The central crocodile figures could be accompanied by or made up of these human, animal, and plant images. Heads of animals may appear human, but are marked as animals by bearing claws and fangs. Considering their animal-human hybridity, these may be supernatural figures. Some of the animal and supernatural figures can be interpreted to bear psychoactive plants, such as those from the genus *Brugmansia* of flowering nightshade, *huachuma*, or the San Pedro Cactus (*Trichocereus pachanoi* / *Echinopsis pachanoi*), and *vilca* (*Anadenanthera colubrina*), even though the *vilca*-producing plant does not grow in the area of Chavín de Huántar. All the images are reproduced from Maarten H. Dijkers's *The Tello Obelisk: A Very Detailed Summary on his Images* (2024).^[4] It should be remembered that interpreting the images on the Tello Obelisk has been hotly debated and remains without definitive conclusions.



IMAGE 1

Tello Obelisk. The four sides of the Tello Obelisk displayed in vertical presentation. All the other images in this entry are composite reproductions that combine the four sides of the obelisk into a two-dimensional depiction. Photo by Maarten H. Dijkers (2024).

Image 1 is a photo of the physical obelisk. **Image 2** reproduces J.W. Rowe's paper reproduction of the obelisk's imagery. In **image 3**, Maarten H. Dijkers has colored component images in brown, olive, purple, and red. This entry will use Dijkers's coloring to identify, isolate, and describe three specific images analyzed below. Lastly, **Image 4** reproduces a depiction of the obelisk displayed at the Chavín National Museum that presents the images without any of the secondary lines or symbols. **Images 1, 2, and 3** combine the four sides of the obelisk in **Image 1** into a single vertical image that depicts the four sides all together.

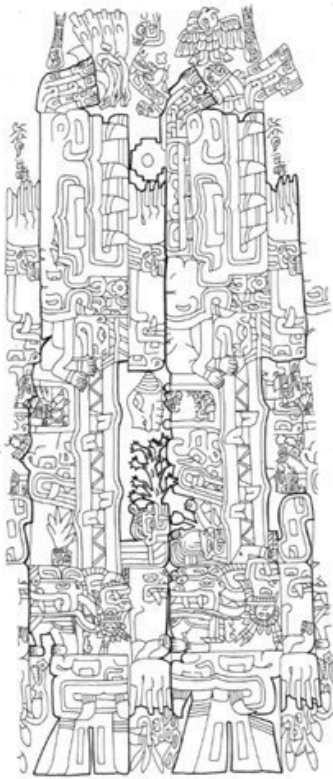


IMAGE 2

Tello Obelisk. The four sides of the Tello Obelisk recorded on paper by J.W. Rowe in the 1960s. Note the ways that images on the four sides overlap.



IMAGE 3

Tello Obelisk. Images colored by Maarten H. Dijkers, July 2024. The shapes of the separate beings highlighted by color. Olive is the color of the composite animal beings and the crocodile; the red lips help to separate the individual entities.



IMAGE 4

Tello Obelisk. The Tello Obelisk without hieroglyphs, meaning that non-image lines are not shown in this representation. Chavin National Museum [5]

In a ground-breaking study, Mulvany de Peñaloza highlights a zoomorphic animal representation accompanied by a psychedelic plant, likely a flowering nightshade. To the bottom right, below the crocodile's brown bottom leg, is perhaps an olive-colored *vizcachta de la sierra* (*Lagidium viscacia*), a mountain-dwelling rodent belonging to the chinchilla family, and from its mouth comes a red phytomorphic plant image. Peñaloza identifies the plant as *Brugmansia*[6], a genus of psychoactive nightshade plants with pendulous flowers, though *Brugmansia* plants are considered hallucinogens and delirogenics and not considered psychedelics. Scopolamine, the psychoactive principle in *Brugmansia* plants, works with different neuroreceptors and is more toxic than psychedelic plants and substances.

Further to the left of the nightshade-bearing animal, under the other brown bottom leg of the crocodile, is another zoomorphic animal head. From its mouth emerges a plant representation with three leaves and several seeded pods, resembling pod-shaped fruits. Perhaps these seedpods, clearer to see in **Image 2**, are cross-cut *Anadenanthera colubrina* seeds and seedpods, the main ingredient in vilca, and the three leaves correspond to the variegated foliage of the *Anadenanthera colubrina*. [7]

Toward the center of the image, at the center of the crocodile's body, are two feline-looking, supernatural beings with L-shaped, yellow bodies topped with zoomorphic animal heads marked by fangs and red lips; they are both connected to phytomorphic plant images that resemble trees at first glance. One of the figures has a white headdress, and a branching white plant emerges from its mouth. The second figure is depicted with a purple background, and three leaves seem to emerge from its head in that dark background. The lines of both figures are easier to discern in **Image 2**. Peñaloza argues that both these plants represent a secondary stem of the San Pedro cactus; further analysis reveals that *Anadenanthera colubrina* (*vilca*) and *Trichocereus pachanoi*/*Echinopsis pachanoi* (*Huachuma* or San Pedro cacti) could be both or either of the plants represented along with these two supernatural animal heads; both plants have psychedelic properties.[8]

Peñaloza's hypothesis was initially considered speculative and without sufficient archeological evidence, but recent research about material culture in Chavín de Huántar supports Peñaloza's findings. It provides direct evidence for the use of *Anadenanthera colubrina* and other psychedelic plants in the Andean region and among the cultures that created the Tello Obelisk. Even if *Anadenanthera colubrina* does not naturally grow there, it can be found growing twenty-five miles from the ceremonial center.[9] Plants with psychoactive and psychedelic properties were used by the Chavin people in institutionalized rituals and were not limited to individualized contexts of ecstatic shamanism.[10] Analysis of the Tello Obelisk suggests that psychoactive plants may have been used throughout the region during the Early Horizon phase of Andean History (1200-500 BCE), especially when the Chavin flourished (900-200 BCE).

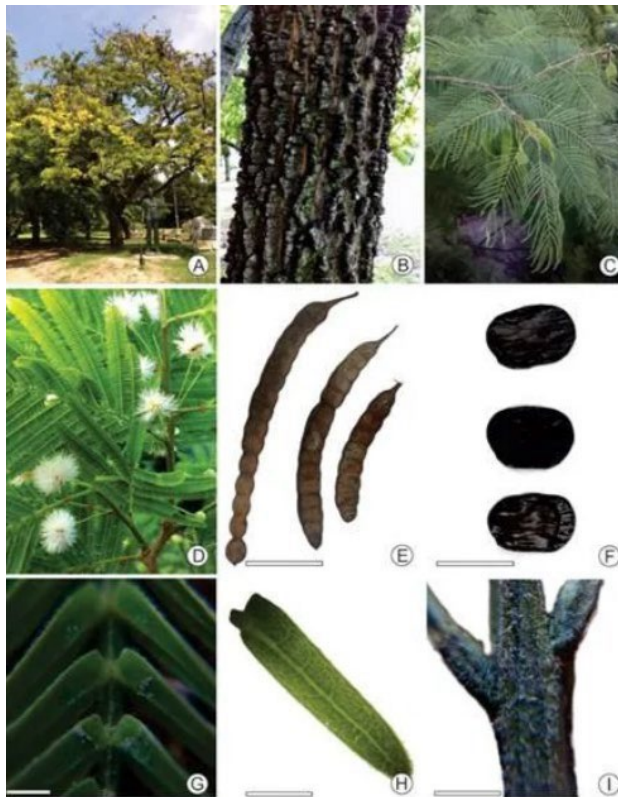


IMAGE 5

Anadenanthera colubrina var. *colubrina*. A, specimen from Urquiza Park, Paraná, Entre Ríos. B, trunk with mamelons. C, branch with leaves and fruits. D, detail of leaves and flowers. E, fruits. F, seeds. G, insertion of leaflets on the rachis. H, leaflet with closed reticulate venation. I, detail of hairy rachis and rachis. Scales: E = 45mm; F, G = 10 mm; H, I = 1 mm.” Translated from Spanish.[11] ojs.darwin.edu.ar/index.php/darwiniana/article/view/999/1248

GEOGRAPHICAL DISTRIBUTION

Anadenanthera colubrina thrives south of the equator, and its active entheogenic use is documented throughout the Central and Northern Andes. The tree can be found in Paraguay, Bolivia, and Peru, reaching as far north as the Marañón valley on the western slopes of the Andes. It is found throughout the northern Argentinian-Chilean mountain plateau of Puna, and it is common in the Argentinian provinces of Salta, Jujuy, Catamarca, Tucumán, and Misiones.[12] Its cultivation and common trade, even by groups that do not use the term *vilca*, affirm its importance in ritual and healing practices across regions and across cultural traditions in the Americas.[13]

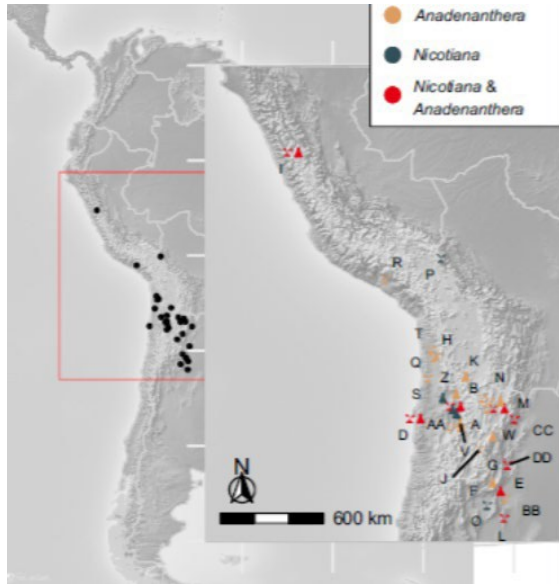


IMAGE 6

Map of pre-Hispanic use of *Anadenanthera colubrina* var *cebil* and *Nicotiana* in the Central and Southern Andes based on microbotanical and chemical evidence. [14]

PRIMARY SOURCES

Colonial records and ancient material culture document *vilca* (*Anadenanthera colubrina*) as a sacred plant throughout the Andes. Sixteenth-century Spanish sources particularly note the use of *vilca* for divination. Archeological evidence suggests the ritual use of *vilca* as early as 4,500 years ago in Northwest Argentina and surrounding areas.

In 1571, the Spanish jurist and scholar Polo de Ondegardo wrote the first historical literary reference to the psychoactive properties of *vilca*. “Those who wish to know an event of things past or of things that are to come ... invoke the demon and inebriate themselves and for this practice in particular make use of an herb called *vilca*, pouring its juice in *chicha* or drinking it by another way. Note that even though it is said that only old women practice the craft of divination and of telling what happens in remote places and to reveal loss and thievery, it is also used today by Indians, not only by the old but also by the young.”[15] In 1580, the Spanish chronicler Cristóbal de Albornoz describes the ritual use of *vilca* as a snuff powder in the southern Andean region.[16]

Paraphernalia for the preparation and use of *vilca* as a snuff powder and as an inhaled smoke are well documented. Ceramic smoking pipes found in caves contain *vilca* seeds in their bowls and bends. Snuff tables, snuff pipes, and snuff tubes were discovered west of the Andes in the Atacama Desert in Chile. Six bird-bone artifacts containing chemical and microbotanical traces of psychoactive plants—including *Anadenanthera*

colubrina and *Nicotiana rustica*—were recently discovered in Chavín de Huántar in Peru, an important Andean ceremonial center and the site of the Tello Obelisk described above.[17]

INTERPRETATION

The Chavin culture—which arose during the Early Formative period of Andean History (1200vBCE to 200 BCE) and flourished from 900 to 200 BCE—exhibited significant influence in the Andes through their material and ritual culture, including intricate art, ceramics, and rituals, all of which are connected to *vilca* (*Anadenanthera colubrina*). Therefore, *vilca* is a potent aspect to examine when interpreting early sociopolitical formation and differentiation in the historical development of Andean cultures. During the Early Formative period in the Andes, agriculture, textile art, and metallurgy developed. Also developed during this time were ceramics, which were produced close to the ceremonial center and profoundly augmented religious practices, including the use of *vilca*.



IMAGE 7

Scientific photographs of ritual paraphernalia containing chemical and/or microbotanical residues of *vilca* and/or *Nicotiana*. [18]

At Chavín de Huántar, rituals that included *vilca* use took place inside restricted spaces like ceremonial buildings and around monumental structures such as stelae and obelisks. Institutional uses of *Anadenanthera colubrina* produced hierophanies that ensured ritual efficacy and increased the credibility of the hosts in these rituals. In turn, these potent rituals strengthened the power of ritual specialists and priests, further facilitating social differentiation through prestige.[19] These spaces and structures, in turn, displayed the iconography of supernatural beings and their lore. Chavín de Huántar was a major center of public ritual activity. The ritual use of *vilca* was not limited to individual ecstatic experiences but was a socially consumed and socially structured aspect. “The site is sometimes presumed to have been a peaceful pilgrimage center that attracted devotees from across the Central Andes.”[20]

Privileged access included entering and using these restricted sacred spaces, actively participating in ceremonies, and ritually experiencing psychedelic substances that facilitate communication with sacred forces and supernatural beings. These rituals and spaces generated and sustained a vibrant ritual culture, but that ritual culture was structured by access according to prestige.[21] *Vilca*, often consumed and prepared using the Chavins’ vaunted ceramic pipes and tools, ensured ritual efficacy, and thereby its use strengthened the power of ritual specialists and priests. In this way, these potent, entheogenic rituals created and affirmed social differentiation, but also strengthened the collective feelings of the pilgrims.

IMPLICATIONS

Vilca (*Anadenanthera colubrina*) is considered a gateway to a visionary world, but it is also a medicine and a symbol related to light and the sun throughout the Andean region. In Northwestern Argentina, ceramic pipes found in caves suggest that *vilca* has been smoked there for 4,500 years. *Vilca* continues to be used today in that region, possibly making *vilca* the longest documented continued use of a sacred plant with psychedelic properties by humans worldwide.

Studying material culture is essential to avoid hasty generalizations and incomplete speculation regarding cultural and spiritual uses of psychedelic plants. At the ceremonial center of Chavín de Huántar in Peru, recent archeological findings highlight the significance of studying material culture to achieve solid evidence about the ritual consumption of psychedelic plants, especially when previous studies have been largely speculative. The use of *Anadenanthera colubrina* at Chavín de Huántar has been proposed for some time. However, the discovery of chemical and microbotanical residues of *vilca* on ritual paraphernalia at Chavín de Huántar and throughout the Andes grounds that speculation in historical fact.



IMAGE 8

Anadenanthera colubrina var. *cebil* observed in Salta, Argentina by janetchambi, documented on iNaturalist.org

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Coboba, Yopo, Anadenanthera peregrina

Taino Culture

NAME

Coboba (also spelled *cojoba*) or *yopo* are vernacular names for a psychoactive powder—usually inhaled as snuff—that contains powdered seeds from the plant *Anadenanthera peregrina* (**Image 1**), a plant similar to the *Anadenanthera colubrina* tree from which other South American cultures make psychedelic snuff, such as *vilca*. When *coboba* is inhaled via the nostrils, it produces immediate optical effects that include visualization of phosphenes (seeing sparkles, stars, shapes, and fractals), macropsia (objects appearing larger than their actual size), and inverted spatial perception (vertically flipping or rotating the visual field).[1] While many Indigenous peoples use preparations of *Anadenanthera peregrina*, this entry focuses on the Taino people of the Caribbean—though, as shown below, this group had a connection to Indigenous cultures on the American continent. This entry favors the name and spelling “*coboba*” for this psychedelic snuff.



IMAGE 1

Botanical illustration of *Anadenanthera peregrina*. [2]

Anadenanthera peregrina seeds (**Image 1**) are roasted, then ground into a powder using a wooden mortar or a wooden platter. Additional instruments, such as pestles or spatulas, help to crush and process the seeds. (**Image 2**) Y-shaped bird bones are used as paraphernalia to inhale snuff powder.[3] Such implements and instruments are key to the historical study of *coboba*. There is not a single way to prepare *coboba* snuff, nor is there a uniform or universal list of its ingredients. Different Indigenous traditions add other ingredients to the snuff concoction, such as lime from snail shells or cassava flour.

The psychedelic principle compounds of *coboba* powder are *N,N*-dimethyltryptamine, better known as DMT, and bufotenine. DMT is an active, naturally occurring psychedelic compound that strongly interacts with serotonin receptors in the brain; it is found in a variety of Amazonian plants. Bufotenine is a naturally occurring alkaloid related to the neurotransmitter serotonin—they share the common parent molecule tryptamine—that naturally occurs in specific species of toads of the genus *Bufo* and also in a wide range of plants. Bufotenine was isolated from *Anadenanthera peregrina* in the mid-twentieth century by Verner Stromberg.[4]

INTRODUCTION AND ARTWORK

Rituals for preparing and inhaling *coboba* utilize a range of supporting implements and paraphernalia; often, these are objects sculpted to depict human, animal, or supernatural beings: storage and preparation containers, processing and preparation tools, snuff tubes, musical instruments, and portable religious objects called “*zemis*” that embody non-human entities. (Image 2)



IMAGE 2

Ritual paraphernalia: *dubos*, *zemis*, and purgative tools. “Examples of Taino or Taino-influenced ritual artifacts. (A) Cohoba plate showing twins from the Museo del Hombre Dominicano; (B) duho from the Kew Gardens collection; (C) ceramic figure jar from the Museo del Hombre Dominicano; (D) duho from the Oliver Arcibo, Puerto Rico collection; (E) elbow stone from the Museo de America (all courtesy of José Oliver); (F) incised turtle bone vomit spatula fragment from Grand Bay, Carriacou (photo by Quetta Kaye).”[5]

Participants begin *coboba* rituals by using purging spatulas to empty their stomachs and purify their bodies before nasal absorption of the snuff powder via inhalation devices, such as bird bones with a Y-shape inserted into both nostrils. This cleansing prepares participants’ bodies for subsequent spiritual experiences. *Coboba* rituals use musical instruments—maracas, rattles, or whistles—that contribute to a soundscape that induces and augments *coboba*’s visionary effects.[6] Finely-crafted instruments, such as mortars and spoons, are used to prepare the *coboba* powder. *Coboba* rituals utilize special tables called “*dubos*,” which may also be considered seats, to transfer the powder into containers for preparation, storage, and use. Such paraphernalia significantly nuance our interpretation of *coboba*’s cultural uses, reflecting the interaction facilitated by *coboba* with non-human entities.

GEOGRAPHY AND CONTEXT

The *Anadenanthera peregrina* is a perennial tree that grows naturally and is also cultivated in the Orinoco basin of Venezuela and Colombia, primarily in the grasslands. It also grows in the forests of British Guyana, but it has been transported to the Caribbean, where it has a wide range of cultural uses, such as those documented among the Taino. (Image 1) Indigenous peoples throughout the Americas—the Chibcha, Guahibo, Muisca, and Taino—utilize the *Anadenanthera peregrina* tree, its beans, and its snuff for sacramental, therapeutic, and divinatory purposes.[7] Archaeological evidence suggests that Saladoid Indigenous peoples—pre-Columbian Arawak living in the Orinoco River region—migrated from the main continent to the Caribbean Islands around 500 BCE; they carried *Anadenanthera peregrina* tree seeds and established cultivation for a range of cultural uses.[8] (Image 3)



IMAGE 3

Map of the Caribbean showing major population dispersals and some of the ceramic style zones referred to in the paper (drafted by Scott M. Fitzpatrick and Joshua L. Keene). Dates in bold (in calendar years before present) indicate earliest known dates or date ranges (in cal yr BP) for the settlement of particular areas or islands in the region.[9]

PRIMARY SOURCES AND EVIDENCE

Ferdinand Columbus, the son born to Christopher Columbus during his second voyage to the New World (1493-1496), records the Taino people in the Caribbean using a bifurcated tube to inhale a powder through the nostrils, recalling the Y-shaped bird bones documented for *coboba* use. This inhaled snuff is likely *coboba* (*Anadenanthera peregrina*).

Another source for *coboba* use is Bartolomé de Las Casas (1484-1566), a lay settler to Hispaniola who eventually became a Dominican friar. “But when all the leaders of the people gathered to make *coboba*, persuaded by the *behiques* or ordered by the lords, then it was amazing to see them. In order to hold their councils or to decide difficult matters, such as whether they ought to make war or to undertake important matters, their custom was to make their *coboba*.”[10] Las Casas describes this ritual use of *coboba* in an appendix to the very first work of ethnology of the New World, *An Account of the Antiquities of the Indians*, written in 1496 by Ramón Pané, a Spanish friar who accompanied Columbus on his second voyage.

In a 1916 article titled “Identity of Cohoba, the Narcotic Snuff of Ancient Haiti,” the United States botanist and ethnologist William Safford, widely interested in psychoactive plants, explains that *coboba* powder was commonly used by *behiques*—i.e., ritual specialists or “shamans”—to induce visions and trances in which they communicated with spirits and supernatural beings.[11]

INTERPRETATION

Among the Indigenous Taino people of the Caribbean, the role of *behiques*, or “shamans,” who used *coboba* snuff, was particularly significant, as these figures intentionally embraced non-human perspectives and subjectivities. Non-human subjectivities can include animals, spirits, and physical artifacts that can also possess personhood.

The *behique* is a subject in transformation. They become a non-human spirit, an animal, or they might even assume the interior position of a sculpture, attaining the interiority of an object. They do this by

establishing a dialogue through which non-humans are granted humanity by connecting to and becoming the *bebique*.^[12]

The rituals of the *bebiques* work through this process of shifting personhood.



IMAGE 4

Anadenanthera peregrina. Observed in the Dominican Republic, by Keisel

IMPLICATIONS

Spanish chroniclers describe *coboba* being used to negotiate with spiritual forces that influence important community outcomes. Fray Bartolomé de Las Casas explains that participants consume the powder before council meetings that address complex issues such as whether to go to war or undertake other important decisions.^[13]

The psychedelic snuff was sometimes ritually inhaled by all members of a decision-making group, which suggests that collective *coboba* experiences influenced decisions made regarding the everyday world in addition to the ritual sessions led by *bebiques* to interact with the spiritual world. *Coboba* uses demonstrate that supernatural beings and spirits, animals, and even material culture were incorporated into decision-making; non-human subjectivities were a valued influence upon the world of humans.

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Ayahuasca / Yagé

Tukano Culture and Cosmogony

Various South American Native Culture

NAME

Ayahuasca and *yagé* are psychedelic brews made from plant blends, some of which contain naturally occurring dimethyltryptamine (DMT), a psychedelic chemical compound. *Ayahuasca* uses the *Psychotria viridis* shrub (*chacrana*, in the Quechua language), while *yagé* incorporates the *Diplopterys cabrerana* (*chagropanga*) plant. Both plant sources of DMT are part of a pharmacological complex; both brews are synergies of DMT sources with β -carbolines and harmala alkaloids. Unlike synthesized DMT that is smoked, *ayahuasca* and *yagé* are liquid preparations consumed orally as a tea. In addition to the *Psychotria viridis* shrub, *ayahuasca* contains the *Banisteriopsis caapi* vine, a source of β -carboline alkaloids—monoamine oxidase inhibitors (MAOI) that include harmine, harmaline, and tetrahydroharmine.[1] MAOIs inhibit the natural production of monoamine oxidase in the body that breaks down the psychedelic alkaloid dimethyltryptamine (DMT).[2]

Ayahuasca and *yagé* are the most common names and recipes for this DMT brew today, but these are not necessarily the only ones or the most ancient. According to Gerardo Reichel-Dolmatoff, the brew has many Indigenous names: “Among the Eastern Tukano people of the Vaupes, this brew is called *caapi*, or *gabpi* or *kabpi* [...] among the Cubeo, it is called *mibi*. [...] Also in the lowlands of Panama and Colombia, it is called *ddpa* among the Noanama, and among the Embera of Northwest Colombia and Southeastern Panama, it is called *pilde*. [...] Among residents of the Montaña regions of Peru and Ecuador, in the Quechua language [...] it is known by the term *ayahuasca*.”[3] The wide diversity of names exemplifies the cultural significance of these sacred plants for different Native American traditions across South America.

INTRODUCTION AND ARTWORK

The cosmogony of the Tukano people in the Northwest Amazon describes the first inhabitants of the Earth descending from the Milky Way, bringing *yagé* with them from the stars; thereby, *yagé* is an essential part of their cosmogony (**Image 1**). In one of these cosmogonies, a large Anaconda canoe, shaped like the sacred serpent, descends from the River of Stars and transports a primordial man and woman along with three plants: the foodstuff manioc (or *yuca*), the psychoactive *coca* plant, and the psychedelic *caapi* or *yagé*. [4]

Other Tukano cosmogonic stories describe a *Yagé* woman, the Daughter of the Sun, giving birth to a luminous child, who himself is *Yagé*, born in a blinding flash of light. The *Yagé* woman walks to the House of Waters, her place of origin. “She had looked at the brilliance of the sun and had become impregnated through the eye . . . And when she gave birth, there was another flash of light because the infant, being the Son of the Sun, shone brightly in the darkness of those primeval times. The child was made of light; it was human, but it was light, it was *Yagé*.”[5] Therefore, *Yagé* is a divine gift from Father Sun, conveyed to humans by his daughter, the *Yagé* woman, through her son, who is himself *Yagé*.



IMAGE 1

A Star Shaped Design. [6]



IMAGE 2

The Master of Animals. Painted Taibano maloca. [6]

Tukano cosmogony sets out another primordial deity, the Master of Animals (*Vabí-mansë*), whose daughter conveys the contents of the psychedelic brew to humans. Usually depicted as a small man or as a red dwarf, the Master of Animals is called “*Vabí-mansë*” (**Image 2**), which literally means “fish master.” He holds dominion over the hunt and fertility, and he is the owner and guardian of magical herbs that provide luck to hunters, enabling the success of the hunt.[7] The daughter of the Master of the Animals (*Vabí-mansë mangô*) is the “owner” of *yagé*, the sacred brew with psychedelic-related properties, meaning that rituals and offerings associated with *yagé* should be devoted to her.[8]

GEOGRAPHY AND CONTEXT

The two brews, *ayahuasca* and *yagé*, can be distinguished by their geographic context. *Ayahuasca* is generally brewed in Brazil and Peru, and *yagé* is usually brewed in Colombia and Ecuador. The *ayahuasca* brew includes chunks of the *Banisteriopsis caapi* vine and the leaves of the *Psychotria viridis* (in the Quechua language, *chacrana*).[9] For *yagé* brew, the basic mixture consists of *Banisteriopsis caapi* vine and *Diplopterys cabrerana* leaves (*chagropanga*, *ocoyagé*). Both the *Psychotria viridis* (*chacrana*) and the *Diplopterys cabrerana* (*chagropanga*) are sources of DMT. While the chemical compounds in the two brews are essentially the same, scholars emphasize that there is significant nuance across Indigenous taxonomies and knowledge; such nuance is not recognized by Western science.

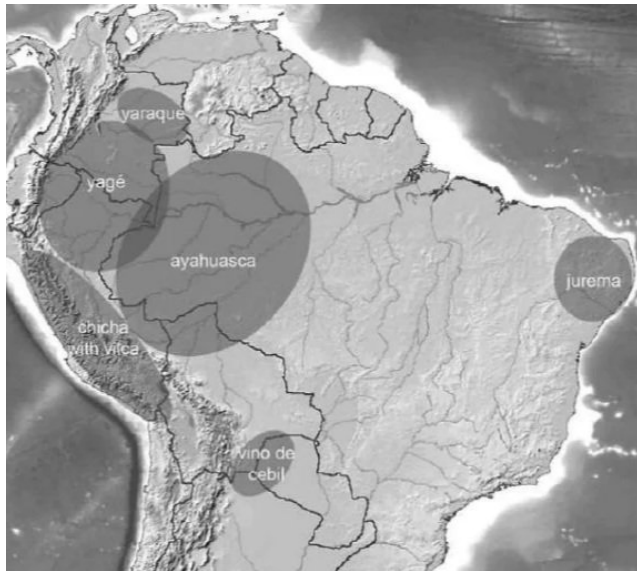


IMAGE 3

Map with geographical distribution of *ayahuasca* and *yagé*, among other substances containing DMT. [10]

Approximately 100 species from 40 plant families are reported as *ayahuasca* and *yagé* admixtures, which are part of their combined ingredients; many of these admixtures are themselves psychoactive plants, contributing to the psychedelic effects of the brewed *Banisteriopsis caapi* vine and either *Psychotria viridis* or *Diplopterys cabrerana* leaves. There is no one specific blend considered the quintessential or original brew, just as there is no single quintessential or original name for the brew.

PRIMARY SOURCES

The earliest historical documentation of *ayahuasca* appears to be reports by José Chantre y Herrera, who compiled a history of Jesuit activity from 1637 to 1767 in the Marañón River area, a source for the Amazon River in what is now Peru and Ecuador. Chantre y Herrera includes a brief description of an *ayahuasca* ritual that clearly references the mixing of a *liana*, the Spanish word for “vine”—presumably *Banisteriopsis caapi*—with other plants. “The diviner hangs his bed in the middle or sets up his stage on platform and places a hellish concoction next to it, called *ayahuasca*, which singularly effective in rendering one unconscious. A decoction is made from vines or bitter herbs, which must be boiled until it becomes very thick. As it is so strong then even a small amount can cloud the judgment, the amount needed is not much, and fits into two small cups.” [11] The negative colonial gaze is well displayed in Chantre y Herrera’s expressions, such as “hellish concoction” or “rendering one unconsciousness.”



IMAGE 4
Banisteriopsis caapi.
By Alan
Rockefeller.



IMAGE 5 *Diplopterys cabrerana.* By Carlo Brescia.
inaturalist.org

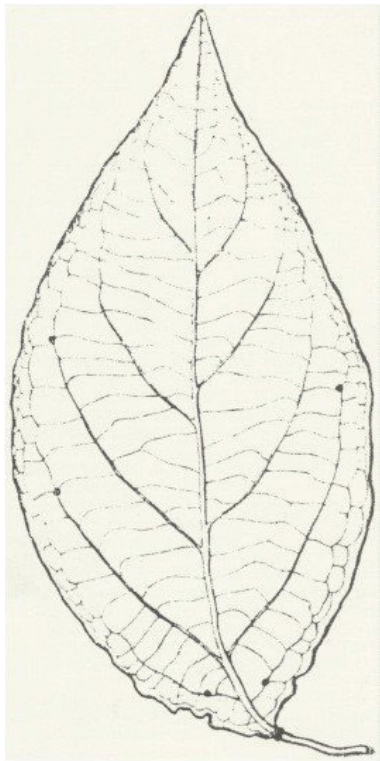


IMAGE 6
Banisteriopsis Caapi.
Morton. *Illustrated*
in Hammerman
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Bot. Leningrad 22,
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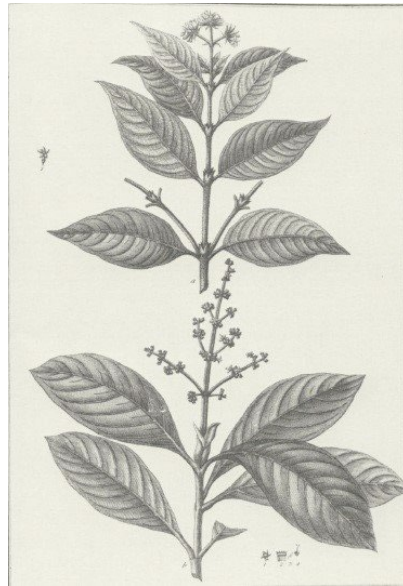


IMAGE 7 *Psychotria viridis.* The earliest drawing
of *Psychotria viridis* Ruiz et Pavón. *Illustrated in*
Ruiz and Pavón, *Fl. Peruv. Et Chil.* 2 (1799) t. 210, fig. b.
[13]

INTERPRETATION

Tukanos' visual representations of *caapi* (*ayahuasca*/*yagé*) consist mainly of two different categories of art, represented in graphic symbols that align with the effects of the potent brew upon those who drink it.[14] Neither category is a naturalistic visual depiction of the Tukanos' surrounding environment.

(1) The Tukano people create geometrical patterns in paintings that adorn artifacts, appear throughout their material culture, and are displayed in communal houses called “*malocas*” (**Image 1**). Some researchers associate these geometrical patterns with entheogenic or psychedelic experience, especially phosphenes,[15] visual sensations of light when no actual light is present, and widespread experiences of luminosity.

(2) Tukano people also draw figurative designs to depict their worldview, including representations of sacred and mythological characters,[16] usually in anthropomorphic or zoomorphic forms (**Image 2**), which are sometimes featured alongside or within the geometrical patterns.

Tukano graphic symbols are a system of communication that represents a collective knowledge embedded in iconography and a form of grammar in geometrical patterns. Geometrical patterns acquired a practical function in Tukano culture; they are graphic symbols or signs that express major tenets of behavior.[17]

Graphic, symbolic messages remind those who view them to practice moderation in hunting and fishing, in eating, in needlessly destroying the environment, in fighting, and in population increase. For instance, the Master of the Animals, *Vahí-mansë* above, sends illness due to ritual transgressions and lack of reverence, requiring negotiations by entranced medicine men (*payé*) to resolve his punishments. On the other hand, the Sun Father is a medicine man (*payé*). He is the ancestor of contemporary *payés* and the origin of their powers, for he created “*Vibó-mahse*, the Being of *Vibó*, the hallucinogenic powder, and ordered him to serve as an intermediary so that through hallucinations people could put themselves in contact with all the other supernatural beings.”[18] Within sacred narratives, the Sun Father also brought in his navel a psychoactive snuff (*vibó*) that contains the bark resin of trees from the *Virola* genus in the Myristicaceae family.

IMPLICATIONS

Due to rising interest in their therapeutic potential, today *ayahuasca* and *yagé* brews are well-known globally. The brews have been reinterpreted and distributed by a number of contemporary churches and religious movements in the West, such as Santo Daime and União do Vegetal churches. Ancient traditions surrounding the use of these psychedelic brews continue to be practiced by Indigenous communities, but their sacred narratives and rituals are frequently overlooked or misunderstood.

The sacred Tukano narratives presented above exemplify the rich Indigenous cosmologies around these psychedelic brews. The Sun Father's role in the origins of *yagé* and the Master of Animals' moral teachings against the overhunting and exploitation of nature demonstrate Indigenous moral teachings and the preservation of the natural environment. Above all, the Tukano cosmogony highlights that *yagé* is a divine gift.

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Salvia divinorum, *Apipiltzin* (Nahuatl), *Ská Pastora* (Mazatec)

Nahua and Mazatec Cultures

NAME

Ská pastora is a Mazatec name for *Salvia divinorum*, a green, leafy plant in the mint family that bears white flowers blooming from purple calyces. (Image 2, Image 4) The Mazatec-language name *ská pastora* is a hybrid and cross-cultural term: the Mazatec first syllable, *ská* or *xcà*, can be translated as “leaf,” and the Spanish word *pastora* can be translated as “shepherdess.” One hypothesis for an Aztec historical name in the Nahuatl language for *Salvia divinorum* is *pípiltzintzintin* or *pípiltzintzin*. This entry will focus on the Mazatec culture and favor the name “*ská pastora*.”

In contemporary Mazatec culture, *Salvia divinorum* is known by the names “*hojas de la Pastora*,” meaning “leaves of the shepherdess,” and “*hojas de Maria Pastora*,” meaning “leaves of Mary the Shepherdess.” In Christian traditions, however, the Virgin Mary is not thought of as a “shepherdess *pastora*.” This shepherdess *pastora* could be a survival of the pre-Christian *dueño de los animales*, “The Lord of the animals,” who figures large in folk traditions of Native Americans. [1]

INTRODUCTION AND ARTWORK

Asunción Alvarado’s 2023 painting *Birth of the Rainbow and the Shepherdess Mother* depicts a personification of *ská pastora* as a spectacular and mystical female figure. (Image 1)

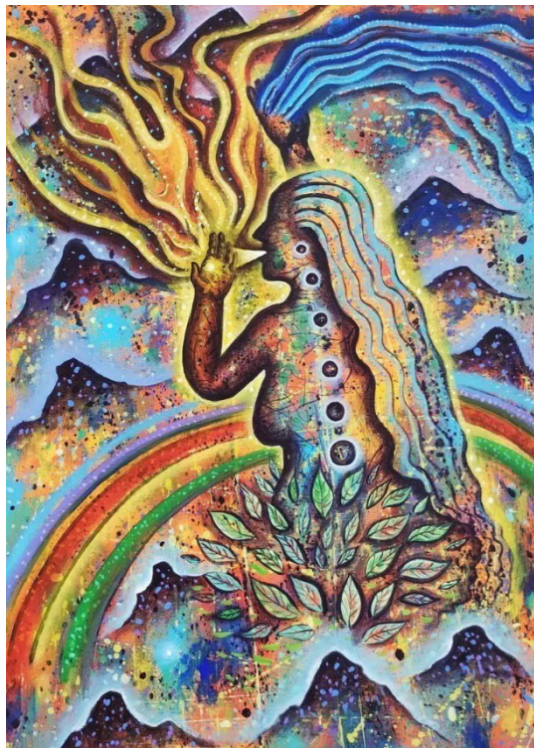


IMAGE 1

Birth of the Rainbow and the Shepherdess Mother (2023) by Asunción Alvarado.

At the bottom of the painting, a set of four mountains is surrounded by mist, which is considered alive in the Mazatec worldview. The birth of a rainbow crosses from the left side to the right. Between the rainbow and the mountains is a bush with salvia leaves, presumably *ská pastora*.

The female figure, who personifies *ská pastora*, speaks out with yellow breath that transforms into fire as it crosses her hand at the end of her bent arm. Her long hair flows down to cover her back, and at her hips it resembles a luminous waterfall. Toward the top of the painting, flowing to the right from her hand at the end of her extended right arm, is a stream of rippling water.

A set of seven mountains is found towards the top of the painting—four to the left and three to the right. Mountains emerge from the sacred woman’s breath, from the rippling water stream, and from herself as the personification of *ská pastora*.

The artist of the painting, Asunción Alvarado, explains: “Among the ways taught to us by our ancestors is the ceremonial use of the mother shepherdess to seek health and emotional balance, as well as to communicate with the entities and guardians of this sacred plant. The wise men and women, since the moment they uproot it, sing to it, offer it gifts, speak to it affectionately, and ask it to allow itself to be used in the ceremony for healing, seeking, and mediating the problem that the patient is going through. This work reflects the spirit of the mother shepherdess, managing fire and water, together with the magic of the rainbow, as she guards and cares for the Mazatec mountains.”[2]

GEOGRAPHICAL DISTRIBUTION

The natural growth of *Salvia divinorum* is confined to Mazatec country and the immediately contiguous areas of Cuicatec and Chinantec in Oaxaca State, Mexico, but the plant is also known and used elsewhere. **(Image 3)** The *Salvia divinorum* plant is native to Mazatec areas of the Sierra Madre Oriental mountain range. It grows naturally in tropical rainforests at altitudes ranging from 300 to 1,800 meters, or approximately 1,800 to 6,000 feet.[3] This limited geographic habitat ranks *Salvia divinorum* among the rarest of psychoactive plants; despite its natural scarcity, the plant is not rare, for it is reproduced by cuttings: *Salvia divinorum* is cultivated worldwide.

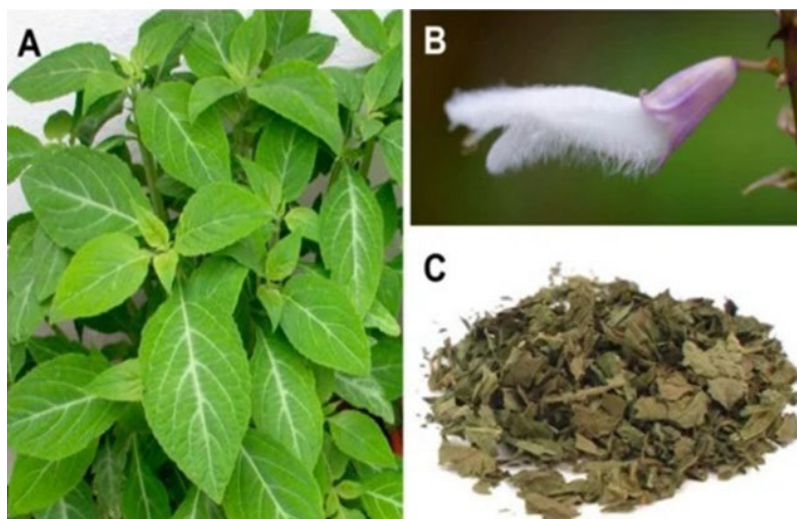


IMAGE 2

Leaves and flowers of *Ska Pastora* (*Salvia divinorum*).[4]



IMAGE 3

Map depicting in blue where *Ska Pastora* naturally grows, an area including Mazatec and Chinantec territories.[5]

PRIMARY SOURCES AND EVIDENCE

The ancient Nahuas (Aztecs) knew a plant called *pipiltzintzintli*, meaning “the purest little prince” in the Nahuatl language, and this could be *ská pastora*. Stored at the National Archive in Mexico City, the Catholic Church has Inquisition files from the years 1696, 1698, and 1706 that mention a plant named *pipiltzintzin*, a name closely resembling the Nahuatl spelling of *pipiltzintzintli*. These files hint at the sacred plant’s intoxicating effects, but the identity of the plant in these records has not been conclusively proven.

Richard Evans Schultes and Albert Hoffman,[6] as well as Mercedes de la Garza, [7] hypothesize that *pipiltzintzintli* is *Salvia divinorum*. However, José Luis Díaz has challenged this hypothesis. Based on the work of Friar Antonio Alzate (1772), Díaz argues that *pipiltzintzintli* is cannabis imported from Asia that was used as hemp and also consumed for divination purposes.[8] According to Gonzalo Aguirre Beltrán, “the Inquisition archives mentioned a cultivated plant that causes hallucinations. It is dried and drunk diluted in water. They said bad things and talked nonsense with it.”[9] The plant was used by Native Mesoamericans to diagnose illnesses, and the Holy Inquisition forbade its use; Beltrán explains that those who carried the plant as an amulet were persecuted.[10] However, no researcher has conclusively identified the *pipiltzintzintli* plant.

Historical and ethnographic research on *ská pastora* in contemporary Mexico dates back to 1938, with the work of anthropologist Jean Bassett Johnson, who recorded the use of *Salvia divinorum* among the Mazatecs in Oaxaca.[11] Ethnobotanical study of *Salvia divinorum* use among the Mazatecs documents their close and extensive relationship with the plant and the historical continuity of *Ska Pastora* being used therapeutically and for divination.[12]

It is important to remember that contemporary ritual practices of the Mazatecs, and many other Mesoamerican cultures, reflect a spiritual synergy that combines elements from Mesoamerican cosmology and the Catholic worldview, just as the name “*ská pastora*” combines a Mazatec word with a Spanish word.

INTERPRETATION

To better understand *ská pastora*'s social and cultural significance, it is necessary to explain the plant's healing, divination, and creative uses.

For centuries, Mazatec healers, known as “*chotaj chinej*,” have long known about *ská pastora*'s therapeutic properties. According to the *chotaj chinej* María Sabina: “When I am in the time that there are no mushrooms and want to heal someone who is sick, then I must fall back on the leaves of *Pastora*. When you grind them up and eat them, they work just like the *niños*. But, of course, *Pastora* has nowhere near as much power as the mushrooms.”[13] The Mazatec people broadly consider *ská pastora* to be a deity and also a female healer, and it is necessary to listen carefully to her. Another *chotaj chinej*, Julia Aurelia Palacios, states that “You have to chant the voice of the leaf.”[14] It is necessary first to listen and then to try to chant the visions or the auditory images related by the voice of the *ská pastora* plant. This synesthetic process combines visual and hearing experiences with speaking.

Divination is closely associated with *ská pastora*. *Salvia divinorum*, its botanical name, can be translated as “sage of the diviners,” reflecting this long association. Divinatory uses for *ská pastora* are also found in healing rituals. The *chotaj chinej* healers and their patients are required to be attentive to the “voice of the leaf”—in Spanish, “*la voz de la hoja*” —that will make understandable the revelations that occur during the visionary experiences engendered by *ská pastora*. A *chotaj chinej* will transform visions into songs; through these songs, the patients will know the cause of their illnesses.

Mazatec divination using *ská pastora* is not limited to healing rituals; it can be used quite broadly to gather information. “When it is a question of a theft or a finding a thing that is lost, a *curandero* (curer, folk healer) listens to what is said by the man who has consumed the *Salvia divinorum* plant, and the facts about the theft or the thing lost are disclosed.”[15]

IMPLICATIONS

Ská pastora's biological effects on humans pose problems for psychedelic research. Its principal psychedelic chemical cannot account for its visually oriented effects.

Salvia divinorum's psychedelic principle is the chemical salvinorin A, which operates differently from other psychedelics. Salvinorin A is an active chemical substance that works through the kappa-opioid receptors in the brain instead of working through the serotonin 5HT_{2a} neuroreceptors commonly associated with psychedelics such as *Psilocybe* mushrooms, peyote, ayahuasca, or LSD. The presence of salvinorin A in *ská pastora* creates a range of potential therapeutic properties for antidepressant, analgesic, and drug-abuse attenuation effects due to salvinorin A's dopamine-release inhibitory capacity. [16] But these kappa-receptors being affected cannot account for the visual effects of *ská pastora*, requiring further research, mainly into the ways it activates neural networks; its visual effects must have further causes than salvinorin A.[17]

The most well-known cultural use of *ská pastora* is divination for healing purposes, but creative and aesthetic uses are also registered among Mazatec visionary artists, who reinterpret their ancient cultural heritage through a visual language that broadens the scope of *ská pastora*'s symbolism and cultural applications. Visual experiences are why *ská pastora* is ritually used as a source of knowledge. That knowledge is not a series of hallucinations. Mazatecs use *ská pastora* to achieve specific insights, not to undergo flights of illusion.



IMAGE 4

Illustration of *Salvia divinorum*. **18]**

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