

# **Smoke of Ethnobotanical Plants used in Healing Ceremonies in Brazilian Culture**

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## **Introduction**

It is believed that human beings have always interacted with plants. Surely the first men to inhabit our planet, even their four footed walking ancestors, used the potential of plants for feeding, medicines, clothing, shelter, dyeing, transportation and ritualistic articles. Simpson and Ogorzali (2001) have indicated that the relationship between man and plants was set before the human condition, owing to the fact that plants were used by our ancestors.

The primordial man, who depended on nature to survive, discovered his natural medicines consciously through observation and empiric experimentation (Balick and Cox 1996, Di Stasi 1996, Heinrich et al. 2004). Balick and Cox (1996) affirm that once we can extract multiple resources from vegetables plants, more so than animals, can be the material basis for cultural development in the majority of the Earth's population.

The oldest archaeological data uncovered supporting the theory on the use of medicinal plants was found at Shanidar IV – a flower burial in northern Iraq where several species of pollen were discovered. At this archaeological site, which goes back to the Neanderthal man dating more than 50,000 years ago, seven vegetable species were found that are still used as medicines in Iraq today (Solecki 1975). While it cannot be assumed that the use of these plants were medicinal, there is evidence pointing towards this (Heinrich et al. 2004). A curious detail, which reinforces the idea of the medicinal use found from these species, is that there was as much dry material as ashes suggesting that the plants were not only there to be burnt to produce fire (Leroi-Gourhan 1975). This may be the first ancient historical record of burning plants for a purpose other than fire production.

The first written document of common ground registering the medicinal use of plants is *Pen Tsao* canon, by the Chinese emperor Shen Nung. This document dates back to the 3<sup>rd</sup> millennium of the ancient era and its contents embody the use of 250 plants (Balick and Cox 1996, Simpson and Ogorzali 2001). Once again in the East, the Indian book of *Vedas* – *Atharva Veda*, containing information on over 1000 medicinal plants, was written about 1,000 B.C.E. (Zimmer 2005). A later article including both medical and pharmaceutical knowledge relating to plants, Ebers Papyrus, is the main document from ancient Egypt, dating B.C.E.. The document opens with the sentence “*Here begins the book on the preparation of medicine for all parts of the body*” (Haas 1999, Heinrich et al. 2004).

In 4<sup>th</sup> century B.C.E Greece, Aristotle’s disciple, Theophrastus, who was devoted to the study of medicinal plants, left writings on this subject (Balick and Cox 1996). During the first century of the common era, the Greek Pedanius Dioscorides produced the work *De Materia Medica*, which influenced medicine for the following thousand years, and described more than 600 types of plants (Balick and Cox 1996, Schulz et al. 2002, Heinrich et al. 2004). Nor can one forget Avicenna (980-1037 C.E.) who, after the fall of the Roman Empire during the Middle Ages, emerged with the first Arabic knowledge in his treatise *Al Qanoon Fil Tib*, which mentions the therapeutic use of smoke (Mohagheghzadeh et al. 2006).

Nowadays, few studies focus on the medicinal use of smoke, as Mohagheghzadeh’s et al. (2006) review, while burning aromatic plants, inhalation and simply standing close to smoke are practices observed in several human cultures throughout history, which ascend to religious and healing practices (Lewington 2003). It is important to note that in human cultural development we can often observe a link between cosmogonic myths and myths of medicinal origin (Eliade 2008), setting the relationship between religion and cure. In those cases, the purifying power of smoke is quite clear. Nevertheless, it was through the Egyptians that the act of burning aromatic herbs became acclaimed – with famous Egyptians perfumes, oils and incenses. The word ‘perfume’ comes from *per* (through) *fimum* (smoke), indicating that this use begun with the burning of aromatic plants (Lewington 2003). In Egypt, “aromatic woods and resins were burned to produce scented smoke that would carry offerings or entreaties to the gods” (Simpson and Ogorzali 2001).

The natural occurrence of fire could be seen by humans, which later led to the burning of aromatic plants for a purpose. The ritualistic use of smoke can be understood through the symbolism of this subtle matter – smoke always rises to the heavens, the abode of the gods. Eliade (1991) describes the ‘ascension symbolism’ found in the various human cultures

(ritualistically represented by stairs, trees, ropes, etc.) as "self-elevation of the human soul and union with God", expressing the notion of transcendence. Many sacred houses, spaces where religious cults are held, have a hole to output smoke (chimney), representing the connection axis between the profane and the sacred worlds. The author claims that a "mystical experience always involves a heavenly ascent", something that more than justifies the use of smoke in both religious and healing rituals, situations in which we seek transcendence of the ordinary.

*“The smoke coming from the incense, along with the prayers of the saints, ascended before God from the angel’s hand.”* (Christian Bible, Revelation 8:4)

In Brazil, smoke is used ethnopharmacologically in healing rituals. As an example, Mercante (2006) observed in Barquinha, a Brazilian ayahuasca religious system, mediums smoking their clients with tobacco, along with imposition of hands, to perform a cleanup. The use of smoke in two Brazilian cultural practices: Shamanism and Umbanda will be discussed later.

### **Olfactory physiology**

Smell is the sense responsible for the perception of odors. In association with other sense organs that are connected to the central nervous system, smell helps us with multiple functions, among them the ability to recognize the environment and its dangers (Nef 1998).

While humans are capable of discriminating about 10,000 odors, animals have a great ability to distinguish the different odors of volatile chemicals. Data suggest that humans and mice have a similar basic structure of the olfactory system and olfactory receptors, which facilitates comparative studies. Research provides evidence that the animal’s olfactory system uses a combination of different olfactory receptors to discriminate and code smells. Thus, an olfactory receptor can recognize multiple odors and odor can be recognized by multiple receptors, working together to code the identity of various odors and to allow discrimination of a multitude of odoriferous substances (Malnic et al. 1999, Menini et al. 2004). However, after our receptors are desensitized they process about 50% after the first second (Guyton and Hall 2006), while after a minute we cannot perceive the smell in a conscious way (Nef 1998).

With the discovery of approximately 1,000 genes present in the olfactory receptors of mammals (humans have between 300 and 400 functional genes), the combined approach of molecular genetics, imaging, and electrophysiological have provided a major breakthrough in understanding smell and the structures involved with this system (Menini et al. 2004, Mombaerts et al. 1996).

Smell is closely linked to taste, being one of the specialized organs of the nervous system that are among the oldest structures in the brain. The olfactory cells are responsible for the olfactory sensations through the olfactory chemoreceptors, located in the upper nasal cavity, which respond to chemical-specific substances dissolved in nasal mucus (Van De Graaff 2003, Guyton and Hall 2006).

After connecting the scent molecules to olfactory chemoreceptors, nerve impulses are generated. The transmission of these olfactory signals to the central nervous system occurs through the relay to the olfactory bulb neurons, an expansion of brain tissue at the base of the skull consisting of mitral cells and olfactory nerve fibers which are related to specialized areas of the cortex. The olfactory pathways branch out into different structures with different functions: the medial olfactory pathway, a very old olfactory system associated with the hypothalamus and other regions that control behavior; and lateral olfactory pathway where the signals are directed to less primitive limbic structures, such as hippocampus (Guyton and Hall 2006).

Thousands of odors can be distinguished by the sense of smell, but only the volatile substances have odor and can be noticeable when airborne and inhaled (Nef 1998). Regardless of the basic mechanisms of chemical stimulation of the olfactory cells, the stimulating substances must be at least partially hydrosoluble to get through the mucus and partially liposoluble so that might not be repelled by the lipid constituents of the cell membrane (Guyton and Hall 2006).

The upper airways can also be used to administer drugs topically or to provide systemic action. The nasal mucosa presents a typical absorbing mechanism, which hydrosoluble drugs intranasally enter by passive diffusion in aqueous channels and have a quick increase in plasma concentrations peaks. The lung's permeability, at alveolar epithelium and capillary endothelium, is high for water, most gases, and lipophilic substances. However, there is an effective barrier to large particles, many substances of hydrophilic nature, and molecular ionic species (Washington et al. 2001). In addition, Gilman et al. (2003) points out that drugs

in aerosol form, when inhaled, have almost instant absorption into the blood, preventing losses from the hepatic first pass.

### **Shamanism practices**

According to Langdon (1996), shamanism is seen as a collective representation expressed and renovated not only by the shaman's actions and the rituals he performs, but also in the way other people think and deal both with their everyday life and the disease. This view allows us to understand the practice of shamanism as a manifestation of a social and cosmological institution present in many societies (Pérez-Gil 2001).

By having a wide geographical distribution throughout history, shamanism has essential elements for understanding humanity and clarifies many points about the process of healing and understanding of one's health (Money 1997).

Shamanism can be interpreted as techniques that enable shamans to access information that is not 'ordinarily accessible'. The term *shaman* corresponds to the social construction that refers to the individual responsible for serving the psychological and spiritual needs of the community (Krippner 2000). Thus, he not only has the role of a healer but also the intermediary between men and gods or spirits - defending their community from evil spirits, as well as suggesting the best places to hunt and fish, controlling atmospheric phenomena, facilitating deliveries, and revealing future events (Eliade 1998).

In Brazil, shamanism is practiced by indigenous peoples, bringing the number of nations currently using this practice to a total of 220 (ISA 2009). It is stated by Krippner (2007) that although there are reports of shamanic practices have existed for 500 years in Brazil, the essence of this ritual still remains a mystery. The author also reports that traditional indigenous shamanism is a very threatened practice.

In South America, as well as in other continents where it occurs, there are variations in the purpose of shamanism. There are groups where this ritual can heal, but it may also have malicious purposes. In other groups, shamanic techniques and witchcraft techniques are distinct (Barcelos Neto 2006). Whether shamanism is used for beneficial or malevolent purposes, it remains a real practice existing in various human groups around the world (Storrie 2006).

A lot of literature devoted to this practice in Brazil, supports the idea that shamanism is practiced primarily by men, the shamans. However, there is several ethnographic evidence of the existence of women in the role of shamans in certain Amazonic societies. These women harmonize the roles of mother and shaman, have social functions credited only to the men and reach the later stages of shamanic power (Colpron 2005). Among Krahô Indians the presence of one shaman woman among 58 men was observed.

As elsewhere, in Brazil the main function of the shaman is to cure diseases whose origin may be natural or supernatural. Regardless of the origin of the disease, the 'ecstatic journey' of the shaman is essential. The trance state is part of the treatment, being the means by which the shaman finds the exact cause of the disease and its effective treatment (Eliade 1998). To achieve this ecstasy state, various elements – dependent on the indigenous ethnic group – such as music, circular and repeated movements, plants, and other psychoactive substances, can be used by the shaman during the ritual.

Diseases of supernatural origin are marked by the escape of the soul or introduction of 'magical objects' in the patient's body (Ackerknecht 1985). Shamanic healing in these cases involves the use (by the shaman) of cigarettes made with plants which provide contact with their spiritual guides, whose smoke enables both the diagnosis and cure, often by extracting the 'magical objects'. The smoking process, which is the focus of this text, involves the use of different plant species. The most common species of plant used among the natives of South America are those of the *Nicotiana* species.

Although there is a striking similarity in the function and procedures of the shamans among the various indigenous groups in Brazil, this similarity does not occur in the process of becoming a shaman. The explanations are heredity, spirituality, vocational involvement, God's choice, and their own will followed by learning, among others. Laraia (2005) describes that the pathway to the Tupi-Guarani involves a gift to be discovered and developed by learning. The author adds that among the Assurinis of the Tocantins River, "there is a ritual called *opetimo* that aims to identify, among young people, those who have the potential to become a shaman. Between songs and dances, the candidate smokes a big cigar, swallowing the smoke. Those who get sick, feeling nausea or vomiting are discarded. Those who faint are chosen, so the shaman responsible for the ritual clamors '*Oman*', 'he died'. It is in 'dying' that one can travel to the other world, enabling contact with the ancestors".

Some studies conducted among Brazilian indigenous groups point to the plants used by shamans. A review of plants indicated by 26 ethnic groups for disorders of the central nervous system, performed by Rodrigues et al. (2006), shows 25 plants indicated to the hallucinogen category, many of which are utilized for shamanic practices. These plants work by supposedly altering the perception of the shaman in order to facilitate contact with the spiritual world, they are also used for the ritual of cure and for their therapeutic function. Among them are: *Anadenanthera peregrina* (L.) Speg., Ayahuasca (*Banisteriopsis caapi* (Spruce ex Griseb.) and *Psychotria viridis* Ruiz and Pav.), *Mimosa hostilis* (Mart.) Bent., *Virola elongata* (Benth.) Warb., *Nicotiana tabacum* L. and *Theobroma subincanum* Martius. Kerr (1970 *apud* Camargo, 2005/2006) reports the use of a long pipe by Kayapo Indians. The substance used with the Kayapo pipe is a combination of tobacco (*Nicotiana tabacum* L.), peanut leaves (*Arachis hypogaea* L.), ginger (*Zingiber officinale* Rox.), pigeon pea (*Cajanus cajan* (L.) Mill.) and to improve the odor and reduce the toxicity they add mashed cumaru leaves (*Dipterix odorata* Aub.). The Wauja have three shamanic experts: *yakapá*, *pukaiwekeho e yatamá*. The last one has the function of relieving pain by using the tobacco smoke (Barcelos Neto 2001, 2006). For the Kaingang, ‘cure’ is a ritual practice, where through herbal baths, smokes, and ashes one can obtain powers of nature (Silva 2002).

Epidemics by inter-ethnic contact is also seen to be "caused by the smoke produced by burning of things belonging to non-indigenous". According to Smiljanic (1999 *apud* Vidille, 2006), "through this smoke, invisible by ordinary people, come many cannibal spirits (*xawararibë*) that devour the vital principle of people". Vidille (2006) explains that in the view of Ianomãe Indians, for whom the smoke, besides having a curative role, is linked to the disease process, what these people feel is due to reversals in the balance of the cosmos (this *cosmos* consists of paths and forests through which superhuman beings transit).

## **Tobacco**

*“Shamanism, whether used for beneficial or malevolent, is a very real presence in the world. It does not exist as part of a field of extraordinary experience and is not seen as belonging to an isolated sphere of practice. Everyone has a shamanic aspect, “ho”, and all have direct access to the shamanic ambient through their dreams, the raw material of shamanism. At night, before going to bed, all adults compress a strong mix of prepared tobacco between the gum and lower lip, so that the dreams are more intense.”* (Storrie 2006).

Plant species of the Solanaceae family from the genus *Nicotiana* are, without doubt, the most widespread and commonly used plants in shamanic rituals of South American Indians. There are several forms of tobacco use by participants of the rituals such as: chewing, drinking, licking, enema, snuffing and smoking (Cooper 1987, Wilbert 1987).

In addition to being an essential element of magic and religion amongst the Indians of South America, tobacco goes through similar procedures among shamans such as: rolling it, lighting it, smoking it, and having a smoke to the heavens and spirits (Camargo 2005/2006).

The practice of smoking tobacco is performed by both sexes of various ages in rituals, board reunions, singing, and births, amongst other situations. This is easily observed when looking at the table on methods of use of tobacco in Wilbert's book (1987), where, of the 289 indigenous peoples of South America, only 55 do not use tobacco in the smoked form. This is, for sure, the most 'sacred' plant of the continent. Eliade (2008) reports that "the man of archaic societies tends to live as possible in the sacred or very close to sacred items." He also goes on to say "this is understandable; for the 'primitive' the sacred is equivalent to power and, ultimately, the reality par excellence."

The act of smoking tobacco by the Indians along the Brazilian coast is documented by André Thevet in 1557 when he contacted the Tupinambas, an ethnic group that inhabited the coastal area of southeastern Brazil and used smoke in recreation rituals. In 1578, Jean De Léry (1951) confirmed the observations of Thevet saying that the Tupinambás spent three to four days without eating anything, just smoking and using tobacco; the women never used tobacco.

In a review conducted by Rodrigues et al. (2006), tobacco (*Nicotiana tabacum* L.) was included under the category hallucinogen since it was considered psychoactive. Schultes (1984) explains that tobacco is definitely psychoactive in any method of use; the enigma remains as to how, under which conditions and in various methods of use, *Nicotiana* can have strong psychoactive effects in aboriginal societies – providing contact with the supernatural – since this effect is not observed outside of these contexts. A possible explanation could be due not only to the pharmacological action of this plant, but also to other substances present in the cigarette, in a synergistic action. Some communities in the Brazilian Amazon use the inner bark of *tauari* (*Couratari* sp.) to wrap the tobacco in a cigarette form. Maybe the substances present in this and other plants utilized to wrap the cigarettes act synergistically



with tobacco. Another hypothesis is that the tobacco species used in the past by American Indians was *Nicotiana rustica* L., which possesses greater presence of nicotine and other alkaloids, and could increase its effect (Ritz and Orth 2000). In Brazil, as reported by Wilbert (1987), the most commonly used species is *Nicotiana petunioides* (Griseb.), Millan, although *N. rustica* L. and *N. tabacum* L. are also generally used in South America.

### ***Presence of smoke in shamanic rituals of two Brazilian indigenous ethnic groups***

Fieldwork carried out in Brazil by two of the authors, between the ethnic groups Guarani (N. Scalco) and Krahô (E. Rodrigues), observed the use of smoke in rituals and its role in the process of shamanic healing.

### **Guarani Indians**

The Guarani people occupy southern South America in the boundaries of Brazil, Paraguay, Uruguay and Argentina. Because they lived near the coast in the Atlantic, they became some of the first ethnic groups to be influenced by the Europeans who arrived in that region in the early sixteenth century. Currently inhabiting the mid-west, southeast, and southern parts of Brazil in addition to those countries previously mentioned, they preserve their language Tupi-Guarani, for its cosmological and spiritual importance (Clastres 1978).

Since the first contact of the Europeans with the Guarani people, the use of tobacco smoke was observed, drawing the attention of naturalists and travelers who described this practice in their work (Ferri 1980).

Considered a sacred plant for these Indians, tobacco is the only specimen smoked from the elderly to children. Currently, it is used in the form of a 'smoking rope', where the leaves of *Nicotiana* sp. are collected and distributed in piles to dehydrate and when droughts are braided to form a rope. This is cut into very thin and small pieces that are rubbed between the fingers to be separated. This is then placed in *petynguá*, a kind of wooden pipe with a coal on top and then smoked.

The Guarani people see this act as a way to raise their spirit to *Nhanderu*, the creator of the world in the Guarani cosmology, and therefore to establish an approach to the spiritual world. This feature makes *Nicotiana* the main genus plant used in healing rituals of this community. This ritual is conducted by the shaman (known as *pajé*) and occurs primarily

within the *Opy* (house of prayer). The sick person is brought to the center of the *Opy*, which is a bamboo and feather structure symbolizing the presence of elements of the spiritual world, opposite the ‘altar’, where he sits and takes off all the clothes from the upper body. The shaman blows tobacco smoke by the *petyngúa* around the patient. The smoke is directed to a region, signaling the place where the disease is concentrated. Then, seeing this signaling, the shaman, sucks the ‘disease’ with his mouth and inside his body begins a struggle between his own spirit and the spirit of the disease. This fight makes the shaman lose his balance and he needs to be supported by other indigenous people – then he begins to tremble and drool. The battle ends with the materialization of the disease within the body of the shaman, taking form of a small stone that is thrown out and smoked with tobacco smoke.

This shamanic ritual occurs whenever necessary in Guarani villages, in the *Opy* and at night. It is interesting to note that even without the necessity of healing, the village meets every night in the *Opy*, where they sing, smoke *petyngua*, and drink tea of erva-mate (*Ilex paraguariensis* A. St.-Hil.). This ritual occurs as an acknowledgment, requesting protection and communication with the spiritual world, especially with *Nhanderu*.

### **Krahô Indians**

The Krahô people inhabit the central region of Brazil, an area of cerrado savannahs. Their history of contact with the non-indigenous people is about two centuries old and their language is Timbira.

Among the Krahô Indians, shamans are known as *wajacas*, who are recognized as the keepers of the knowledge of herbal remedies and healing processes, for which they receive instructions and help from their respective *pahis* (spiritual guides, generally represented by the spirits of animals, plants, minerals, objects or even the deceased). He may heal or kill another, acting as a *wajaca* or a sorcerer. Each *wajaca* is a specialist in one or more illnesses, such as fever, diarrhea, snakebites, those brought by the wind, or even spells cast by other *wajacas*. The healing process involves two parts: the first is a ceremony conducted by the *wajacas*, mainly at night; during this practice they smoke tobacco, marijuana, or some other native plants. The act of smoking could help in communicating with the *pahi* or in furnishing more power at the moment of the healing, according to the interviewees. The exhaled smoke is blown at the patient, spreading out the illness so it can ‘be more clearly diagnosed’ or, even, to ‘collect’ the illness which is spread throughout the body of the patient to a single

point so that it can then be ‘aspirated’ by the shaman, ‘removing’ the illness from the patient's body. In the second part, after the ceremony, the *wajaca* chooses one or more plants to be utilized in the treatment and returns several times to the patient’s home to follow up on the effects of the remedy administered (Rodrigues and Carlini 2005).

It was observed that 23 plants were used in these healing ceremonies; the preference for each of them depends on the *wajaca*, although there is a general preference for marijuana (*Cannabis sativa* L.), known among the Krahô as *iamhô*. Before the introduction of this plant, however, the *wajacas* used the other 22, including: tobacco, *togrê hô*, *pênjarahihhô*, *cumxê*, *tingui*, *carãjatxy* and several kinds of *ahkroré*, *ahkrô*, *mãputréhô*, *pjejapac* e *caprãnkohiréhô*. A special pipe called *côt*, made of buriti straw (*Mauritia flexuosa* L. f) is used for smoking these plants, however, some prefer to use cigarettes made with paper.

The Krahô explain their preference for marijuana because of its safety compared to the other native plants of the cerrado savannas. They say that marijuana can be consumed in high doses, unlike the other ones where there is not much knowledge of their effects in high doses or chronic use. For the Kraho, the 13 native plants are dangerous because ‘it takes long time to exit the body’, so they need to be careful with their consumption. If the doses are frequent or exaggerated they could have hallucinations. Furthermore, marijuana, known as the ‘queen’, can be consumed freely by most of the Krahô, as they feel ‘it is eliminated quickly from the body.’

All these plants can also be used as cigarettes, in social contexts beyond shamanism. However, in a few cases, there were reports that marijuana could not be consumed by some individuals of the Krahô who were considered ‘especially sick’, as the misuse of alcohol associated with marijuana could trigger ‘madness’ in these people, as reported.

## **Umbanda religion**

The slave trade of Africans has profoundly marked Brazil’s history. More than four million men, women, and children were estimated to have landed here between the sixteenth and mid-nineteenth centuries. Despite the repression, their contribution to music, religion, food, dance, and language is outstanding in Brazilian culture (IBGE 2000).

This trade subjugated human beings, who were transported by ship from the African continent to America in unsanitary conditions, forced to change their living habits and perform hard labor for their ‘masters’ (landowners who bought them as slaves in Brazil).

These factors are largely responsible for the poor health of slaves, eventually leading to diseases as there was no access to medical care (Pôrto 2006).

Umbanda, a Brazilian religion widely practiced in this area, was founded by the Africans who arrived here as slaves. Historically, the factors that contributed to the construction of Umbanda in Brazil are the religions of African origin (Voodoo and Candomblé); Catholicism, brought to Brazil by the Europeans; indigenous elements and Allan Kardec Spiritism (Camargo 1961, Di Paolo 1979).

According to the 2000 census, it was estimated that there are over 397 thousand followers of Umbanda living in urban and rural areas of Brazil (IBGE 2009). But these numbers are underestimated. Many followers of African-Brazilian religions do not declare their religion as historically Catholicism was the only tolerated religion in Brazil, thus making it a factor for social inclusion. Even with the political changes in the nineteenth century, when there was more tolerance to religions other than Catholicism, they continued to proclaim themselves as Catholics (Prandi 2004).

The differentiation of all the elements are is clear within the umbandistic syncretism. For example, Catholicism, the official and compulsory religion of colonization, was imposed on Africans and Indians by the Jesuit catechism, and according to Bastide (1971) "-could not stand without reconciling more or less with Christianity". Catholicism contributed with its saints and prayers for the formation of Umbanda (Silva 2000).

From the indigenous cults, Umbanda inherited interpersonal relations which remained as in the past and formed a harmonious group "like a large tent" in devotion to the spirits of 'caboclo' – spirits of the Indians ancestors who after death revolutionize Umbanda religion (Ortiz 1978, Di Paolo 1979).

European Spiritism brought the need for standardization, coding, and reinterpretation to Umbanda. The intellectuals of Spiritism, which established the form to Umbanda, were adding explanations of the spirit world, ideas about reincarnation, mediumship theories about the 'semantic extension of the master' instead of 'healer', and even the name of the spirit manifested in the medium (Camargo 1961, Ortiz 1978, Monteiro 1985).

Africans of diverse ethnic and tribal groups, who met each other in Brazil, away from their homelands and cultures, aggregated all these elements present in the rituals. To survive, these groups hold on to cultural background, relying on their beliefs and values, but being always permeable to changes from contact with other groups (Cancone 1987).

The coexistence and interdependence amongst the physical, spiritual and psychological dimensions of health is genuinely addressed with knowledge. Each African-Brazilian religious tradition uses its various features or combinations of treatment. The use of herbs, baths, diets, advice, sets of shells, as well as initiation rites observed as treatments in Umbanda may be associated with conventional therapies (Da Silva 2007, Alves and Seminotti 2009).

Western doctors and other health professionals who work especially in sub-Saharan Africa face different cultural realities that limit their medical intervention. To these western professionals, generally, anthropocentric view predominates over the elements of nature. African societies are aware of the physiological and natural causes of phenomena, but understand the factors of life and death, health and disease, as originated by man and his culture, this being their first and fundamental explanation. The imbalance of these factors may be negatively affected by: the services of a sorcerer, failure or moral transgression, punishment of the gods (or associated with these), (Table 6.1) and the ancestors. The prosperity and good health are seen as increasing the *aché*<sup>1</sup> (Munanga 2007).

Table 6.1. Relationship between gods and some health problems according to Ketu Candomblé's nation (Da Silva 2007)

| <b>Symptoms, disorders and diseases</b>                | <b>Gods / Goddesses</b> |
|--|-------------------------|
| Epidemic diseases (smallpox, AIDS) and skin diseases   | Obaluaiê                |
| Abortion, female infertility, menstrual problems, etc. | Iemanjá and Oxum        |
| Impotence and male infertility                         | Xangô and Exu           |
| Eyesight problems                                      | Oxum                    |
| Asthma, shortness of breath and respiratory problems   | Iansã                   |
| Emotional disorders                                    | Oxossi and Ossain       |

<sup>1</sup> According to umbandists *aché* is “life force”, “good energy”.

|  |                         |
|--|-------------------------|
| Disorders of liver, gallbladder and stomach ulcers | Oxossi and Logun-Edé    |
| Obesity  | Iemanjá, Oxum and Xangô |

Umbanda is a religion characterized by a state of trance, manifested according to Cancone (1987) through possession. A trance can be defined as a state of ‘altered consciousness’ that allows behavior ‘manifestations’ coming from the deeper strata of the ‘personality’ (Bello 1960), but it does not explain its ritualistic presence.

*"It is clear, therefore, that the possession trance is part of a ritual that can only be interpreted over its own and entire universe." (Cancone 1987)*

In Umbanda, the elements of nature are decoded in a harmonious connection - the elements of water, earth, fire, and air are represented in the rituals. Water plays a magnet role for negative vibes; the earth is represented by various ritual uses, being ‘taken as the space limit’; the fire is represented by heat, flames and light, symbolizing the warmth of the divine and cosmic energy; finally, air is one of the most important elements, being represented by the smoke of a ‘*defumador*’ – an ambient smoker – (Fig. 6.1), pipes and cigars, and even the burning of gunpowder. These smoking elements are used to "produce smoke, that has the magical power to clear the psychic world, removing negative entities<sup>2</sup>, attracting the positive ones, protecting against the *mau-olhado*<sup>3</sup> and opening the ways" (Lima 1979). Each element has its function and symbolism within the rituals of Umbanda, especially in healing rituals, where there are herbs, poultices, teas, baths, and *defumadores*.

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<sup>2</sup> Entity, to Umbanda, is a spirit incorporated by mediums.

<sup>3</sup> Mau-olhado, literally “bad eye”, is a folk belief that someone’s envy can cause misfortunes or bad luck.



Fig. 6.1. *Pai-de-santo* smoking with a *defumador* at Centro Caboclo Ubirajara e Exú Ventania, August 2008.

These *defumadores* are very diverse, from the industrialized ones, which can be purchased at specialized Umbanda stores, to the ‘fresh’ ones, prepared from dried herbs burned with charcoal. The herbs most commonly used in this context are: rosemary (*Rosmarinus officinalis* L. Lamiaceae); basil (*Ocimum basilicum* L. Lamiaceae); rue (*Ruta graveolens* L. Rutaceae); lavender (*Lavandula officinalis* Chaix Lamiaceae); *jurema* leaves (*Mimosa hostilis* (Mart.) Benth. Fabaceae); fennel (*Pimpinella anisum* L. Apiaceae); eucalyptus leaves (*Eucalyptus* sp. Myrtaceae); Indian clove (*Syzygium aromaticum* (L.) Merr. and L.M. Perry Myrtaceae) (Lima 1979).

It is important to emphasize the sacral role of plants in Umbanda rituals, since *in* them or *through* them devotees "will seek solutions to the problems that afflict them". It can still be said that the importance given to the plants in Umbanda is such that it would not be possible to admit the existence of this religion without them (Camargo 2000, 2005/2006).

All Umbanda rituals begin by smoking the ambient with a *defumador*. The smoking is always done by the ‘boss’ of the yard, the *Pai* or *Mãe-de-santo* (literally ‘saint’s mother’ or

‘saint’s father’), who smokes the place from rear towards the front door – never crossing the diagonal. After the smoking of space, the smoking of those presents begins. This is done with respect to the religion’s hierarchy, whereby the senior mediums are the firsts to be smoked, followed by the newer mediums, and lastly the ‘assistance’, as the participants are known. Therefore, without the presence of ‘smoke’ by the *defumador*, the ritual doesn’t begin.

Other common objects used are *pitos* (cigarettes), pipes, and cheroots, all having the task of eliminating harmful environmental fluids that are understood to be negative energies. In Umbanda, cigars are used by entities known as *caboclo*, who smoke a lot during the religious sessions, while the pipe is primarily used by *preto-velhos* - the spirits of former slaves (Ortiz 1978, Lima 1979).

*“Why smoke has so Aché? The great strength of the magic smoke relates with the fact that it represents releasing and immediate dissolution in the surrounding breath - the air element. This allows you to act as an intermediary between the world of form and formless world, engaging and invisible, and becomes a magical agent, able to transform into effective result the intention of the released smoke.”* (Lima 1979)

At the umbandistic literature *defumar* (pass the smoke on the environment and on the participants) is defined as ‘a ritual of high magic’, where its main function is to ward off evil spirits, which are represented by the smoke itself. It is believed that the burning of herbs is designed as an act of great magic, being directly related to the forces of nature and the sacredness of plants. The smoke produced by burning plant "brings, by evocations, a high vibration sense, because through that smoke magical powers and high irradiation of spiritual flow are manifested". Still, according to Umbandists, those seeking peace and tranquility "should constantly be smoking their homes" (Pinto 1975).

As Umbanda is a syncretic religion, we can find the ritual use of *defumadores*, tobacco, and incense in the different religions that were connected to form it.

Silva (2000) shows that at the time of colonization in Brazil, Catholicism allowed the presence of the aromatic smoke of incense, cleansing the altar consecrated with relics of bones and of the clothing of saints "as if there was an open and privileged access to the supernatural world". For the Indigenous, the smoke is derived from burning tobacco and also assumes an important ritual role, as noted above.



This legacy can also be seen in the rituals of *Catimbó*. In this northeastern Brazilian religion, that mixes African and Indigenous elements, tobacco “is a sacred plant and its smoke is the cure to diseases”. In *Catimbó* there is a unique way of smoking the pipe, it is used in an inverted position, the illuminated part is placed in the mouth and the smoke comes out the tube of the pipe. This way of smoking is found today in Umbanda, which is not surprising seeing that the contact with *Catimbó* brought forth a movement which pioneered the way for Umbanda. This syncretism inherited the cure by smoking the environment (Bastide 2001).

But the power of smoke goes beyond all that. In Umbanda it is believed that smoke magic is ‘an immediate dissolution of the surrounding breath’. It acts as a medium between ‘the form world and formless world’, a connection between natural and supernatural worlds. This is an extremely important idea in religions with the presence of trance, such as Umbanda and other African-Brazilian religions.

In general, the smoke in Umbanda healing rituals is used for communication with the supernatural. It seeks a cure for the ills of the soul and body, thus seeking to dispel the ‘negative energies’ (the supernatural and negative force that are acting on the individual). For this ‘magic cure’ treatment to occur, one must be familiar with the concepts and interpretations of disease within this religious system.

*“The disease becomes a significant factor only when associated with the idea of a general negativity, with the concept of a disorder that goes beyond the individual body to encompass social relations and the organization of the supernatural world. With this broad negativity that magical thinking seeks to understand and neutralize...”* (Monteiro 1985)

And it is acting against the ‘negativity’ that, according to the Umbandists, smoke acts in the healing process. Below is a music sung in the rituals of Umbanda during the time of smoking by the *defumador*:

*“Smokes with jurema herbs*

*Smokes with rue and guiné...*

*Rosemary, Beizoim and lavender;*

*Lets smoke faithful sons!*

## Smokes...”

Another quite common element is gunpowder, burning when necessary, forms a dense curtain of gray smoke, with the same function of cleaning the environment and the body.

However, it is observed that with the constant revision of Umbanda, some elements and rituals are being simplified, such as smoking ritual by the *defumador*. With the presence of Spiritism, smoke is seen as a kind of primitivism, thus being eliminated little by little (Camargo 1961, Lima 1979, Silva 2000).

The smoking occupies an essential place within the Umbanda religious framework. As observed in field trials, smoking has the function of calming people who participate in the ritual.

Rodrigues et al. (2008) observed the use of a cigarette in a healing context known as *tira-capeta* (removing the devil) in an Umbanda practicing quilombola<sup>4</sup> community named Sesmaria Mata-Cavalos, in the state of Mato Grosso do Sul. Mr. Cezário, the former spiritual and political leader of this community, reported that the cigarette was smoked when people with headaches and malaise sought blessings. The healer blew the smoke up the patient's body instead of blessing them, helping the person to calm down. The cigarette can also be smoked by the patients to ‘fortify the head’, prevent flu, sinusitis, and to sleep. The cigarette is composed of nine plants: ‘guiné’ - *Petiveria alliacea* L. (Phytolaccaceae), ‘eucalipto’ - *Eucalyptus globulus* Labill. (Myrtaceae), ‘alecrim-do-norte’ - *Anemopaegma arvense* (Vell.) Stellfeld ex de Souza (Bignoniaceae), ‘negramina’ - *Siparuna guianensis* Aubl. (Monimiaceae), ‘arruda’ - *Ruta graveolens* L. (Rutaceae) and ‘hortelã-da-várzea’ - *Hyptis cana* Pohl ex Benth (Lamiaceae), rhizomes of ‘caiá-piá’ - *Dorstenia asaroides* Hook. (Moraceae), the flowers of ‘cravo-da-Índia’ - *Syzygium aromaticum* (L.) Merr. and L.M. Perry (Myrtaceae) and finally, the skin of one bulb of garlic - *Allium sativum* L. (Liliaceae).

### Some plants used in Umbanda

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<sup>4</sup> Quilombolas are descendant of Afro-Brazilian runaway slaves living in hideouts up-country.

The following plants listed below are utilized as smokes during Umbanda therapeutic rituals. Although there are presented some data concerning its pharmacological activities, most of them were not observed by the inhalation route.

## **Rue**

Scientific name: *Ruta graveolens* L.

Family: Rutaceae

Origin: Originally from Europe / Mediterranean.

Geographic distribution: Over Brazil.

Curiosities: Since the ancient times, magical values are assigned to Rue. These values can be found even today and it is not uncommon to see a branch of rue behind the ear of even the most skeptical and gullible of people. According to Pio Corrêa (1926) rue is closely linked to Greeks and Romans history and is considered 'an all around cure' from diseases to 'getting rid of bad business'. According to the same author, rue can also be found to be associated with spells and superstitions from the African slaves in Brazil, and is still today considered for the people of this origin to be effective against *mau-olhado*.

Active principle: Rutin.

Ethnopharmacology: Childbirth and infertility (Lans 2007), memory (Adersen, et al. 2006), mental disorders (Stafford et al. 2008), abortive and emmenagogue (Pollio et al. 2008), contraceptive (Harat et al. 2007), anaphrodisiac, cough, fever, hysteria and otalgia (Duke 2009).

Pharmacology: Anti-inflammatory (Conway and Slocumb 1979, Atta and Alkofahi 1998, Ciganda and Laborde 2003, Raghav et al. 2006); anti-fertility (Kong et al. 1989, Gandhi et al. 1991); antifungal (Oliva et al. 2003); cytotoxic (Ivanova et al. 2005); anti-spasmodic, diuretic, sedative, anti-rheumatic and analgesic (Khouri and El-Akawi 2005); antitumor (Preethi et al. 2006); palpitations and heart protection (Seak and Lin 2007) and anti-arrhythmia (Khorri et al. 2008).

## **Guiné**

Scientific name: *Petiveria alliacea* L.

Family: Phytolaccaceae

Origin: Native (Amazon region, Africa and Tropical America).

Geographic distribution: Over Brazil.

Curiosities: Guiné is popularly known as ‘taming sir’, making a link with slave use, where it was a weapon against their masters. Slaves prepared ‘magic drinks’ that they administered to their masters in small doses over a long period of time to ‘weaken the brain’, so that their masters would enter starvation and die slowly (Camargo 2007). Other studies have also focused on the use of this plant in focusing the mind, as Rodrigues and Carlini (2004), who in a survey with *quilombolas* umbandists in the state of Mato Grosso, recorded this plant, which was included under the category ‘mess with your head’. Reinforcing this idea, a quote from Pio Corrêa (1952) says "it is considered toxic and will lead to imbecility, aphasia, and even death to those who consume it”.

Ethnopharmacology: ‘Wound Healing’ (Schmidt et al. 2009); ‘Kidney problems’ (Lans 2006); Used for snake bites, scorpion stings and success in hunting (Lans et al. 2001); Protozoan infections (Cáceres et al. 1998); abortive, antiseptic, aphrodisiac, snakebites, odont cavity, catarrh, depurative, diuretic, dysmenorrhea, emmenagogue, expectorant, fever, hysteria, insecticide, nerves, paralysis, birth, vermifuge, repellent (bats), repellent (insect), uterus, sedative, rheumatism (Duke 2009).

Pharmacology: Potential depressant and anticonvulsant (Gomes 2008); antinociceptive (De Lima et al. 1991, Gomes et al. 2005); anti-inflammatory effect and analgesic (Lopes-Martins et al. 2002); antimicrobial activity (Von Szczepanski et al. 1972); antimycotic (Malpezzi et al. 1994); antibacterial and antifungal (Benevides et al. 2001, Kim et al. 2005); anti-oxidant activity (Okada et al. 2008).

## **Alfazema**

Scientific name: *Lavandula cf. dentata* L.

Family: Lamiaceae

Origin: Exotic / European origin.

Geographic distribution: Over Brazil.

Curiosities: It is an extremely aromatic plant, and according to Pio Corrêa (1926) is "stimulating to the nervous system and the brain".

Ethnopharmacology: Phlegm and sore (Duke 2009).

Pharmacology: No data found.

## **Colônia**

Scientific name: *Alpinia cf. zerumbet* (Pers.) Burt and Smith

Family: Zingiberaceae

Origin: Exotic.

Geographic distribution: Over Brazil.

Ethnopharmacology: Sedative (Berg 1984).

Pharmacology: 'Behavioral changes in rats' (Murakami 2009); antihypertensive (Lahlou et al. 2003, De Moura et al. 2005); antinociceptive (De Araújo et al. 2005); Cardiovascular effect (Lahlou et al. 2003).

## **Melissa**

Scientific name: *Melissa officinalis* L.

Family: Lamiaceae

Origin: Mediterranean region (Europe / Africa).

Geographic distribution: Almost over Brazil.

Curiosities: According to Pio Corrêa (1974) is a medicinal plant 'common and universal', used against nerve diseases, and is also anti-spasmodic and anti-neuralgic.

Ethnopharmacology: Antiseptic, soothing, carminative, cosmetic, digestive, emmenagogue, fever, perfume, sclerosis, sedative, stomachic, stimulant, diaphoretic, tonic and spasmolytic (Duke 2009); obesity control (Lee et al. 2008); Alzheimer (Perry et al. 1998, Perry et al. 1999, Dos Santos Neto et al. 2006, Akhondzadeh and Abassi 2006).

Pharmacology: Antinociceptive (Guginski 2009); antioxidant (De Sousa et al. 2004, Marongiu et al. 2004, Mimica-Dukic et al. 2004, Pereira et al 2008); decreases shaking

(Ballard et al. 2002, Abuhamdah et al. 2008) anxiolytic (Kennedy and Scholey 2006, Kennedy et al. 2006); decreases the effects of stress (Kennedy et al. 2004); antitumoral (De Sousa et al. 2004) Alzheimer (Kennedy et al. 2003, Akhondzadeh et al. 2003); relaxing (Sadraei et al. 2003).

## **Manjeriçã**

Scientific name: *Ocimum basilicum* L.

Family: Lamiaceae

Origin: Exotic / Africa and Asia

Geographic distribution: Almost over Brazil.

Curiosities: Tradition says that the basil was found growing around Christ's tomb after the resurrection. Consequently, some Orthodox churches began to use it to prepare a kind of holy water, as well as sometimes planting it in pots beneath the altars of churches. In India, there is a belief that basil was imbued with a divine essence (Missouri Botanical Gardens 2009).

Ethnopharmacology: Cosmetics, fever, sore throat, emmenagogue, fungicide and coughs (Duke 2009); repellent (Seyoum et al. 2002, Erler et al. 2006).

Pharmacology: Bactericidal (Nguefack et al. 2004); mosquito repellent (Erler et al. 2006); antimicrobial activity (Viyoch et al. 2006); anti giardiasis (De Almeida et al. 2007); anti-inflammatory (Singh 1999a, 1999b, Benedec et al. 2007); antioxidant (Trevisan et al. 2006; Gülçin et al. 2007); anthelmintic (Asha et al. 2001); anti-ulcer (Singh 1999a).

## **Conclusion**

The use of plant smoke in healing ceremonies is not well described in scientific literature. In Brazil, the practice carried out mainly by indigenous groups in shamanism and practitioners of Umbanda points to different plants used in these contexts; exotic ones are predominate among Umbanda, since it is a religion created primarily by Africans, while in shamanism it is the Brazilian native ones that are predominate. It is interesting that in both of these groups who smoke the plant-made cigarette it is the curator who enters a state of trance and then acts beneficially on behalf the patient; all the while inhaling the smoke. The exception is the *tira-capeta*, used by a *quilombola* community, in which besides being used as mentioned above,

patients also smoke the plant in search of therapeutic benefit. All these uses indicate activity in the central nervous system of the plants in question, emphasizing the importance of more research in this area.

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