


Teaching Practices in Biology, History, and Geography, from Plants ritualistic and medicinal rituals used in Umbanda terreiro in southeastern Brazil

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ABSTRACT

The starting point of the present research is to know the medicinal and ritualistic plants of the Umbanda terreiro in São Mateus-ES. As this is an anthropological research, there is this starting point but the arrival point cannot be predicted. Umbanda is an Afro-American, and Afro-Brazilian, marginalized religion that underwent a process of Christianization when its practicing people arrived on Brazilian soil. Based on this, it is an “outside” cultural practice of Western Christian scientific knowledge, and it is also a marginalized reality. The specific objectives are: (1) To carry out a survey of plant species in the Umbanda terreiro; (2) Carry out a survey of plant species of a ritualistic nature; (3) Build a witness collection of useful plants from the Umbanda terreiro through exicatas, dried herbs and a live collection in pots; (4) Investigate the biological name from the common name collected, and the origin of the plant; (5) Develop interdisciplinary teaching practices in History, Geography and Biology from the knowledge collected; (6) Interview religious leaders of the Umbanda terreiro to learn about the plants used, common name, part of the plant used and how it is used. As methodological paths we will use the ethnography of school practice or anthropology of non-anthropologists for educational purposes; Malinowski's participant observation; Geertz's unstructured interviews; ethnographic reports and content analysis. For ethnobotanical work, the Hanazaki methodology will be used. For the preparation of teaching practices, the work will be based on Freire, Romão and Duarte-Silva.

Keywords: Afro-Brazilian culture, Afro-descendant populations, Africanities, Afro-Brazilian ethnic-racial relations, Ethnobotany.

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INTRODUCTION

The starting point of this research is to know the medicinal and ritualistic plants used in the Umbanda terreiro of São Mateus ES. As this is an anthropological research, one has this starting point but one cannot predict the point of arrival.

According to Roué (1997), the "ethnoscience" is the field of study linked to the natural sciences with the addition of the prefix *ethno*: ethnoecology, ethnobiology, ethnobotany, ethnozoology, ethnopharmacology, etc. Ethnoscience encompasses the areas of research that propose to study the semantic categories of "outside" Western scientific knowledge (ROUÉ, 1997 apud ROZÁRIO, 2018). The present work proposes to document the knowledge, which we admit here as scientific, of an Umbanda Terreiro. Therefore, a knowledge "outside" Western scientific knowledge guided by the Judeo-Christian religious tradition, scientific academia and Western culture as a whole. Positivist scientific knowledge meets the Cartesian scientific method of research, unlike the research presented here, which is referenced in the methods of Human Sciences and Ethnography of school practice or ethnography carried out by non-anthropologist teachers. The method of Ethnography of school practice consists of literature review, document analysis, and fieldwork (ANDRÉ, 2020).

That is why we ask ourselves if ethnographic work is a scientific practice? Foucault. (2008) argues that the contemporary anthropologist is not a scientist but a journalist of marginalized realities. Bawman (2001), a contemporary sociologist, goes further; According to him, with the information society, each and every citizen becomes a journalist from the camera in hand and the publication on the world wide web of the observed social phenomena, as well as their opinion about them.

Umbanda is an Afro-American and Afro-Brazilian religion, marginalized, which underwent a process of Christianization when its practicing peoples arrived on Brazilian soil. Based on this, it is a cultural practice "outside" Western scientific knowledge and it is also a marginalized reality. Some of the importance of documenting a marginalized reality is to give voice to that culture, another is to bring the culture closer to its non-practicing descendants, and finally, to combat racism and prejudice. Including other issues such as xenophobia, religious intolerance, in a syncretic country, but very Christian and conservative.

Secondly, the documentation of the reality of the Umbanda terreiros also provides very relevant scientific data on the knowledge about ritualistic and medicinal plants that are important to ethnopharmacology.

OBJECTIVES

(1) To know the medicinal and ritualistic plants of the Umbanda terreiro of Pedra D'agua for pedagogical purposes. (2) To carry out a survey of the plant species used in the Umbanda terreiro. (3)



Carry out a survey of plant species of a ritualistic nature. (4) To build a collection of useful plants from the Umbanda terreiro by means of exicatas, dried herbs and a living collection in pots. (5) Investigate the biological name from the collected common name and origin of the plant. (6) Develop interdisciplinary teaching practices in History, Geography and Biology based on the knowledge collected. (7) Interview religious leaders of the Umbanda terreiro to learn about the plants used, common name, part of the plant used and how to use them.

BACKGROUND

Combating racism, knowledge of the use of herbal medicines, bringing the science of the traditional Afro-Brazilian communities of São Mateus closer to the Scientific Academy of UFES, promoting an intercultural dialogue.

MATERIAL AND METHODS

METHODOLOGICAL PATHS OF ETHNOGRAPHIC WORK

From the 1980s onwards, the method of participant observation became more practicable and less criticized, i.e., the non-distancing of the researcher and the researched in ethnological practice (TADDEI and GAMBOGGI, 2011). In the same way, at the same time, *the recovery of the oral life history* of the researchers gained strength in Historiography, in addition to the traditional documents (SILVA, 2004). Based on this, it became possible to call ethnological research a work that consists of the researcher's experience and deep *ethnological immersion* in the researched group and *autoethnographic* works (ROZÁRIO et al. 2018; DUARTE-SILVA, CONCEIÇÃO and SALES 2019; CONCEIÇÃO, ALMEIDA and DUARTE-SILVA, 2020) when these ethnographies document veiled or marginalized realities.

Based on ethnological immersion and participant observation (TADDEI and GAMBOGGI, 2011), unstructured interviews will be conducted according to Geertz's structures, or dialogues with scripts (DUARTE-SILVA, CONCEIÇÃO and SALES 2019). These non-recorded interviews, so as not to inhibit the interviewee, will generate ethnographic reports that are dense descriptions of the realities and dialogues experienced that will be described in the results of the present work (ANDRÉ, 2020; DUARTE-SILVA, CONCEIÇÃO and SALES 2019).

THEORETICAL AND METHODOLOGICAL FRAMEWORK

This work consists of a case study whose methodology used was the ethnographic work, according to André's theoretical-methodological assumptions (2020). These are short-term works, carried out by non-anthropologists, or professionals from other countries. areas of science. They do



not have an ethnographic purpose in themselves, but are carried out in order to seek answers for the specific areas of the researchers in question

The ethnography of school practice was used in the present work for the purpose of solving problems in teaching practice, and subsidies for Environmental Education, Ethnobiology and Botany Teaching. However, the historical and ethnographic value of the data researched here transcended its utilitarian character, and will be compiled in this work, with a purpose different from the initial objective.

The methods used in the research were: review of scientific literature, fieldwork and document analysis (André, 2020). “A work can be characterized as ethnographic in education, when it makes use of the techniques that are traditionally associated with to the ethnography, i.e. participant observation, intensive interviewing and document analysis. The researcher approaches people, situations, places, events, maintaining direct and prolonged contact with them. How does this contact take place? First, there is no pretense of changing the environment by introducing modifications that will be experimentally controlled as in experimental research. Events, people, and situations are observed in their natural manifestation, which is why such research is also known as naturalistic or naturalistic” (André, 2020 p.25).

Participant observations in ethnography

In the present study, participant observation was chosen as a working method instead of structured and semi-structured interviews. The work presented here deals with participant observation, intense interviews and, in isolation, some unstructured interviews. According to Taddei and Gamboggi (2011) on Malinowski's line of research, participant observation acts on data that are difficult to collect through formal interviews:

"Malinowski realized that there is a research methodological problem related to the way certain issues are salient in the everyday thinking of members of a society, while others are not. There are things in our social existence that we don't talk about, and that's for a number of reasons. One of them is the fact that we internalize some forms of behavior in childhood and continue to repeat them in social life, in a habitual way, without paying attention to such behaviors. Another is that we learn to avoid talking about—or even thinking about—certain topics, such as taboo issues, even if events in some way related to such taboos are frequent. Malinowski realized that, by staying long enough with a certain social group, the researcher has the opportunity to observe behaviors and social events (such as certain rituals) that would hardly be mentioned in interviews" (TADDEI & GAMBOGGI, 2011).

Taddei and Gamboggi (2011) state that ethnography can be understood as more than a mere methodology, but taken in its sense of intercultural dialogue. The ethnographic experience, as a special instance of the more generic experience of communication, presupposes, from the outset, beings in contextual coexistence, making use of their conceptual and material resources to position



themselves in front of each other, in the dialectic between being existentially open (curiosity) and closed (fear).

Retrieval of oral life history

“Meihy (1996) mentions as an assumption that “Oral history implies a perception of the past as something that has continuity today and whose historical process is not finished” (Silva, 2004, p.11). Subjects construct knowledge based on a determined intention to make articulations between what they know and the new information they intend to absorb. In view of this assumption, it is necessary to write about the oral history of life is It is gratifying, it involves a whole historical and socio-cultural context from the past to the contemporary. “Oral history is indicated as a prospect. It is important for the research of subjects, for whom there is no other access, to answer new questions about old themes, to provoke new subjects and to open new perspectives of analysis (Silva, 2004, p.19-20).

Netnography

Netnography is understood as the netnographic method adapts techniques, procedures, and methodological standards traditionally employed in ethnography for the study of emerging cultures and communities on the Internet (CORRÊA and ROZADOS, 2017). Is It is in this context that netnography emerges, a research method, based on participant observation and online fieldwork, which uses the different forms of computer-mediated communication as a source of data for the understanding and ethnographic representation of cultural and communal phenomena (CORREA and ROZADOS, 2017). The term netnography is a combination of the words *Ethnography on the Net* and was coined by the American researchers Bishop, Star, Neumann, Ignacio, Sadunsky and Schatz in 1995 with the aim of describing the methodological challenge of preserving the details of observation in the ethnographic field using the electronic medium to monitor individuals (CORREA and ROZADOS, 2017).

MATERIALS

(1) Financial resources for the purchase of materials related to the terreiro (purchase of dispatches). (2) Material for herbalization: Press, ropes, newspaper, cardboard and aluminum foil, white cardstock, glue and paper labels. (3) Boxes and mothballs and paper labels for packing the herbs. (4) Pots, sand, clay, seedlings, humus and gardening supplies.



ETHNOBOTANICAL METHODS

(1) Survey of plant species in the Umbanda terreiro (ALVES, 2019). (2) Survey of ritualistic plant species (ALVES, 2019). (3) Construction of a collection of useful plants from the Umbanda terreiro (through exsiccatae, dried herbs, living collection in pots) (SANTOS, 2019). (4) Interview with religious leaders of the Umbanda terreiro to learn about the plants used, common name, part of the plant used and method of use (TADDEI and GAMBOGGI, 2011). (5) Investigation of the biological name based on the common name collected and the origin of the plant (DUARTE-SILVA et al., 2019). (6) Develop interdisciplinary teaching practices of history, geography and biology based on the knowledge collected (DUARTE-SILVA, MACIEL and SALES, 2014; MACIEL et al. 2014; DUARTE-SILVA et al. 2019; DUARTE-SILVA et al. 2020).

RESULTS AND DISCUSSION

AFRICAN-AMERICAN RELIGIONS

A bibliographic review of scientific works was carried out, and netnographic document analysis was carried out on the Youtube platform on the following items below.

Haitian and American Voudou (Mississippi, Louisiana)

Voudou or Voudouism is an African-American religion present in Haiti, and in the French-colonized states of the United States of America (USA), such as Louisiana and Mississippi. It is an Afro-descendant religion originating in the Gulf of Benin in the Africa, culturally based Gege or Jeje (we find both spellings). Yoruba-based religion. Religion that brings together knowledge of the Haitian indigenous culture, knowledge of the Catholic religion, and knowledge of the African Yoruba culture and language. The nuns wear white garments as in the Cuban Santéria, in the Brazilian Umbanda, and in the Afro-Brazilian Candomblé. The Altar is filled with images of Catholic saints, African rites, candles of all colors, alcoholic beverages, tobacco, dances and percussions. There is the cult of orishas and entities. There is Afro percussion and Afro dances. A peculiarity of Voudou is the use of human bones, exhumed, in religious rites. As well as, the painting of the face with white sand at the time of the incorporation of spirits. Some entities of Voudou are: the Loas, from the French ‘Les lois’, that is, the laws. These are the most important deities of the Voudou. Examples include: Baron Samedi (Saturday in French, Creole), Maman Brigitte, Papa Legba. Different analyses of Haitian voodoo point to the fact that the term is used *Vodou* used to define rituals that involve singing, dancing, drumming, commensality, and movements and promote interaction between humans and spirits (BULAMAH and DALMASO 2019).



Santeria Cubana: the umbanda of the Caribbean

Santeria is a term used for religions of indigenous and African ancestry existing in both Mexico and Cuba. Since Mexico does not have compulsory colonization of enslaved Africans, we are not going to analyze Mexican Santeria because it is not an African-American religion, but Cuban Santeria. The Santeria is an African-American religion present in Cuba. This religion brings together knowledge from the Cuban indigenous culture called "Taíno culture", knowledge from the Catholic religion, and knowledge from African culture. The nuns wear white garments as in Vodou, Brazilian Umbanda, and Afro-Brazilian Candomblé.

For the believer of Santeria there is no doubt about this relationship, but even today it is believed only in the African orishas, and the image of the cult of the Catholic saint is superimposed on them. A series of practices are still carried out today in which Yoruba cultural elements remain, perfectly coordinated, although in some cases one element has been lost, forgotten or replaced by another. Religious elements of related groups have also been mixed, which have disappeared assimilated by our population. Today, there are no songs, no words, no touches, no deities, no minas, gangás, ibos, mandingas, etc., who at some point coexisted with the Lucumís or Yorubas." (LINARES, 1993, p.3).

Quimbanda of the Iberian and Brazilian left: exús and pombas-gira

In this item, we would like to point out that certain entities of the left-wing Quimbanda such as exús and pombas-gira, often seen as an integral part of Brazilian Umbanda, are actually of Iberian origin, and not African. There are several entities in the set of exús such as the Exú Caveira, Exú Caveirinha, Exú-Tata Caveira, Exú Tranca-rua, among others. The entities of the left-wing Quimbanda as well as the entities of Umbanda are disembodied people who help the incarnated ones by energetic means and incorporation of the medium, according to the religious rite. On the other hand, in Candomblé, the entities are orishas or deities who never descended to Earth in incarnated beings. Based on this, religious mythology proclaims, for example, that the Exú Tata Caveira was a Roman Centurion. Therefore, he will work on protection demands, such as São Jorge da Umbanda and Ogum do Candomblé. Exús are dispatchers or diplomats between human beings and deities. Hence the etymology of the word. According to religious precepts, the human being offers something to the Exú (offerings), Exú takes this demand to the deities, performing the dispatch, and the deities grant the wishes of the human being. There are several cute doves that are embodied by female, trans or cis (biological women or trans women) mediums. There are several Cute Doves: Maria Mulambo, Maria Farrapo, Maria Padilha, Gypsy, Queen, Rose, Maria Quitéria, Seven Keys, Rose of the Night and Girl. The mythology of the Quimbanda, through oral history, describes the Pomba-Gira Maria Padilha as a very beautiful lady, of Iberian origin, southern Spain, who had her body burned to the ground. So, this entity helps cis or trans women in matters of sentimentality and sexuality. The gifts that the Cute Doves ask for to perform the spells are usually of the color red, and involve lipsticks, nail polish and roses of the color red, and perfumes. Drinks and tobacco are also



part of the rite. Exús are sought after for matters of war. And doves-cute, for matters of love. The Quimbanda is called left-wing because the entities are to the left of the sacred orishas (NUAO, 2022).

African and Afro-Brazilian Candomblé

Candomblé is an African religion present in Brazil with a Yoruba cultural base, with Nagô language. Native to the Gulf of Benin, Guinea and Guinea-Bissau region. The nuns, called mothers of saints, wear white robes as in the Cuban Santeria, in the Brazilian Umbanda, and in the Voodoo. The Candomblé terreiros are full of arboreal and herbaceous, ritualistic and medicinal plants, as well as African handicrafts, especially in clay. It is a polytheistic religion and there is the worship of deities called orixás: Iansã, Iemanjá, Oxum, Oxumaré, Xangô, Ogum, Oxosse, Oxalá, Omulu, Nanã. There is African percussion, African language, the Nagô and African dances. In the Candomblé terreiros, there is the reception of its practitioners called filhos de Santo, for spiritual, psychological and physical matters. Healing takes place through consultations with the mothers of the saint and the father of the saint, with recipes for rites, rest practices (stress reduction) and plants. Candomblé is strongly present in Brazilian and Bahian culture, in particular. Being an emblematic part of our culture, tourist attraction to national and international tourism in Bahia and Brazil. A Candomblé practice is practiced annually by millions of Brazilians: offerings to the deity Iemanjá in the sea on the passage from the old year to the new year. And the practice of spending New Year's Eve on the beach and in the sea. Candomblé, in Brazil, is a strongly syncretic religion. Due to centuries of slavery and colonialism, and prohibition of the practice of Candomblé until the twentieth century, the deities of Candomblé were practiced in a hidden way by Africans, and Afro-Brazilians, through the image of Catholic saints. There are associations between the orishas and the saints known to the Brazilian population to this day

Brazilian Umbanda: brings together indigenous, African and European religions

O Umbanda is a religion that originated in Brazil at the beginning of the twentieth century. is a religion originating in the Gulf of Benin in the Africa, Nago-speaking and Yoruba culture. It is a religion that brings together knowledge from the Brazilian indigenous culture, repeated, for example, in the entities Cabocla Jurema and Caboclo Sete Flechas. Knowledge of the Catholic religion, such as the entity of St. George, St. Cosmas and Damian. And knowledge of the African Yoruba culture and language, of Candomblé such as: oxalá, ogum, oxosse, omulú, erês, iemanjá, oxum. Exús and Pombas-gira are also worshipped in Umbanda. And there are Afro-Brazilian entities specific to Umbanda, such as Preto-Velho, and Vovó, Preta-Velha. The nuns wear white garments, as in Cuban Santeria and Afro-Brazilian Candomblé. The Altar is filled with images of Catholic saints, African



rites, candles of all colors, alcoholic beverages (marafó), tobacco, cigars, dances and percussions. There is the cult of orishas and entities. There is Afro percussion and Afro dances.

Notes on European Black Magic

There are rites and practitioners of European Black Magic in Brazil who are often confused with practitioners of Umbanda. When in fact, Black Magic comes from Europe, and from the multiple Portuguese and Iberian history that encompasses ancestry such as pre-Christian pagan religions, and persecuted in the Inquisition, religious rites of peoples persecuted in the Inquisition, and European ancestral pagan religions in general, some very old, dating back to the period of the Roman Empire and their relations with the cultures of the Middle East and Egypt. European Black Magic Rites involving the murder of children as offerings were investigated by the Brazilian police. Those involved have been arrested. It's something geographically interesting is that these crimes took place in the states of São Paulo and the south of the country, more specifically in the state of Santa Catarina, where there is no strong Afro-descendant presence. In Umbanda, animals are slaughtered as offerings (such as chickens and goats), but there are no records of homicides.

Teaching practices in Biology, History, and Geography, based on the ritualistic and medicinal plants of the Umbanda terreiro in São Mateus, Espírito Santo.

Anthropological immersion was not obtained with the researched group, in this case, the leaders of an Umbanda Terreiro in the municipality of São Mateus-ES, for two main reasons: the closure of the terreiro during the COVID-19 pandemic, and another private reason. Due to the pandemic scenario, there was no time in person to establish relationships of trust, whether they were established through dialogues or those established through contracts, such as the submission by the committee of Ethics in research with human beings.

Based on this, the work sought to maintain its specific educational research objectives through a bibliographic review on medicinal and ritualistic plants from Umbanda terreiros present in the Atlantic Forest Biome, preferably as close as possible to the region of São Mateus-ES, both from a phytogeographic and cultural point of view.

A search was carried out on Google Scholar about medicinal plants and rituals of Umbanda terreiros, and a course completion work developed in the Atlantic Forest Biome and in the state of Minas Gerais was located. And it was used to study its species survey, in order to compare and identify the existing species both in Ituiutaba-MG and in São Mateus-ES. And from the species occurring in São Mateus-ES, elaborate teaching practices in Botany, History and Geography, based on these species.



With regard to teaching practices, the medicinal and ritualistic species of the Umbanda terreiro of Uberlândia, common in São Mateus, were purchased in a flower shop, and a mobile Didactic Garden of medicinal and ritualistic species of Umbanda was created.

From this mobile Sensory Garden of plants A photographic catalogue and explanatory captions on how these plants can be approached in the classroom.

When flowering and fruiting, exsiccates of the botanical material will be made and a herborized collection will be as future perspectives of this work.

A table was also prepared with the ethnobotanical aspects of the species, and their phytogeographic origin, making it possible to interdisciplinarize with ethnology, sociology, history and geography in the High School of Basic Education.

Finally, in view of item 6 of the present work: adequacy of the research for the pandemic scenario and Voodoo research as a subsidy for the Haiti project, registered at PRPPG-UFES, and coordinated by this advisor;

The present work compared the author's experience in the terreiros of Umbanda in the North of Espírito Santo, as a visitor, to scientific documentaries of Haitian Voodoo available on the Youtube Platform. This netnography sought to understand Voudouism as a subsidy for the anthropology of school practice in Haiti, and to seek similarities between Voudouism and Umbanda that can reinforce and clarify our unique roots of African origin, our Afro-American affirmation, and our capacity to fight together for the rescue of our history, for the affirmation of our culture, and for the solution of the problems caused by colonialism and slavery.

Documentary analysis of ritualistic and medicinal plants of Terreiro de Umbanda in the Atlantic Forest Biome

In the municipality of Ituiutaba-MG, the following medicinal and ritualistic species were found in the Terreiro de Umbanda (Alves, 2019), described in the following items of the results.

Field survey of species with ritualistic and medicinal character in the city of São Mateus - ES, botanical, ethnological, pharmacological and historical-geographical characteristics

Of the species contained in the research carried out in Terreiro de Umbanda in Ituiutaba-MG, the following species below also occur in the municipality of São Mateus-ES.

The ethnological, ethnobotanical and pharmacological characteristics of the following plant species were collected by Alves (2019), (<http://clyde.dr.ufu.br/bitstream/123456789/24955/5/Etnobot%C3%A2nicaPlantasRitual%C3%ADsticas.pdf>).



Below is a table with the survey of species with ritualistic and medicinal character in the city of São Mateus - ES based on comparisons between the local culture of Mato Grosso, and the work of Alves (2019) in Ituiutaba-MG, Atlantic Forest Biome.

The table below was composed according to the assumptions of the work of Duarte-Silva et al. (2019) on Teaching Botany from the diet of Haiti, Brazil, and other sites in Latin America and the Caribbean, with the presence of enslaved Africans, compulsorily immigrated.

To support the knowledge of Botany that can be taught with plants, in table 1, Botânica books of Plant Morphology, Plant Taxonomy, Plant Anatomy, Plant Physiology and Physiology of Seed Germination (APEZZATO DA GLÓRIA and CARMELLO-GUERREIRO, 2014; RAVEN, EVET and EICHHORN, 2007; VIDAL and VIDAL, 2000; FERREIRA and BORGUETTI, 2004; APG, 2009), and Basic ecology, applying this knowledge in plant ecology (RICKLEFS, 2003).

In order to research the geographical origin of the plants, we searched articles in the Google Scholar database (<https://scholar.google.com.br/?hl=pt>).

Table 1- Survey of species with ritualistic and medicinal character in the city of São Mateus - ES: botanical, ethnological, historical-geographical characteristics and educational potential.

Family Name Scientific	Popular name	Botany knowledge that can be taught with the plant	Phytogeographic origin
ANACARDIACEAE <i>Spondias dulcis</i> G.Forst.	Cajá-manga	Secretory structures in leaves. Fruit morphology. Chemical components of the cell, Human nutrition.	America
ANACARDIACEAE <i>Mangifera indica</i> (L.)	Mangueira	Secretory structures in leaves. Fruit morphology. Chemical components of the cell. Human nutrition	India. Asia
ARACEAE <i>Colocasia esculenta</i> (L.) Schott	Inhame	Toxins in the leaves. Leaf Morphology. Underground stem. Tubers. Amyloplasts. Chemical components of the cell. Nutrition. Iron. Anemia. Diseases resulting from anemia. African cuisine. Morphology of Monocotyledons.	Africa
ARACEAE <i>Dieffenbachia amoena</i> (Bull)	Comigo ninguém-pode	Toxin in leaves. Poisoning of domestic animals. Photosynthetic pigments. Leaf pigments. Morphology of Monocotyledons.	America.
ASPARAGACEAE <i>Sansevieria cylindrica</i> (Bojer)	Lança de São Jorge	Toxin in leaves. Poisoning of domestic animals. Photosynthetic pigments. Leaf pigments. Morphology of Monocotyledons. Paralenine leaves typical of Monocotyledons. African culture.	Colombia and Costa Rica.



<p>ASPARAGACEAE <i>Sansevieria trifasciata</i> (Prain)</p>	<p>Espada de São Jorge verde</p>	<p>Toxin in leaves. Poisoning of domestic animals. Morphology of Monocotyledons. Paralenine leaves typical of Monocotyledons. African culture.</p>	<p>Africa</p>
<p>ASTERACEAE <i>Solidago chilensis</i> (Meyen)</p>	<p>Arnica</p>	<p>Morphology of a herbaceous plant. Morphology of a eudicot. Amplexicaule sheath. Morphology of the flower with capitulum inflorescence. Pivotal roots. Rapid seed germination for experiments. Easy cultivation.</p>	<p>Europe</p>
<p>CRASSULACEAE <i>Kalanchoe laetivirens</i> Desc. (23)</p>	<p>Fortuna Kalanchoe Língua de Exú</p>	<p>Meristem. Leaf meristem. Vegetative propagation. Water storage tissues in leaves (aquiferous parenchyma). Succulent plant African culture.</p>	<p>Africa</p>
<p>CURCUBIACEAE <i>Luffa aegyptiaca</i> (L.)</p>	<p>Bucha vegetal</p>	<p>Stem anatomy. The stem has the main tissues of primary origin: epidermis. Parenchyma. Sclerenchyma. Collenchyma. Xylem and Phloem. Leaf morphology. Leaf Evolution, Flower Morphology.</p>	<p>India</p>
<p>EUPHORBIACEAE <i>Ricinus communis</i> L.</p>	<p>Mamona</p>	<p>Toxic plant. Presence of latex. Eudicot. Floral morphology. Inflorescence in dichasium. Fruit in globose capsules with thorns. Lots of collenchymatic tissue in the stem. Good model for teaching the function of collenchyma. Spontaneous plant. Teaching environmental degradation and ecological succession.</p>	<p>South Asia</p>
<p>RUTACEAE <i>Ruta graveolens</i> L.</p>	<p>Arruda</p>	<p>Morphology of secondary growth in plants. Periderm. Stem in rhythm. Leaves with translucent glands. Secretory structures in leaf anatomy. Essential oils. Mediterranean culture. Ancient history.</p>	<p>Europe and North Africa</p>
<p>LAMIACEAE <i>Plectranthus ornatus</i> (cood)</p>	<p>Boldo. Falso boldo</p>	<p>Eudicot leaf morphology. Secretory trichomes and vectors on leaves. Volatile oils. Leaf anatomy. Floral morphology of asterid eudicot. Flowers with gamopetalous petals.</p>	<p>African Origin</p>

Focus on education academic research



LAMIACEAE <i>Ocimum thrysiflorum</i> L.	Manjerição	Aromatic plant. Peninsular leaves. Secretory structures in the leaf. Leaf anatomy. Essential oils. Herbaceous habit. Cross-opposite phyllotaxis. Pleasant flavor. Edible and medicinal for teas. Mediterranean culture. Ancient history.	Asia. India. Cultivated for more than 5 thousand years.
Myrtales LYTHRACEAE <i>Punica granatum</i> (L.)	Romã	Arboreal habit. Medicinal plant. Folk medicine. Throat ailments.	Middle East. Domesticated 2000 years before Christ BC.
LAURACEAE <i>Cinamoum verum</i> J. Prels.	Cinamomum Canela	Plant used by Umbanda. Cinnamon is used by Ogum, it opens paths and is used in job interviews.	India. Asia One of the spices sought after by the Portuguese on large voyages.
MORACEAE <i>Artocarpus heterophyllus</i> (Lan.)	Jaqueira, apaoka	Aromatic plant. The part used is the bark of the stem (which contains the periderm tissue). It is used to study secondary growth in plants. It is a basal angiosperm, in taxonomic sciences. It is not easy to find examples of basal Angiosperms for teaching. This is one of them.	Índia.
MORACEAE <i>Morus nigra</i> L.	Amora. Amoreira-negra, amora e amora-negra	Fleshy fruit in berries. Photosynthetic pigments associated with protection against UV rays. Fruit rich in vitamin C. Human nutrition. Importance of vitamins.	Asia. Middle East. Persia (Iran)
MUSACEAE <i>Musa paradisiaca</i>	Bananeira	Monocotyledon. Underground stem. Immense leaves with petiole (erroneously called aerial stem) and leaves. Parthenocarpic fruit. Vegetative propagation by underground stem. Pollination by bats. Highly nutritious fruit. Rich in vegetable lipids. Human nutrition. Chemical components of the cell. Anabolism and Catabolism. Malnutrition and obesity.	Asia. It was brought by the Portuguese in the great navigations. Banana is the most consumed fruit in the world. And cheaper too.
MYRTACEAE <i>Psidium guajava</i> L.	Goiabeira Goiaba, araçá-goiaba, guaiaba e araçá-das-almas.	Eudicot. peninevian leaves Morphology of secondary growth in plants. Periderm. Stem in rhythm. Leaves with translucent glands. Secretory structures in leaf anatomy. Essential oils. Chemical components of the cell. Guava is rich in vitamin C. Human nutrition.	America Neotropical

Focus on education academic research



PASSIFLORACEAE <i>Passiflora edulis</i> (Sims)	Maracujá	Rosid eudicot. Climbing habit. Leaves modified into tendrils. Presence of extrafloral nectaries. Edible fruit. Leaves and fruits used as tranquilizers in mild and moderate depressions. Use in the herbal industry. Rich in Vitamin C. Flower Morphology. Seed morphology. Seed with expanded aril in yellow edible part. Fruit rich in pectin used in the food industry.	Pantropical. It occurs in America and Africa. Called by indigenous Americans as Murucua which means gourd for drinking water.
POACEAE <i>Cymbopogon citratus</i> (DC.) Stapf	Capim-cidreira	A relative of sugar cane, corn, rice, wheat and barley. It's a grass. Monocotyledon. Parallel leaves. Underground stem. Leaves with sheath and without stem. Aromatic plant. Leaves used for soothing tea. Used in cosmetology.	India.
POACEAE <i>Zea mays</i> L.	Milho	A relative of sugar cane, lemongrass, rice, wheat and barley. Monocotyledon. Parallel leaves. Leaves with sheath and without petiole. Edible grain-producing plant. Highly versatile in cooking. Leaves used for soothing tea. Used in cosmetology.	American. Improved by pre-Columbian civilizations (Mayans, Aztecs and Incas).
RUTACEAE <i>Murraya paniculata</i> (L.)	Murta. Dama-da-noite	Eudicot. Morphology of secondary growth in plants. Periderm. Stem in rhythm. Leaves with translucent glands. Secretory structures in leaf anatomy. Essential oils Aromatic plant. White flowers. Nocturnal pollination by moths. Used in bridal attire in Early Modern Europe.	Asia and North Africa.
ZINGIBERACEAE <i>Zingiber officinale</i> Roscoe.	Gengibre Gengibre, mangarataia, gengibre e gengivre.	From used is the underground stem. Edible and medicinal aromatic plant. Used for sore throats. Monocotyledon. Evolutionary relative of garden bananas, and to a lesser extent, related to yam and taioba.	Asia



Making of the mobile Didactic Garden of medicinal plants and rituals of Umbanda

The plants The useful (medicinal and ritualistic aspects of the Umbanda culture) occurring in São Mateus, listed in the table above, were purchased in vases, in flower shops in the municipality, on the Island of Guriri, and kept at the Nucleus for Pedagogical Research in Biology Teaching (NPPBio), where they will be stored and cultivated. They will be available for exhibitions, classes and didactic sequences, as well as educational research, in schools and at the University.

As perspectives, when the specimens obtained are in the reproductive phenophase (with flowers and fruits), branches containing leaves, flowers and/or fruits will be collected and exsiccates will be elaborated, composing a didactic herbarium of medicinal, aromatic and ritualistic plants of Umbanda, and of the general culture of Mateense.

In addition to the living collection of live specimens, other plant species (Table 1) parts of the plant such as roots, grains and leaves were purchased in supermarkets and in the public market to complement the "photographic catalogue of the mobile Didactic Garden with guidelines for teaching practices", inspired by the work of Santos (2019).

Considering the realization during the field that a good part of the ritualistic plants of Umbanda are aromatic plants, the process of obtaining plants and creating a mobile didactic garden was taken advantage of and some typical aromatic species of São Mateus-ES and the Brazilian southeast were also purchased, which will constitute a complementary collection in exhibitions and didactic sequences. They can be found at the end of the catalogue in the item below. In prints separate from the plants useful to the Umbanda terreiro.

Most of these aromatic plants, also used in Umbanda but very common in São Mateus-ES, and in the Brazilian southeast, are of European, Mediterranean origin due to the strong influence of Italian cuisine, and Italian immigration in the region. Syrian-Lebanese influences are also visible in southeastern Brazil. Its vulgar names are: white basil, purple basil, oregano and mint. The first ones used in Italian cuisine, and the the latter, used in Syrian-Lebanese cuisine.

Also included in the catalogue was pink pepper, an aromatic plant typical of the sandbank of Guriri Island. Dating back to the times of the indigenous occupation of the region.

It is guaco, a medicinal species widely used in Brazil through the herbal medicine industry (commonly known as "melagrião", registered trademark).

Plants of different cultural and historical-geographical origins were kept in different prints of the catalog, so as not to incur in learning mistakes.

Development of a mobile Didactic Garden Photographic Catalogue with teaching practice guidelines

The plant species listed in the work with medicinal and ritualistic plants of the Terreiro de Umbanda of Ituiutaba-MG were searched in the flower shops of São Mateus in order to identify if they were occurring in the processes of purchase and sale in the present municipality.

The specimens found were purchased to compose the Mobile Didactic Garden of Medicinal and Ritualistic Plants of Terreiro de Umbanda, and then photographed to compose the Photographic Catalog of the Didactic Garden, which is a digital didactic resource of the Garden.

Tree species were photographed in fieldwork by the anthropic environment of Guriri Island.

Figure 1- Passion fruit. Medicinal and ritualistic plant used in Terreiro de Umbanda in southeastern Brazil, Atlantic Forest Biome. Figure 1a: Young creeper. Figure 1b: Vine holding tendrils on other plants during their growth. Modified sheet. Figure 1c: Curled tendrils and young leaves. Figure 2d: Mature leaf with peninervian vein, showing to be a eudicot, in this case, a eudicot rosid. Genus: *Passiflora*. Botanical family: Passifloraceae.



Figure 2: Gorse and lemongrass: medicinal and ritualistic plants used in Terreiro de Umbanda in southeastern Brazil, Atlantic Forest Biome. Figure 2a. Gorse. Genus *Baccaris*. Botanical family: Asteraceae. Eudicot asterid. Figure 2c: Lemongrass. Botanical family Poaceae. Figure 2d: Parallel-ribbed leaves of lemongrass showing to be a Monocot.



Figure 3: Fortuna, sweet potato, mango and rosemary: Medicinal and ritualistic plants used in the terreiro From Umbanda in southeastern Brazil, Atlantic Forest Biome.



Figure 3a: Luck. Figure 3b: Batata-doce.

Figure 3c: Hose. Figure 3d: Rosemary.

Figure 4: Pink pepper, an aromatic plant typical of the sandbank of Guriri Island. Dating back to the times of the indigenous occupation of the region. Botanical family Anacardiaceae. Eudicot.



Figure 5: Aromatic plants also used in Umbanda and well occurring in São Mateus-ES, and in southeastern Brazil. They are of European origin, Mediterranean due to the strong influence of Italian cuisine, and Italian immigration in the region. Syrian-Lebanese influences are also visible in southeastern Brazil. Their vulgar names are: white basil, purple basil, oregano, and mint. The former used in Italian cuisine, and the latter used in Syrian-Lebanese cuisine. Figure 5a: Oregano. Figure 5b: Rosemary. Figure 5c: White basil. Figure 5d: Mint. Used by the Oxalás, Iemanjá, Xangô, Oxosse and the Erês line.





NETNOGRAPHIC WORK ON SIMILARITIES AND DIFFERENCES BETWEEN BRAZILIAN UMBANDA AND HAITIAN VOUDOU AS A SUBSIDY FOR THE HAITI-UFES PROJECT.

A netnographic analysis of a documentary about Haitian Voudou (VICE, 2022) was carried out, assisted by the present author, a practitioner of the Umbanda religion. Similarities and differences of the two religions were listed in order to seek common cultural patterns that can reinforce and clarify our unique roots of African origin, our Afro-American affirmation, and our capacity to fight together for the rescue of our history, for the affirmation of our culture, and for the solution of the problems caused by colonialism and slavery.

The first similarity found between Voudou and Umbanda was the clothing, dances and drawings on the floor. In Umbanda and Quimbanda, the ground is scratched, at the so-called point, where is incorporated into the entity. The left-wing Voudou, Umbanda and Quimbanda reinforce that they do not work with Black Magic. These peoples of Afro-descendant religions are routinely labeled, and demonized by Western Christian culture, as practitioners of Black Magic. The video about Haitian Voudou demonstrates a welcome in the Terreiro through dinners typical of the culture, as observed in Candomblé. We cannot say anything about Umbanda. Practitioners of Voudouism suffer prejudice from practitioners of Christianity in Haiti, as well as practitioners of Afro-descendant religions in Brazil.

"Voudou comes from slaves brought from Africa. They captured them, beat them, abused them, and killed them. Voudou set them free. They (the entities) walked around the world and came here between us. And so the Voudou spirit entered us. And is called Voudou from Haiti. When you know our society (Voudouism), the spirits that protect us will also protect you." (VICE, 2022).

The religions of Umbanda and Candomblé they are also affirmative religions of the Afro culture, and transmitters of History. They are liberating religions. In the documentary about Voudou, skulls and femurs exhumed from human beings, and images of tombstones are shown. These practices do not occur in Umbanda and Candomblé. Although images of tombs and skulls associated with exús of the left-wing Quimbanda have been seen.

In both Umbanda and Voudou, there are altars with Catholic saints, candles of various colors, rosaries, drinks of various kinds, tobacco, cigars, and symbols and images of Afro-American entities and deities. In Voudouism there is the reception of afflicted and needy people. In Umbanda as well. In the Christian religions as well. The homosexual population feels welcomed in Voudou and Umbanda, including leaders, mediums of homoaffective or transgender identity. Gays and transgenders do not feel disrespected in these religious spaces, even though both Haitian and Brazilian societies are prejudiced. The documentary about voudou demonstrated the purchase of goats, goats and the slaughter of chickens. Certain aspects of Umbanda and Quimbanda can act with the slaughter of animals as offerings, although we do not collect this information in the present



fieldwork and netnographic. In Voudou rites are observed in cemeteries and exhumation of bodies, which is not observed in Afro-Brazilian religions, even for legal reasons. It is important to point out that in the left-wing Quimbanda rites take place in cemeteries, with the offering of animals such as goats, but without exhumations and the use of human bones. In Voudou there is the incorporation of deceased ancestors by mediums, as in Kardecism. In Umbanda, entities are incorporated. Both in Voudou and in Umbanda there are people who advise the medium during the incorporation. The Popcorn is used as an offering in Voudouism and Umbanda. Children participate in certain ceremonies in both Voudou and Umbanda. According to Umbanda mythology, they take the children both to participate in the culture of their parents and the children are released in the Terreiro to "play" with the And if you want to be sure, you have Mediums in Voudou feel the energetic presence of their dead ancestors. Once again, Voudou approaches Kardecist Spiritism and distances itself from Umbandism. As a hypothesis, this fact may result from the French origin of both the Haitian State and the Spiritism of Allan Kardec, with a Christian basis. Both Voudou and Umbanda mediums claim to lose consciousness during the trance of incorporation. African percussion, dancing, alcohol and tobacco are part of the process that leads to trance in both religions.

Finally, in the past there were no morgues in Haiti. And Voudouism was in charge of the funeral services. That's why there is so much symbolism related to human death.

FINAL THOUGHTS

The present work proposes to document the knowledge, which we admit here as scientific, of an Umbanda Terreiro. Therefore, a knowledge "outside" Western scientific knowledge guided by the Judeo-Christian religious tradition. The netnographic review carried out, and the comparisons of the Umbanda culture with the Voudou culture through netnography, found that all non-Christian religions in America: Voudou, Santeria Cubana, Umbanda, left-wing Quimbanda, Candomblé, European Black Magic are demonized to a greater or lesser degree because they are religious rites external to the Christian tradition. They date back to the persecution of pagan peoples and New Christians, to the persecution of African religions in the American continent, from Colonialism. This work sought, through teaching practices in Biology, with aspects of History and Geography, to deconstruct prejudices about African ancestral knowledge immersed in Brazilian culture. As well as subsidizing extension actions in Haiti from the perspective of ethnographic work and ethnological immersion.



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