



Ethnomedicinal survey of a maroon community in Brazil's Atlantic tropical forest



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ARTICLE INFO

Article history:

Received 18 November 2015

Received in revised form

16 January 2016

Accepted 17 January 2016

Available online 21 January 2016

Keywords:

Medicinal plants

African diaspora

Traditional ecological knowledge

Ethnobotany

ABSTRACT

Ethnopharmacological relevance: Considerable medicinal plant research in Brazil has focused on indigenous and mixed-race (caboclo and caiçara) communities, but relatively few studies have examined the medicinal plants and associated healing traditions of the descendants of enslaved Africans. This study surveyed the medicinal plants employed by a relatively isolated maroon community of Afro-Brazilians in the Atlantic coastal rainforests of Bahia, Brazil, a global biodiversity hotspot. The studied community is exceptional in that the residents were defacto slaves until several years ago, with no access to western medicine. We examined the following questions: 1) What medicinal plants are used in this community? 2) What are the principal taxonomic groups, life forms, source habitats, and geographical origins? 3) What species stand out as measured by use value and frequency indices? and 4) Is the community's geographical isolation and African ancestry reflected in their medicinal uses of the local flora?

Materials and methods: The study was carried out in the Quilombo Salamina Putumaju maroon community in Bahia, Brazil. Data were collected from May to October 2014 from 74 individuals (37 men and 37 women) by means of semi-structured interviews, walk in the woods, and vouchering of identified species. We used the Cultural Value Index (CV), the Relative Frequency Index (RF), and the Use Value Index (UV) to determine the importance of medicinal plant resources. Continuity of African medicinal plant uses and traditions was determined through self-reporting and comparison with previously published works.

Results: We recorded 118 medicinal plant species distributed in 100 genera and 51 families. The best represented families were: Asteraceae, Fabaceae, Lamiaceae and Myrtaceae. Most plant medicines were used to treat respiratory, digestive systems, genitourinary, and skin problems. The most common medicinal life form was herbs (44%), followed by trees (28%) and shrubs (18%). Native species (55%) were used somewhat more than exotic species (45%), and non-cultivated species (51%) were slightly more numerous than cultivated species (49%). In spite of abundant nearby old-growth forests, trails and gardens were the most common collection sites. A mean of 13.2 medicinal plant species were cited per participant. The highest CV was recorded for *Cymbopogon citratus* (0.20) followed by *Lippia alba* (0.19) and *Stryphnodendron cf. adstringens* (0.17). The highest RF included *C. citratus* (0.69), *L. alba* (0.59), and *Eugenia uniflora* (0.55). The highest UV figures were recorded for *S. cf. adstringens* (1.68), followed by *Sida cf. cordifolia* (0.97) and *C. citratus* (0.93). Fifteen species (13%) of this maroon medicinal flora trace their ancestry to Africa or African-derived healing traditions.

Conclusion: The Salamina maroon community maintains considerable knowledge of the medicinal value of the local flora. However, little of this knowledge is derived from the surrounding old-growth tropical forests. Their pharmacopoeia is a hybrid mix of wild and cultivated species, natives and exotics. Among those species representing the community's isolation and African ancestry, most are associated with spiritual and magical medicine.

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1. Introduction

The Atlantic tropical forests of eastern Brazil represent one of the most biodiverse and yet highly threatened ecosystems on Earth. With less than 15% of its original forest intact, and most of

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this consisting of isolated and disturbed fragments, the Atlantic forest is ranked as one of the hottest biodiversity hotspots (Lima et al., 2015). Following five centuries of colonization and depopulation of its indigenous population, most of the forested rural regions are occupied by people of mixed ancestry – Portuguese, German, Amerindian, and African. Over the centuries, these creoled communities developed extensive plant pharmacopoeias to treat what ailed them. These were characterized by retention of traditional medicinal species, both native and introduced, as well as acquisition of new species and healing traditions (Hanazaki et al., 2000; Begossi et al., 2002; Tribess et al., 2015). This ethno-pharmacological knowledge base is highly threatened, however, by the combined forces of globalization, proselytization, and entrance into the market economy (Voeks and Leony, 2004).

Among the various immigrant groups that have settled in Brazil, the descendants of enslaved African laborers represent a particularly insightful example of the long-term process of medicinal plant retention and acquisition. With over 10 million forced immigrants having arrived over the course of the slave trade, the African diaspora represents the largest and most extensive forced migration in history. Faced with the challenges of living and working as chattel, Africans were severely constrained in their ability to introduce the useful species of their homelands (Carney and Voeks, 2003). Nevertheless, research from Brazil, Suriname, and Cuba underscore the extent to which New World Africans have developed hybrid ethnofloras, including assimilated elements of indigenous and European medicinal species, and preserved elements of the healing floras of their homelands (Voeks and Rashford, 2013; Torres-Avilez et al., 2015). This is particularly well documented among adherents to African-derived religions, such as Winti in Suriname, Santería in Cuba, and Candomblé in Brazil, wherein healing is deeply entwined in cosmology and represents an important impediment to European cultural hegemony (Andel et al., 2013; Moret, 2013; Voeks, 2013). This may be especially true in the case of maroon communities. As enclaves of slaves who escaped bondage, these unique social environments represented fertile areas for experimentation with the local flora, for creolization between traditional Old World plants and healing traditions, and for assimilating elements of the native pharmacopoeias and traditions from local indigenous groups (Hoffman, 2013). Many maroon communities operated in relative isolation from the mainstream of Brazil's evolving civilization. Consequently, maroon plant pharmacopoeias are instructive in terms of the sorts of habitats, life forms, and species that are most likely to be assimilated by immigrant peoples, as well as those that are not. They also reveal the degree to which healing plants and traditions of the homeland, in this case of African origin, are able to arrive and survive the challenges of cultural domination and geographical isolation.

Although there are many present day maroon communities in Bahia (Watkins and Voeks, 2015), which in Brazil are known as quilombos, the community selected for this study – Quilombo Salamina Putumuju – presents some particularly unique features. During the colonial era, like most other arable areas in Brazil's northeast, the region surrounding Salamina was converted to sugar cane and tobacco production. Local indigenous people were exploited to serve the growing demand for labor, but they soon proved too few, and by the mid-1500s the first shiploads of enslaved African laborers arrived to toil in the fields and mills. Most of the early recruits were drawn from Bantu populations, principally from present-day Angola, Congo, Mozambique, and others. Later, as a consequence of the inhumane conditions of slavery and the continuing large numbers of arrivals into the 19th century, slave rebellions occurred, and many Africans escaped to freedom to form quilombos. Some quilombos were temporary, persevering only a few years or less, whereas others survived for a century or

more. The longest lived of these formed quasi states within a state, reestablishing many of the customs and traditions of distant Africa (INCRA, 2006).

Salamina was one of these communities of escaped slaves, existing for an as yet indeterminate number of years. Following abolition in the 1880s, Quilombo Salamina became the “Salamina Farm” and passed through various owners in the coming decades. According to reports and community elders, the local population lived until quite recently under deplorable conditions, and many refer to their recent history as “the time of slaves”. Community members were forbidden to cultivate their own staple crops, or to fish in the surrounding waters. Rather, they were forced by their “owner” to barter their labor for food. They were in many respects 21st century slaves. During this period of cultural and economic domination and isolation, the community reportedly had no access whatsoever to western medicine and pharmaceutical drugs.

The primary objective of this study was to explore the ethno-pharmacology of this relatively isolated maroon community. We investigated the following questions: 1) What medicinal plants are used and for what ailments in this community? 2) What are their principal taxonomic groups, life forms, source habitats, and geographical origins? 3) What species stand out as measured by use value and frequency indices?, and 4) Is the community's geographical isolation and African ancestry reflected in their medicinal uses of the local flora?

2. Materials and methods

2.1. Study area

The community of Quilombo Salamina Putumuju (hereafter Salamina) is located in the municipality of Maragogipe (12°46'40"S and 38°55'08"W), in the “Recôncavo” region of Bahia, northeastern Brazil. The municipality of Maragogipe, which borders seven cities (Cachoeira, São Félix, Saubara, São Felipe, Nazaré, Salinas das Margaridas and Jaguaribe) is located about 130 km from the state capital. It has an area of 440,161 km², a population of 45,740 inhabitants, and is situated on the Bay of Iguape, intermediate region between the Paraguaçu River and the Bay of All Saints (Fig. 1). The Bay of Iguape is an extensive lagoon estuary surrounded by mangrove. The regional climate is hot and humid tropical, with an average annual temperature of 25.4 °C and annual rainfall from 1000 to 1800 mm. The highest rainfall period occurs between the months of April and June. The vegetation consists of tropical rainforest and seasonal forest, second growth forest, and mangrove. For the purpose of protection and sustainable exploitation of local marine ecosystems, a state conservation unit was established in 2000 – the Bay of Iguape Marine Reserve (Resex Baía do Iguape) – managed by the Chico Mendes Institute (ICMBIO).

The Salamina community is one of many traditional Afro-Brazilian communities in the region. It was officially recognized in December 2004 by the Palmares Cultural Foundation as a “remnant maroon community” (ICMBIO, 2009). The community is located in the vicinity of the Marine Extractive Reserve Baía do Iguape. There is considerable isolation between the maroon descendants living in Salamina and the urban population living in Maragogipe, located on the opposite bank of the Paraguaçu River. There is also isolation even within the Salamina population, which is divided into eight widely-separated residential areas, including: Tororó, Ferreiro, Dunda, Olaria, Cais do Engenho, Rio do Navio, Putumuju and Porto de Salamina. The population currently consists of roughly 200 people forming 40 family units. The main economic activities of the community members are artisanal fishing (using small boats and canoes), extraction of piassava palm fiber (*Attalea funifera*), and planting of cassava, oranges, African oil

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