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Medicinal Flora from S. Tomé, Africa

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Introduction

S. Tomé (ST) archipelago is only slightly bigger than the Seychelles, the smallest country in Africa. Located in the Gulf of Guinea, at about 1º north of the Equator, ST had 215,056 residents in 2019, most of which (66%) lived under the poverty line of 3.2 dollars per day (World Bank, 2020). The African environment is highly biodiverse, because it has an Equatorial climate with average 25º monthly temperatures, and 80% relative humidity; annual rainfall totals 1,285 millimetres (Climate data, 2020). Discovered by the Portuguese, in 1470, the island had four economic cycles: 1) The sugarcane plantation and production cycle, from 1494 to 1610, was quite depredatory; 2) The trade cycle, in a triangulation of Africa with the Americas and Europe, from 1611 to 1779, was developed together with subsistence farming; 3) The coffee plantation cycle, the shortest one, spread from 1780 to 1822, because *Coffea arabica* suffered from leaf rust disease; 4) The cocoa cycle started in 1822, year of the independence declaration of Brazil from Portugal, a colony which chocolate production was exported to Portugal. ST was the location of a process of replacement in Brazilian cocoa production that continues to our days. The research question for this contribution was: "How can the city residents solve their mild and chronic health troubles when they lack financial resources for their daily needs, such as food and shelter?" The main objective of the research was to feed a database about healing flora from Africa, a project initiated in 2018 in Ghana (Madaleno, 2019).

Material and Methods

Exotic species and natural remedies have enriched this native pharmacy, meaning ST Equatorial Island. Healing traditions are local, but traditional medicinal knowledge (TMK) was also imported from Europe and other African locations and islands (Angola and Cabo Verde Archipelago), and from Brazil. In other TMK studies, exotic species have been targeted, in order to understand human-nature relations (Gama et. al., 2018). Jumbe and Nyambose (2016), from Malawi, have focused conservation agriculture as means to meet the growing demand for food in Africa. Current contribution gathered empirical evidence of the consumption of food, spices and medicines, both exotic and native, farmed in peri-urban areas or gardened in the capital-city, so as to contribute for ST residents' subsistence and well-being.

During the year 2019, the Institute of Geography and Spatial Planning (IGOT), from the University of Lisbon, conducted a survey to four categories of informants, in the capital city of S. Tomé and environs: 1) the food, spice and natural medicines growers (20 %); 2) the fruit, fresh legumes, staples, and healing plant collectors (74 %); a couple of traditional medicinal practitioners (4 %); service providers that sold dried plant portions either, like a botanical garden guide (2 %). The survey gathered 111 different plant species, half of which possessed curative properties (Madaleno, 2020). Botanical identification of species used the Royal Kew Gardens norm, available online (RKG, 2019).

Results and Discussion

According to Pape and Andrade (2015), it was in the 1920's that hospitals were built all over the island of ST, as any cocoa plantation (*roça*, in Portuguese) with over 1,000 workers was obliged by law to have its own hospital. In fact, slavery was abolished in 1869 and, from then onwards workers were sought after in Angola, Cabo Verde (both Portuguese colonies, those days) and in other western African countries. Endemic diseases needed specialised care, such as malaria and cholera. The Equatorial and biodiverse rich ST environment possessed several anti-malarial and anti-diarrhoeal plant species, as Table 1 illustrates, as is the case with the quinine tree (*Rauvolfia caffra*).

In spite of this, American species like Jesuit's bark (*Cinchona officinalis*) and Ipê (*Tabebuia serratifolia*) were introduced from Brazil, used against fever and body pains associated to the tropical diseases. Other species, such as worm-seeds (*Chenopodium ambrosioides*) also became popular in ST. European analgesic and anti-catarrh species like Melissa (*Melissa officinalis*) or plantain (*Plantago major*) were taken to ST by the Portuguese colonisers, as they are popular infusions in Portugal. Netle (*Urtica dioica*) is still consumed in syrups together with beetroot (*Beta vulgaris*), and very appreciated to ease gout pains.

Several plant species have dual uses, such as maquequê (*Solanum macrocarpum*), consumed as food and medicine, for its anti-anaemic properties. It is a nutraceutical and it had six (6) occurrences in the 2019 survey of the University of Lisbon. Other species necessary to make the *calulu*, the local delicacy, also nutraceuticals are: the African basil (*Ocimum gratissimum*); *Selô-sum-zóm-maiá* (*Eryngium foetidum*), a species consumed in the Amazonian city of Belém (Madaleno, 2002), with duck or fish, whereas *calulu* is usually cooked in ST with chicken or fish; Quissobó, a natural antibiotic from ST, is consumed against genital diseases.

Fig. 1: Quissobó, from a food and medicine garden. Photo: I. M. Madaleno (2019)

Big plantations that are nowadays two hours distant from the capital-city, S. Tomé, located in the northern shores, at Anna Chaves Bay, possessed a private hospital, a pharmacy, a school, canteens and even a maternity. That's the case with *Roça Monte Café*. After the independence from Portugal, in 1975, all Portuguese doctors, nurses, schoolteachers and technicians fled the country, because the plantations were targeted to become national ST properties. Therefore, local education and health staff migrated to the capital-city, leaving schools and hospitals unattended. Consequently, TMK replaced conventional treatments and ST healers became essential for the wellbeing of all residents, even low-income urban and peri-urban populations.

Common Names *(Portuguese)*	Botanical Names	Uses	Nº
1.African Basil *(Folha de Micocó)*	*Ocimum gratissimum* L. LAMIACEAE	Spice and anti-hemorrhoids	4
2.African Breadfruit *(Izaquente)*	*Treculia africana* Decne. MORACEAE	Anti-flu, anti-anaemic	2
3.Aloe *(Aloe)*	*Aloe vera* (L.) Burm. f. ASPHODELACEAE	Clyster against constipation, Cosmetic species	3
4.Billygoat Weed, White Weed *(Folha Malé, macho e fêmea)*	*Ageratum conyzoides* L. ASTERACEAE	Analgesic, burns, applied against vaginal, prostate problems.	2
5.Bitter Tea Vernonia *(Libô, Libu)*	*Vernonia amygdalina* Delile ASTERACEAE	Massages against children aches and constipation, anti-malarial	3
6.Castor bean *(Mamonó)*	*Ricinus communis* L. EUPHORBIACEAE	Ear, kidney aches, anti-typhoid and anti-infections.	2
7.Costus *(Bordão de macaco, Cana de macaco)*	*Costus giganteus* Welw. Ex Ridl. COSTACEAE	Massages and parches, bone settler.	3
8.Devil's horsewhip *(Folha de Ponto)*	*Achyranthes aspera* L. AMARANTHACEAE	Anti-diarrhoea, anti-inflammatory, anti-haemorrhagic, burns	5
9.Fake Boldus *(Boldinho*)	*Plectranthus neochilus* Schltr. LAMIACEAE	Anti-hypertension, diabetes, liver diseases, urinary	2
10.Manjoló	*Solenostemon monostachyus* (P.Beauv.) Briq LAMIACEAE	Anti-flu baths	2
11.Mussa branca e vermelha	*Thunbergianthus quintasii* Engl. SCROPHULARIACEAE	The leaf with palm oil helps child delivery, the flower in infusion is kidney stonebreaker.	2
12.Pau Três	*Allophylus grandifolius* (Bak.) Radlk. SAPINDACEAE	The leaf is anti-diarrhoeal, the bark is aphrodisiac	2
13.Quinine Tree (*Cata Grande*)	*Rauvolfia caffra* Sond. APOCYNACEAE	Anti-malarial, Diabetes	2
14.Sweet morinda *(Gligô, Grigô)*	*Morinda lucida* Benth. RUBIACEAE	Anti-malarial in baths and infusions	3

Table 1: Healing flora and traditional medicinal knowledge in S. Tomé (2019)

Conclusions and Outlook

ST residents have faith in the curative powers of nature. During the IGOT scientific mission to ST, the survey included interviews to traditional healers, one of which was also a midwife. They are highly respected women in the island, because they are responsible for childbirth and are also responsible for young babies health troubles, as access to conventional care is reduced by transportation and pharmacy costs. Therefore, the answer to the research question: "How can the city residents solve their mild and chronic health troubles when they lack financial resources for their daily needs, such as food and shelter?" is to use TMK, meaning, traditional medicinal knowledge and healing plant species, exotic or native. The expectation is to feed the database about healing flora from Africa, with fifty-six (56) medicinal species collected during fieldwork, in 2019.

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