

Comparative ethnobotany between the Lesser Antilles and the Guiana Shield Phytotherapies

Marc-Alexandre Tareau

PhD Student at the French Guiana University

I. Introduction

Ethnobotanical Methodology



Herbarium Sample



CAY Herbarium

I. Introduction

Summary

I. Similarities

- a. Common origins
- b. Common species
- c. Disease and treatments

II. Differences

- a. Specific demographic influences
- b. Specific medicinal species

III. Some emblematic species

- a. From Lesser Antilles :

Neurolaena lobata

Pimenta racemosa

- b. From Guiana Shield :

Quassia amara

Carapa guianensis

- c. Common species :

Leonotis nepetifolia

Senna alata

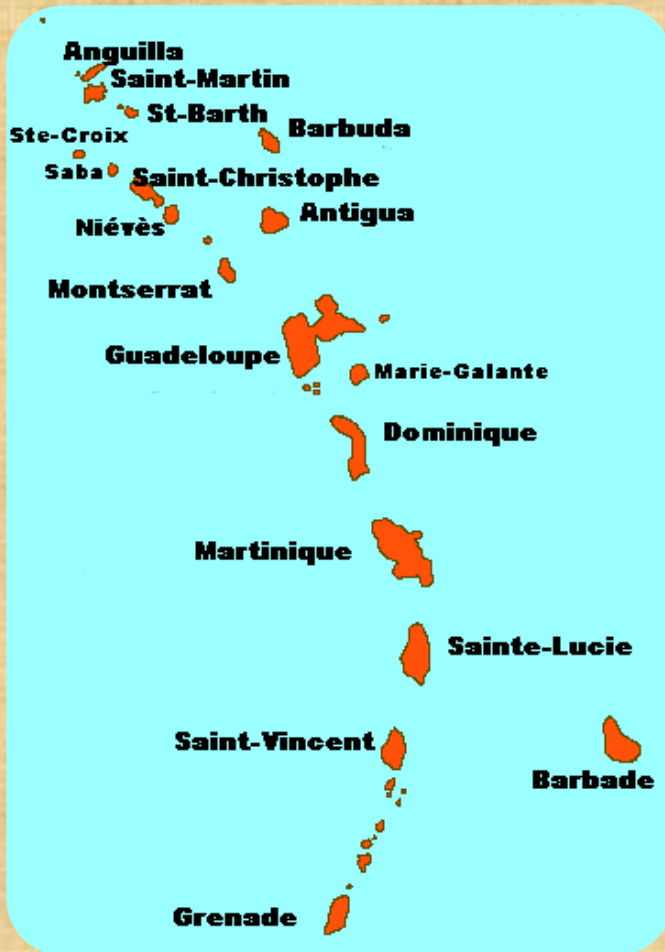
I. Introduction

Bibliographical References

- Clement, Y.N., Baksh-Comeau, Y.S., Seaforth, C.E., 2015. An ethnobotanical survey of medicinal plants in Trinidad. *Journal of Ethnobiology and Ethnomedicine* 11, 67. doi:10.1186/s13002-015-0052-0
- Longuefosse, J.-L., Nossin, E., 1996. Medical ethnobotany survey in Martinique. *Journal of Ethnopharmacology* 53, 117–142. doi:10.1016/0378-8741(96)01425-0
- Grenand, P., Moretti, C., Jacquemin, H., 1987. *Pharmacopées traditionnelles en Guyane: Créoles, Palikur, Wayãpi*, Collection mémoires / Institut Français de Recherche Scientifique pour le Développement en Coopération. Éd. de l'ORSTOM, Paris.
- DeFilipps, R.A., Maina, S.L., Crepin, J., 2004. Medicinal plants of the Guianas (Guyana, Surinam, French Guiana). Department of Botany, National Museum of Natural History, Smithsonian Institution Washington, DC.

Introduction

Geographical landmarks : Lesser Antilles



A volcanic islands arc, between Greater Antilles to the north-west and the continent of South America

Some leeward islands : Virgin Islands, St-Kitts, Antigua and Barbuda, Guadeloupe...

Some windward islands : Martinique, St.Lucia, Barbados, Trinidad and Tobago...

I. Introduction

Geographical landmarks : Guiana Shield



Three countries : Guyana, Suriname and French Guiana

A natural area divided between savannas, on the coast, and amazonian rainforest

A very diverse population : Native Americans, Maroons, Creoles, East Indians, Chinese, Javanese, Haïtiens...

II. Parallels

Native Americans Contributions



Species, like annatto (*Bixa orellana* L.)



Practices, like herbal medicinal bath

II. Parallels

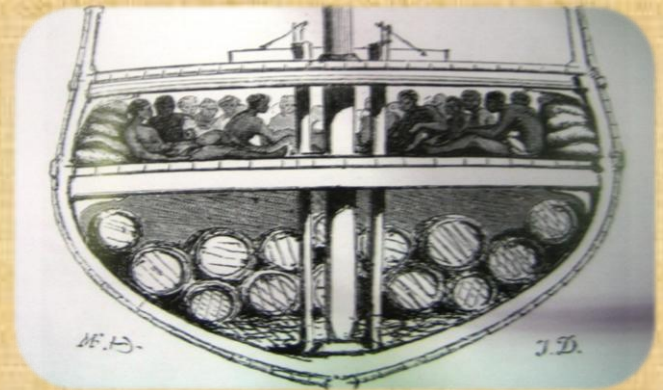
A Colonial History

Plants brought by Europeans



Mango trees in Cayenne

Plants brought by Africans



Pigeonpeas (*Cajanus cajan* L.)

II. Parallels

A Pantropical Pharmacopeia



II. Parallels Diseases

- A « hot and cold » medicine conception
 - Depurative plants for warm excesses
 - Hot plants for cold infection (ginger, cinnamon...)
- « Blood infections »
 - *Cleaning the blood* with depurative or bitter plants
- The « fright » : an english caribbean name for an illness of persistent distress (« susto » in spanish or « sézisman » in french creole)
- Pediatric infections : bronchitis, intestinal parasites, fever, skin aches...

II. Parallels

Main forms of treatments



Cooling herbal teas



Alcoholic macerates



Herbal bath

III. Differences

Cultural Specificities : Indigenous Communities



A Maroon woman in Suriname



A Native American woman in Guyana

III. Differences

Cultural Specificities : Migrant Communities



A neem (*Azadirachta indica*) tree in Suriname



Copaiba (*Copaifera* sp) oil

III. Differences

Environmental Specificities



Vs



Trinidad and Tobago islands, at the south of the Caribbean archipelago, offers a mix of Antillean and South American elements in its flora...

IV. Some Emblematic species

Lesser Antilles : *Neurolaena lobata* (L.)R Br.



Botanical Family : Asteraceae

Herbaceous shrub native of the Caribbean Islands, known there as *zebapik*

Used to treat common cold, fever, diabetes and intestinal worms

Pharmacological studies showed biological activity against infectious organisms, including protozoa, malaria and leishmania parasites, fungi and filarial worm (Clement, 2015)

A pharmaceutical processing chain now exist in Guadeloupe (Phytobokaz laboratory)

IV. Some Emblematic species

Lesser Antilles : *Pimenta racemosa*



The essential oil of the leaves is used in massage for aches, fever and as a cosmetic, in all the Caribbean

The TRAMIL network of researchers showed the antifungal and anti-rheumatic properties of this plant

IV. Some Emblematic species

Guiana Shield: *Quassia amara* L.



Botanical family : Simaroubaceae

A shrub native from Central/South America, often cultivated in the home gardens

Main vernacular names in the Guiana Shield : kwasi (bita)

Leaves and wood are used as a digestive, a tonic, to treat fever (particulary for malaria) and worms

The component Simalikalactone D was identified as an antimalarial (Bertani, 2016)

IV. Some Emblematic species

Guiana Shield: *Carapa guianensis* Aublet

Botanical Family : Meliaceae

Common name: crabtree

Big tree up to 30 meters tall, occurring in South and Central America primary forests

Seed oil used as an insect repellent and to calm itchings

The bitter decoction of the wood is drunk as febrifuge, vermifuge and inside healing

Triterpenes in seeds and wood have anti-inflammatory and bactericidal properties (Grenand, 2004)



Crabtree seeds



Artisanal oil production process



IV. Some Emblematic species

Common species : *Leonotis nepetifolia*
(L.).R.Br.



Botanical family : Lamiaceae

Ruderal shrub, often cultivated, recognizable for its inflorescences in spiky capitulum

Native to tropical Africa and southern India. It can also be found growing abundantly in much of Latin America and the West Indies

Known in the Caribbean and the Guianas as *pompon* or *shandilay*, the leaves are infused as a tea for fever, coughs, womb prolapse, diabete and as an hepatic cleaner

IV. Some Emblematic species

Common species : *Senna alata* (L.)
Roxb.

Botanical family : Caesalpinaceae

Small pantropical tree very common on all open areas

Leaves and flowers traditionally used to treat skin problems, all forms of dermatosis (marks, pimples, chickenpox, eczema, herpes, psoriasis, mycosis...)

Pharmacologists validated its dermatological uses by showing the antiherpetic, antimicrobial, antifungal and antiparasitic activity of chrysophanic acid (Kerharo, 1974)



Thanks you for your attention...

