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Medicinal Knowledge in Cuba – domestic prescriptions using front and backyard biodiversity

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Introduction

For about approximately a decade the Portuguese Tropical Research Institute (IICT) has been interviewing traditional healers, urban gardeners, peri-urban farmers, medicinal herb traders and plant therapists in Latin America, in order to assess usage of local resources and have built-up databases of local knowledge that might provide future generations with alternative ways to deal with health problems. Research also focuses on the socio-economic conditions required for the sustainable management of natural resources, in particular the native vegetable species. It is hoped that such research will promote life quality and adequate medicinal herb management among urban gardeners and plant therapy believers worldwide.

Methods

The sources of data were a sample of fifty interviews conducted in forty-seven (47) households in two La Habana municipalities, Playa and Plaza de la Revolución, possessing front and backyards with the medicinal species Cubans use to mitigate pains and aches, or even to cure more serious ailments. Additionally three (3) herb traders have been observed extensively, and questioned using a semi-structured questionnaire, in order to access the healing species preferences among the residents of the Cuban capital city, for public health care institutions lack funding and conventional medicine treatments such as pharmaceutical drugs are often unavailable, resulting in the need for alternative herbal remedies. The data for the medicinal plants (60 species) was extracted from Roig y Mesa (1974, 1988) and Fuentes and Grandas (2007). A summary of taxonomic and medicinal knowledge is provided in Figure 1, which incorporates the 20 most consumed species of those that have been researched in the field (plus universal Aloe). Common names are in Spanish, exactly as they have been collected during the interviewing process, followed by the binomial that makes up the scientific name together with the abbreviation of those botanists who identified and classified the plant species.

Results

A fundamental part of the Portuguese Tropical Research Institute's work has consisted of research into ethno-botanic medicinal species, and the dissemination of those ancestral traditions that are still used by indigenous communities. The majority of the households interviewed (62%) in Havana, Cuba, contained at least one person over sixty years old, normally female, who was very keen to engage in detailed explanations of domestic prescriptions. Cuban families use both cultivated and wild species, ranging from small window vases, street shading trees and bushes in

front and backyards, to the exploitation of vacant neighbouring plots. The collection of wild herbs requires a certain amount of traditional knowledge that is usually confined to the elderly. Tilo (*Justicia pectoralis*) was the most consumed and cultivated herb, an anti-flu and anti-stress species that grows to half a metre and is dispersed throughout the Caribbean islands. Paraíso (*Melia azederach*) was the most traded specimen in the La Habana Vieja trading posts that were studied, which is used in Cuba for cataplasms and septic baths and is recommended for a series of skin diseases, including ancestral conditions such as leprosy. Previous research undertaken on Easter Island (MADALENO 2007 a) has revealed that Miro Tahiti (the common name for *Melia azederach* in the Pacific setting) was used in leaf infusions together with parsley, and is traditionally employed to cure gonorrhoea and scabies.

The second most abundant herb in front and backyards was Cuban Chamomile (*Isocarpha atriplicifolia*) a highly effective analgesic. Its single use is recommended to wash out the eyes in the case of conjunctivitis, or combined with Quita Dolor (*Lippia alba*), (curiously the most abundant herb in Belem, Brazil) and ingested to counteract stomach aches, indigestion and diarrhoea. *Aloe vera* followed, providing the most ingenious prescriptions collected so far. Cuban women freeze small portions of the Aloe's juice and administer it intravaginally. They also take the refrigerated preparations orally as domestic capsules against tumours and stomach ulcers, or use the fresh leaf stem juice to heal scars and skin infections. The unavailability of pharmaceutical drugs, and the lack of financial resources to buy cosmetics, leads to other remarkable skin applications such as: frictions and cataplasms of Cordobán (*Rhoeo discolor*) to treat wounds; anti-herpes septic cataplasms and frictions of Guacamaya Francesa (*Cassia alata*); lice repellent hair washing with Majagua leaves and flowers (*Maga cubensis*); a concoction of Cuban Chamomile (*Isocarpha atriplicifolia*) is applied in the case of baby rashes; anti-rheumatic baths of Siguaraya (*Trichilia havanensis*); cataplasms of macerated Verbena leaves (*Verbena officinalis*) in the case of skin eruptions and aching arthritis; anti-herpes simplex latex applications from the Yagruma tree (*Cecropia peltata*).

Results proved to be quite similar to those from other cities and metropolitan areas that have been investigated, starting with Belem (Brazil) in 1998 and 2005, followed by Santiago (Chile) from 2002 to 2005, Mexican Central Metropolitan Region in 2004 and 2006 and Lima (Peru) in 2006. In July 2009 another scientific mission to San Jose (Costa Rica) further enriched the Portuguese Tropical Research Institute's Latin American database of traditional medicinal knowledge.

Discussion

MacArthur and Wilson's (1963) theory of island biogeography claimed that the number of species found in an isolated ecosystem was the function of the local species plus those gained through immigration and speciation minus those species that have gone extinct. Of course the immigration rate declines as a function of distance to other islands and continental masses, whilst diversification is greater on larger islands (WHITTAKER, TRIANTIS AND LADLE, 2008). Cuba is the widest Caribbean island and it stands relatively close to both the other island systems and to the main North American continent, particularly the peninsula of Florida. Additionally, Cuba's northern coast line faces the Atlantic Ocean and the southern shores face the blue and green waters of the Caribbean Sea. Consequently taxa are quite rich and diverse within the whole Cuban island area, and in most instances the medicinal vegetable species that have been field researched are dispersed throughout the other Caribbean islands, which are chained at close range by sea currents, together with tropical and subtropical species also present in Florida and the Bahamas, that are spread by the trade-winds. The complexity of Cuba island biotas was enhanced with European, mostly Mediterranean, healing species introduced by the Spanish colonisers. Endemic therapeutic herbs are rare but native species are rather numerous, their common name being at times similar to completely different Mediterranean trees and bushes. Common names date from the early years of colonisation and have persisted because the given name was that of a European species that possessed matching medicinal applications. This fact constitutes a

comparable result to research undertaken in Chile, Peru, Brazil, Costa Rica and Mexico, within the framework of local species and healing practises observed in Latin American metropolitan regions (MADALENO, 2006, 2007b, 2009).

Common name	Scientific name	Species characterisation	Plant part used	Medicinal application	Origin
Abre Camino	*Eupatorium cubense* DC.	Bush	leaves	cough diarrhoea	Cuban
Albahaca Morada Criolla	*Ocimum sanctum* L.	Herb	leaves	diabetes	Tropical Regions
Almácigo	*Bursera simaruba* Sarg.	Tree	Roots, bark, leaves	Flu, fever, indigestion, cataplasms	Florida, Caribbean, Central America
Bejuco Ubí	*Cissus sicyoides* L.	Bush	leaves	Cough, high blood pressure	Tropical American
Copal	*Protium cubense* (Rosc) Urban.	Tree	leaves	Cough, flu	Cuban
Cordobán	*Rhoeo discolor* (L'Her.) Hance	Herb	leaves	Asthma, cataplasms	Florida, Bahamas, Caribbean
Guacamaya Francesa	*Cassia alata* L.	Bush	leaves and flowers	Haemostatic, herpes	Caribbean
Mandarina	*Citrus reticulata* Blanco	Tree	leaves and fruits	Tumours	Asian
Manzanilla Cubana	*Isocarpha atriplicifolia* R. Br.	Herb	leaves	Stomach aches, diarrhoea, eye infections	Cuban
Marilopez	*Turnera ulmifolia* L.	Bush	leaves and flowers	Haemostatic, digestive, anti-stressing	Caribbean
Mastuerzo	*Lepidium virginicum* L.	Herb	whole plant	Diuretic, rheumatism	North and Central America
Mejorana	*Mejorana hortensis* Moench.	Herb	leaves and flowers	Digestive, cough, flu, carminative	Mediterranean Europe
Oregano de la Tierra	*Hyptis Americana* (Aubl.) Urb.	Herb	leaves	Flu, cough, ear infections	Tropical American
Paraíso	*Melia azederach* Rauch	Tree	whole plant	Diuretic, fever, strong narcotic, cataplasms	Asian
Pino Macho	*Pinus cubensis* Griseb	Tree	fruit	Analgesic	Cuban
Romerillo	*Bidens pilosa* L.	Herb	Leaves, flowers, roots	Tooth aches, flu, cough	Tropical Regions
Salvia	*Salvia officinalis* L.	Herb	leaves	Flu, stomach aches, anti-stressing, fever, diabetes	European Mediterranean Regions
Siguaraya	*Trichilia havanensis* Jacq.	Bush or small tree	leaves and bark	Rheumatic pains	Cuban
Tapón	*Euphorbia pilulifera* L.	Herb	whole plant	Diarrhoea, abortive, asthma	Caribbean
Tilo or Tila	*Justicia pectoralis* Jacq.	Herb	leaves	Tranquiliser, cough, flu, haemostatic	Caribbean

Figure 1: Summary of the fieldwork data obtained during the 2009 scientific mission to Cuba

Conclusions and Outlook

Cuban medicinal flora is dominated by a mixture of herbs and bushes, taxa being frequently Labiatae and Compositae. The plant parts used in infusions, decoctions and macerated preparations are chiefly the leaves. External applications vary more widely from concoctions of flowers and leaves to barks, latex and stem juices frictions (or pastes) and cataplasms. Comparing these results with published data from other investigations into Latin American front and backyard biodiversity, there is some variation in the ethno-botanic index, for the local species are abundant. Over 20 different families have been registered in the Cuban database. There is a good proportion of tropical American genus, including the dominant species from Brazilian and Peruvian Amazon Regions. Following the Caribbean varieties, Mexican medicinal flora constitutes the second most popular presence in Havana front and backyards. Contrary to initial expectations, African taxa proved to be of lesser importance, even though outlawed and highly repressed 'santería' practices have managed to survive.

Improvements to the database could result from additional Caribbean island scientific missions, aimed at establishing comparisons of the applications of the same plant species through the island group. Because of their cultural diversity, Caribbean islands are particularly promising case-studies, for besides the long Spanish colonisation, British, Dutch and French influences are evident. The African continent might also be studied as a source area for imported medicinal species together with the ancestral healing practices of the former sugar plantation slaves. The expectation is that more field research might be conducted by geographers, botanists, pharmacists and anthropologists so as to permit the full recovery of domestic prescriptions worldwide.

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