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Food and herbal remedies consumed in Manila, The Philippines

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Introduction

The over 7000 Philippine islands sprawl above the Equator, from 4º to 21º North, and in total area they are larger than Britain. Manila is a warm tropical capital city that presents two contrasting seasons; it is located in the western coast of Luzon (14º N) island, considered the rice granary of the Philipines (Zaide, 2013). In fact, rice was already mentioned as staple food by the early catholic missionaries (Sedeño, 1582, Chirino, 1604), as Chinese traders settled in these islands long before the Spaniards. This secondary information was gathered in manuscripts explored in Rome and in Manila, during two subsequent scientific missions. The testimonies also state that corn, together with sweet potatoes and soursop, were introduced during the 16th century, through the Pacific route established from New Spain (Mexico) to the archipelago. This contribution aims to compare the food and herbal remedies consumed in the early days of European colonisation with the fruits, vegetables, tubers, herbs, spices and medicinal plants preferred in our time, following previous research conducted in Asia and in Latin America (Madaleno, 2013, 2014, 2015).

Material and Methods

The research process was twofold: i) examination of 16th and 17th century manuscripts in European and Philippine archives and libraries, in 2014 and 2015, so as to identify the food, spices and medicinal flora consumed in Manila in the early days of European colonisation; ii) application of surveys in Manila, in the first half of 2015, to three categories of informants, in order to evaluate and identify current food and medicinal flora consumption. Fifty semi-structured interviews were gathered by the author, at the service of the Portuguese Tropical Institute (IICT), now in process of integration with the University of Lisbon (UL): 1) Food and health gardeners from the Public Schools; 2) Formal and informal fruit, spices, tubers, roots, and herbal remedies traders; 3) Massage therapists that applied oils, creams and herbal preparations to external ailments. The hypothesis of research was that European colonisation had beneficial effects in the diffusion of staples and generated new approaches to nutrition, in the Philippines, promoting altogether the cultivation and consumption of exotic plant species used to heal.

Results and Discussion

First Result: The old manuscripts examined gave way to a total of 15 distinctive vernaculars, two thirds of which were consumed as food, as follows: i) six (6) were staples and sweeteners, like sugar cane, rice, bamboos, sweet potatoes, wheat and corn; ii) five (5) were fruits, such as soursop (*Annona muricata)*, coconut, shaddock, banana and sweet oranges); iii) one was a spice

called dabdab (*Erythrina indica*); iv) another was a valued medicine, the native cinnamon (*Cinnamomum cassia*); v) one other was used to make clothes (cotton); vi) and the last was a large ornamental tree, balete (*Ficus urostigima*). Table 1 lists only the six native Asian taxa that are still in use, in Manila, which permits easier comparisons between current and old uses, as observed and reported by early missionaries. Emphasis should be given to the first three multipurpose plants listed, and to the fact that fruits and vegetables were abundant in the archipelago. Early European coloniser's uses were far more varied than the ones recorded in our time. The scientific identification and the search for the geographical origin of the plant species followed the Missouri Botanical Gardens norm, and a manual of tropical fruit culture (Mendes Ferrão, 1999-2002).

Vernacular name (*English*)	Scientific name FAMILY	Uses in the 16th and 17th centuries	Current uses
Bamboo	ARUNDINARIEAE	Food and construction	Expectorant. Also consumed as food.
Banana	*Musa* spp. L. MUSACEAE	*"Trees, fruits, vegetables, and garden-stuff are abundant – especially bananas, of which there are as many different kinds as in Europe there are varieties of apples".*	Tree grown in the Philippines, for fruit consumption
Coconut	*Cocos nucifera* L. ARECACEAE	The islands have big quantity of *"grapes"* and *"the grapes are the palm trees",* in a reference to the inflorescence of the coconut tree. *"The fruit gives milk",* from the minced pulp and from the kernel the oil is distilled. *"The palms, of which there are many and varied species, (...). For beside the many other uses and advantages of this tree, it yields wine, vinegar, and oil in sufficient quantities (...) especially furnishing wine to Japan, Moluccas and New Spain* (Mexico)".	The coconut water is drank. The coconut oil nourishes scalp and it is sexual lubricant.
Orange	*Citrus sinensis* (L.) Osbeck RUTACEAE	Fruit consumed of which there were "*six or eight species*".	Fruit consumed in Manila
Pomelo *Shaddock*	*Citrus maxima* (Burm.) Merr. RUTACEAE	Fruit consumed "*as large as a melon*".	Fruit widely appreciated in Manila with salt or vinegar
Rice	*Oryza sativa* L. POACEAE	Staple food	Energising seed infusion, improves bowel movement, ulcers, and hyperacidity. Staple food.

Figure 1: Food and herbal remedies consumed in the early days of European colonisation and in 2015, in Manila, The Philippines

Second Result: The 2015 survey permitted the botanical identification of 134 different vernaculars. More than half of these plants (69 species) have medicinal uses as herbal remedies; about 42% of the identified plants are consumed as food; of these, 27% are fruits, mostly native Asian species. Table 2 lists the top-ranking plants consumed in Manila, according to the sample extracted. A quick reading of the data offered in the table shows that it is difficult to separate food from medicinal consumptions, as staples like sweet potato (9 occurrences) and corn (8) are both food and medicines, meaning, they are nutraceuticals. Stress should go to the fact that they have American origin, and were introduced by the 16th century Spaniard settlers as they kept their vernacular in this idiom, respectively *camote* (or kamote) and *mais*.

Common name (*vernacular*)	Scientific name	Nº of occurrences (Total 50)	Uses	Nº of species consumed as food
Apples	*Malus asiatica* Nakai ROSACEAE	11	Moisturizing body lotions. Fruit appreciated.	9
Lemmon	*Citrus limon* (L.) Osbeck. RUTACEAE	11	Fruit used to cook, in traditional medicinal prescriptions and in lemonade.	-
Ginger *Luya*	*Zingiber officinale* Roscoe ZINGIBERACEAE	11	Root infusion against sore throat, nausea, cough, rheumatism, arthritis, indigestion. Consumed with salt cleans the tongue and throat. Spice.	-
Cabbage	*Brassica oleraceae* L. BRASSICACEAE	10	Cooked in several local and Chinese dishes	10
Sweet Potato *Camote, Kamote*	*Ipomoea batatas* (L.) Lam. CONVOLVULACEAE	9	Tuberous root consumed boiled, the leaf is hypoglycaemic.	7
Mangoosteen	*Garcinia mangostana* L. CLUSIACEAE	9	The peel of the cooked fruit heals skin problems and soothes the skin. The fruit together with the leaf is consumed against diabetes, and as anti-oxidant.	9
Melon	*Cucumis melo* L., CUCURBITACEAE	9	Fruit is food	9
Onions	*Allium cepa* L. AMARYLLIDACEAE	9	Consumed in cooked dishes and raw	9
Manderine *Mandarina*	*Citrus reticulata* Blanco RUTACEAE	8	Fruit is food	8
Mango *Mangga*	*Mangifera indica* L. ANACARDIACEAE	8	Decoction of the bark applied in hot compress in joint pains and rheumatism. The leaf is antibacterial. The fruit is eaten raw and prevents constipation; unripe is cooked	7
Malunggay	*Moringa oleifera* Lam. MORINGACEAE	8	Consumed against ulcers, as anti-oxidant, to lower high blood pressure, against asthma, diabetes, male impotency, joint inflammation, to strengthen the immune system, boosts energy, as anti-tumour.	-
Green tea	*Thea sinensis* L. THEACEAE	8	Consumed for weight-loss and applied in soothing body lotions	-
Corn *Mais*	*Zea mays* L. POACEAE	8	The grain is eaten in dishes and the dried leaf is consumed in infusion against rheumatism, after meals	6

Figure 2: Summary of the fieldwork data obtained during the 2015 scientific mission to The Philippines – the top ranking species registered in Manila, the capital city.

As to the fruits registered as preferences in consumption, most have Asian origin; examples are: apples and lemons (11 occurrences); melons and mangosteens (9); mangoes and manderines (8); shaddocks and bananas (7), sweet oranges (6 occurrences). However, American fruits come next, namely: papayas (*Carica papaya*, 7 occurrences); pineapples (*Ananas comosus*, with 5); *guayabano* or soursop (with 6); guavas (*Psidium guajava,* with 5 occurrences); and others with smaller expression, as avocados (*Persea Americana*); cocoa (*Theobroma cacao*); and passion fruit (*Passiflora edulis*). Again we comment that most fruits have mixed uses as food and medicine, the Asian (except for melons and manderines) as the American natives. Ginger is the top-ranking rhizome used both as medicine and spice, as was found in Goa, India and Malacca.

Third Result: Several exotic plants kept their European vernacular, even though there were other later influences, such as the North-American. Used exclusively as medicine is mint, an herb brought by early settlers together with the Spanish vernacular *Yerba Buena*. It is consumed in infusions against fever, arthritis, headaches, and flatulence. A vast array of other European medicinal herbs are used in Manila, such as roses, *tusilago* (*Tusilago farfara*), rosemary and thyme, the last two consumed solely as spices. However, due to the economic importance of the Chinese community, their traditions in medical treatments are preferred in Manila and prove frequently less expensive than modern western pharmaceutical offer (Gao, 2013).

Regarding local herbal remedies, emphasis goes to: 1) cogon grass (*Imperata cylindrical*), an invasive tropical weed that is cooked in soups against diabetes and to lower cholesterol; 2) the *banaba* tea (*Lagerstroemia speciosa*), consumed to lower sugar levels, against obesity, constipation, cancer, fever, jaundice, kidney inflammations, and diarrhoea. Called *banaba* in the "Tagalog language of the Philippines, this tropical tree is found in many parts of Southeast Asia, but only in the Philippines are the dried and shredded leaves known to be used as a treatment for diabetes and kidney disease. Pharmacological trials conclude the leaves exhibit anti-adipogenic properties but the benefic effects in diabetes treatments are still under examination" (Klein et al, 2007, 401-402). Because of the availability of anti-diabetes species, mention also goes to: 3) *yacón* (*Polymnia sonchifolia*), another tuberous root traded on the streets of Manila that was imported from South America, where a previous IICT mission recorded similar use, in Lima, Peru (Madaleno, 2013); 4) *amargosa*, Spanish designation of the African vine *Momordicca charantia,* a cucurbitaceae consumed against diabetes, rheumatism, and hypertension. In San José, Costa Rica, the vernacular was *sorosi*, and the recommendation to lower sugar levels was the ingestion of infusions of the leaf and flower (Madaleno, 2013).

Conclusions and Outlook

The results confirm the hypothesis of the research, as it was found that European settlers effectively and beneficially contributed to the diffusion of exotic plant species in the Philippines. Hope is further research will be conducted in Manila on the issue of medicinal flora consumption.

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