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THE INTRODUCTION OF NUTMEG
(*MYRISTICA FRAGRANS* HOUTT.) AND CINNAMON
(*CINNAMOMUM VERUM* J. PRESL) TO AMERICA

La introducción de la nuez moscada (*Myristica fragrans* Houtt.)
y de la canela (*Cinnamomum verum* J.S. Presl) en América

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Abstract

This paper documents that the first specimens of the economically important nutmeg tree did not reach the New World until 1773, while the equally valuable cinnamon tree had been transferred to a Caribbean island by 1762. These dates can serve to interpret a recently discovered manuscript by the French botanist Jean Baptiste D'Arnault in which he claimed to have collected nutmeg and cinnamon in the Lesser Antilles or Venezuela in 1767 (Lindorf 2001, 2002).

Key words: Nutmeg, *Myristica fragrans*, Cinnamon, *Cinnamomum verum*, Economic botany, America, Eighteenth Century

Resumen

Este artículo documenta que los primeros especímenes de la nuez moscada, árbol económicamente importante, no llegaron al Nuevo Mundo antes de 1773, mientras que el árbol de la canela, igualmente valioso, fue transferido a una isla del Caribe en 1762. Estos datos pueden contribuir a interpretar un manuscrito recién descubierto del botánico francés Jean Baptiste D'Arnault, en el cual él afirmaba haber coleccionado nuez moscada y canela en las Antillas o Venezuela en 1767 (Lindorf 2001, 2002).

Palabras clave: Nuez moscada, *Myristica fragrans*, Canela, *Cinnamomum verum*, Botánica económica, América, siglo XVIII

In the National Archives of Venezuela (Caracas) recently a document was brought to light that contains a list of plants collected in 1767 by the botanist and surgeon Jean Baptiste D'Arnault in either the Lesser Antilles or Venezuela (Lindorf 2001, 2002). Nutmeg and cinnamon are amongst the plants of economic importance mentioned in this document, thus giving occasion to reevaluate the date of the introduction of these species to America.

Nutmeg, the shelled seed, and mace, its aril, are two valuable products derived from the tree *Myristica fragrans* Houtt. (Myristicaceae) that have been

highly coveted for their aromatic and medicinal properties since at least the beginning of the common era (Flach & Tjeenk Willink 1999). The nutmeg tree is indigenous to the small group of Banda islands in the southern Moluccas (de Wilde 1990, 2000), and until the eighteenth century its cultivation remained restricted to this area, except for small numbers of trees on other close islands, primarily in the Moluccas (Warburg 1897a, b). The reasons for this restricted range were of both botanical and political nature. *Myristica fragrans* has very exacting edaphic and climatic requirements, being adapted to a rich, well-draining volcanic soil and year-round rainfall. In addition, the viability of nutmeg seeds falls rapidly and was intentionally further reduced by treating all nutmegs with lime before they entered the trade, thus making it very difficult to send viable seeds over long distances (Ridley 1912). The high profits that were for long periods reaped from the trade in nutmeg and mace were a strong incentive for the Dutch colonial authorities occupying the Moluccas to defend their monopoly by all means possible. This was accomplished by a policy of aggressively extirpating stray trees and strictly forbidding the movement of nutmeg plants to other islands of the Indo-Malaysian archipelago and beyond.

Any evidence of *Myristica fragrans* growing in America must be due to an introduction, but as Lindorf (2002) pointed out, much of the literature is far from cogent on the date of this introduction which is relevant to assess D'Arnault's report of nutmegs. From about the beginning of the eighteenth century it had been one of the declared goals of French colonial policy to transplant spice plants to its own territories, and in 1750 a price of twenty thousand pieces of silver was offered to the person who would bring twenty-five nutmeg plants to the southern Indian port town of Pondicherry under French control. The naturalist and adventurer Pierre Poivre (1719-1786) succeeded in procuring small numbers of nutmeg plants and transporting them to Isle de France (Mauritius) in 1753 and 1755 (Ly-Tio-Fane 1958; Drayton 2000). However, from these early shipments only two nutmeg plants survived, and in 1769 Poivre embarked on a new clandestine mission to the Moluccas which finally brought significant quantities of nutmeg plants and seedlings to Isle de France in June 1770 (Warburg 1897a). His first voyage was followed by a second successful collection trip to the Moluccas from 1771 to 1772 (described in detail by Sonnerat in 1776) which definitely brought an end to the Dutch nutmeg monopoly. From this brief chronology it is apparent that there is no corroborative evidence that by 1767, when D'Arnault claimed to have collected nutmegs in America, plants of *Myristica fragrans* had already been transported west beyond the Indian Ocean.

While as early as 1763 after the setbacks of the Seven Year War a transfer of spice plants to French Guiana had been envisaged in order to strengthen France's colonial position in the West Indies (Ly-Tio-Fane 1970), such a programme was only set in motion in 1771 when the Minister of Marine in Ver-

sailles contacted Poivre insisting that nutmeg specimens be sent to Isle de Cayenne. These eventually arrived there after a sixty-four days' sea journey from Isle de France on 3rd of February 1773 which can therefore be considered the date of the introduction of *Myristica fragrans* to America (Warburg 1897a; Ly-Tio-Fane 1958). The earliest preserved botanical collection of *Myristica fragrans* from America (now in the British Museum herbarium) occurred no sooner than 1784 by the Prussian born naturalist Julius von Rohr (*ca.* 1735-1793) in Danish service who collected male flowers on Isle de Cayenne from an approximately five year old tree (Warburg 1897a, b; Hopkins 1998 and pers. com.).

There is some evidence that in the 1770's a French shipment of nutmeg plants fell into British hands on its way to Isle de Cayenne. If so, these plants were probably transferred to the Botanical Garden of St. Vincent which had been established in 1765 to assist in the introduction of exotic plant species, but there is no indication that any of these plants survived (Warburg 1897a). A *bona fide* introduction of *Myristica fragrans* to the Lesser Antilles did not occur until 1802 during the Peace of Amiens when it was possible to smuggle two young specimens of the 'true Nutmeg Tree' from Isle de Cayenne to St. Vincent (Guiling 1825).

If the date of the introduction of *Myristica fragrans* to America can be fixed with sufficient certainty in 1773, one must conclude that D'Arnault misidentified the 'nutmeg' plant he apparently observed in 1767. In this case it would be difficult to determine which plant exactly his note refers to. A possible clue is encountered in the 'Account of the Garden at St. Vincent under the Care of Dr. George Young' that contains a list of plants growing in this Garden in 1773 (Howard 1996). It mentions a 'Tobago nutmeg' which in light of its epithet cannot be the Moluccan nutmeg, but might instead refer to the 'Calebassa nutmeg' of West Africa. These were the aromatic seeds of *Monodora myristica* Dun. (Annonaceae), also known as 'Jamaica nutmeg', that had reached the Caribbean at an undetermined point with the slave trade (Warburg 1897a). Another surrogate for nutmeg in reach for D'Arnault was the pichurim nut derived from *Nectandra pichurim* (Kunth) Mez. (Lauraceae) which is distributed from Mexico to southern Brazil. As early as 1759 the seeds of this tree had reached Portugal as *fava pecaïro*, but never became a trade object of much significance except during the Napoleonic Wars when the price of nutmeg spiked (Warburg 1897a; Lindorf 2002). Other plants in the region with aromatic qualities reminiscent of nutmeg exist, but given the lack of details in D'Arnault's report any ascription must remain speculative.

If great scepticism is in order regarding a collection of nutmeg by D'Arnault, this is less so the case for cinnamon which found its way to America before nutmeg. Cinnamon is the aromatic bark of *Cinnamomum verum* J.Presl (Lauraceae, syn. *Cinnamomum zeylanicum* Blume) and, unlike the nutmeg tree, the

cinnamon tree is easily propagated by seeds or vegetative means (Flach & Siemonsma 1990). Since the Dutch conquered Sri Lanka in 1658 they also held the monopoly on cinnamon, but in 1752 a Commander of the French station in Karikal near Pondicherry was able to spirit cinnamon plants to Isle de France (Drayton 2000). It appears that in 1762 specimens of an unknown source were already growing on the Island of Guadeloupe (under temporary British control from 1759 to 1763, but thereupon with the Treaty of Paris returned to France in exchange for French interests in Canada), for in this year the British Society of Arts offered a prize of £100 to the first person to plant on a British island 'the true cinnamon tree which now grows in the Island of Guadeloupe' (quoted in Drayton 2000). By 1768 two trees had been sent from Guadeloupe to the British Botanical Garden of St. Vincent where, after a subsequent importation of seeds, eventually 140 plants were thriving (Howard 1996). Further plants were most likely also sent together with nutmeg and clove (*Syzygium aromaticum* (L.) Merr. & Perry; Myrtaceae) trees to Isle des Cayenne after 1772 (Warburg 1897a).

Given that D'Arnault had visited Guadeloupe he could have readily encountered specimens of true cinnamon on this island. Alternatively, it is possible that his note refers to material collected from a different species with aromatic qualities similar to cinnamon as part of the long-standing and often confused, if not fraudulent quest to identify a *canela americana* (Steele 1964; Lindorf 2002).

Open questions not only remain with respect to some of D'Arnault's plant identifications, but also on the true nature of his mission. The authorities in Caracas accused D'Arnault's and his travelling companion of being military spies. A witness at the enquiry claimed that D'Arnault had been hired by the British authorities to collect plants in order to help create a Botanical Garden in Grenada (Lindorf 2001). Since no botanical endeavour was planned for Grenada at the time (Ly-Tio-Fane 1996; McCracken 1997), this statement plausibly referred to the new Garden founded in neighbouring St. Vincent in 1765 (Howard 1996). D'Arnault himself maintained that he had been hired by a merchant from Martinique to acquire plants (Lindorf 2001).

During this period of national rivalry in the field of economic botany it cannot come as a surprise that D'Arnault, as a French botanist with contacts to British possessions, fell under suspicion by the Spanish authorities in Venezuela. However, unless further documentary evidence is uncovered on D'Arnault, it will remain unclear whether his activities in the Lesser Antilles and Venezuela reflect more than those of merely a plant collector.

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