‘Hortus Malabaricus’ or ‘Hortus Europae in Malabarica’? Situating the Hortus Malabaricus in the history of Malayali Botany and the Dutch Empire

Kuppa, Meghana Venkata Ms.

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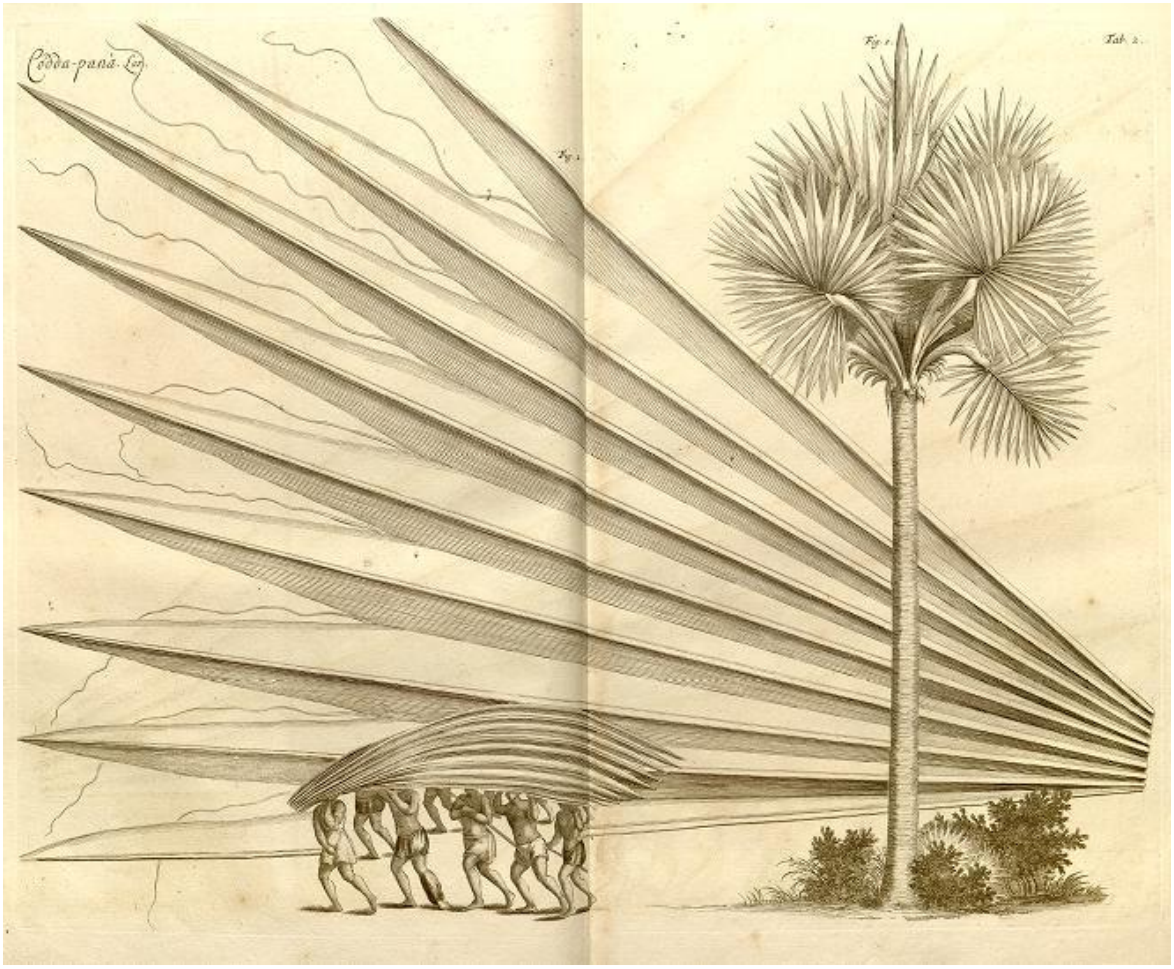

An illustration of an artistic Malabari landscape with Malayali men carrying a broad branch of the Codda-Panna tree,
Hortus Malabaricus vol. 3

Meghana Venkata Kuppa
(meghana.kuppa@yahoo.com)
2828251

Leiden University
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Dr. Fenneke Sijsling
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Introduction

The task of re-visiting the past is not a simple one, yet it is necessary as A.G. Morton wisely notes: "History constantly needs to be re-written- not in order to supersede the work of earlier historians, itself a permanent part of history- but to enlarge their vision with the new material and the unique illumination proved by later experience[1]." This quote by A.G. Morton, a historian of botany, on the need to frequently review history holds true for this thesis as, I re-examine the Hortus Indicus Malabaricus (hereon Hortus Malabaricus), through the lens of colonial history.

The Hortus Malabaricus is a renowned seventeenth century botanical treatise on the medico-botany of Malabar (present-day Kerala), commissioned by the Dutch Commander of Cochin Hendrik Van Reede between 1678 and 1703. While this text spanning twelve-volumes is commonly referred to as a medicinal and botanical text, weighing in on the production of the Hortus Malabaricus, can we additionally observe the Hortus Malabaricus as a utilitarian text for empire-making?

Building upon existing historiographies on 'Science and Empire' as well as that of the Hortus Malabaricus, through this thesis I examine the extent to which the production of knowledge for the "Dutch Empire" as well as for scientific purposes were intertwined in the seventeenth century. To this end, this thesis is primarily constructed upon two sets of historiographies, with chapter one focusing on the historiography of the Hortus Malabaricus and chapter two entailing that of science and empire, largely emphasising on the sub-discipline of botany and empire.

By doing so, the first two chapters help establish context to reflect upon the historiographical debate of why, in spite of Van Reede's efforts to make the production of the Hortus Malabaricus a communal and collaborative effort between the Dutch and Malayalis, the monumental text is less of a Malayali text and instead rather a colonial production of Malayali knowledge.

Next, with the help of the first two chapters, in chapter three I situate the production of the Hortus Malabaricus within the debate of using botany as a tool for expanding empires to further understand the extent to which the Hortus Malabaricus is a utilitarian text for empire-making.

[1] A.G. Morton, *History of Botanical Science: An Account of the Development of Botany from Ancient Times to the Present Day*. (Academic Pr, 1982), 6

Here, for this case study, I have selected ten plants across the twelve volumes wherein Van Reede goes beyond listing the medicinal use of these plants but also includes commercial or non-medicinal use. Consequently, in this section I delve further into a sub-question- what does the text reveal about the inter-dependent relation between botany, medicine and empire during the seventeenth century?

The introduction of this thesis first briefly introduces the Hortus Malabaricus, following which I discuss my understanding of "empire" and what represents the "Dutch Empire". As my arguments are streamlined around the discipline of science and empire with an emphasis on colonial botany, I also discuss what I interpret as 'colonial' and colonisation of knowledge. Next, I briefly discuss the meaning of western knowledge of 'science', hence distinguishing it from the meaning and usage of the term 'śāstra' in precolonial South Asia.

About the Hortus Malabaricus

The Hortus Malabaricus- which roughly translates to 'the garden of Malabar'- is a rich text of twelve volumes comprising of ethnobotanical and ethnoiatrical knowledge of 742 trees and plants from Malabar, located on the West Coast or 'Malabar Coast' in South India.

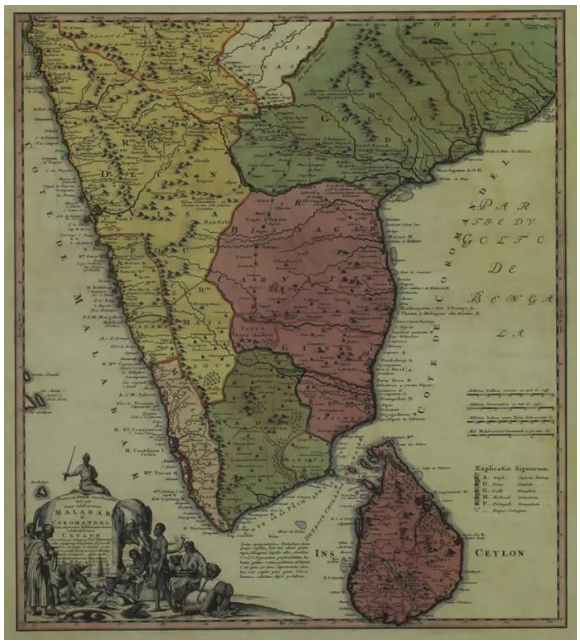


Fig.1 Map of the Coasts of Malabar (the west coast of the Indian peninsula marked in yellow), Coromandel and Ceylon (now Sri Lanka) by cartographer Johann Baptist Homann, c.1733 (© Sarmaya Arts Foundation)

Published in Amsterdam between 1678-1693, the Hortus Malabaricus was compiled by Hendrik Adriaan Van Reede tot Draakenstien, the Dutch governor-general of Cochin (Kochi) during 1667-1676. These twelve volumes are considered to be one of the oldest and most

comprehensive texts of botanical knowledge from the tropics of South Asia. Originally, all volumes were of double-folio size, printed in Latin along with 791 copper engravings of plants with descriptions written in five languages- Arabic, Malayalam, Sanskrit, Portuguese and Dutch. The plant descriptions are most interesting as they include the plants' habitus, habitat, provenance, flowering and fruit-bearing seasons. Most descriptions conclude with a discussion of its virtues and medicinal uses by the Malayali. At present, these engravings are preserved in the British Library at London[2].

The text was largely compiled by Van Reede (who after rejecting the plant descriptions offered by European botanist Father Mathew of St Joseph), had the book published with the assistance of a Malayali physician Itty Achuden of the Ezhava caste, and three Brahmis- Ranga Botto (Ranga Bhatt), Vinaique Pandito (Vinayaka Bhatt) and Apu Botto (Apu Bhatt). Accompnaying collaborators have been mentioned in the preface of the first volume: Johannes Casearius, Arnold Syen, Jan Commelin, Johannes Munnicks and Abraham van Poot.

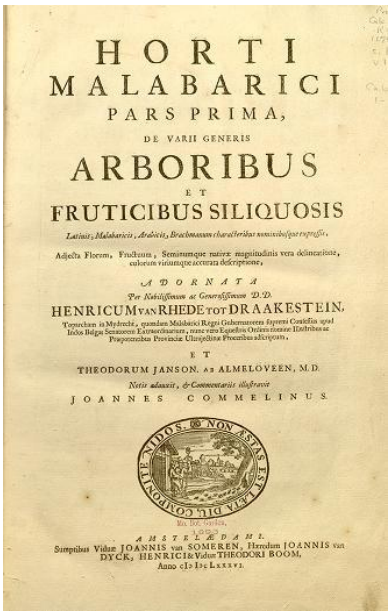


Fig. 2, 3, 4(L-R): Illustrations from the Hortus Malabaricus depicting Hendrik Van Reede (in fig 2.), the cover page of the Hortus Malabaricus in Latin seen in Vol. 1 (fig.3) and a visual representation of 'garden of Malabar' with Malayali and European drawings of men and women (fig. 4)

Besides these medicinal uses, several plant descriptions also provide an insight into the commercial usage of these plants.

[2] Marian Fournier, "Hortus Malabaricus of Henrik Adriaan van Reede tot Drakestien" in *Botany and History of Hortus Malabaricus*. Ed. K. S. Manilal (Balkema, 1980), 11

The genesis of the Hortus Malabaricus and the complications surrounding it form a significant aspect in the study of the treatise, which Van Reede elaborates in the preface to volume three. Hence, by closely studying this preface, I have dedicated the entirety of chapter one to elucidating a comprehensive examination of the history of making and publishing these twelve volumes. There, I shall discuss the book history, historiography and recent research undertaken on the Hortus Malabaricus, and why this botanical treatise is relevant to examining the structural entanglement between botany and empire.

In order to arrive at the thesis hypothesis of exploring the inter-dependent and symbiotic relationship of the Hortus Malabaricus as a scientific and a utilitarian text for empire-making, we first need to understand what the term "empire" represents and what can be said about the making of the "Dutch empire". Next, I look into what is meant by "science" or 'śāstra' in precolonial Malabar and whether or not it can equally translate to the western or English word 'science'.

Terminologies

Colonial Empire and the Dutch Empire

The Dutch Empire comprised of regions overseas and trading posts which were controlled and administered by Dutch chartered companies, mainly the Dutch West India Company (WIC) and the Dutch East India Company (VOC), and subsequently the Dutch Republic till the end of the eighteenth century[3]. Having trading posts yet with little or no territorial rights across powerful Asian empires such as Iran, India China and Japan as well as the West-African coast, the Dutch Empire primarily emerged as a maritime phenomenon with few 'real' colonies in the Carribean, Java, Cape of Good Hope, Ceylon, and for a short time in Brazil, North America and Taiwan[4].

Historiography on the Dutch empire commonly provides an idea that this empire was somehow 'exceptional' and 'different' from other empires[5]. Additionally, historians of the twentieth and twenty-first centuries have often deliberated upon whether the Dutch East India Company or VOC should be regarded as a commercial enterprise or a political entity[6]. This argument of

[3] Johnathan Israel, *Empires and Entrepots: Dutch, the Spanish Monarchy and the Jews, 1585–1713*. (London: Hambledon Press, 2003), x–xii
[4] Piet Emmer, Jos Gommans in *The Dutch Overseas Empire 1600-1800*, (India: Cambridge University Press, 2020.), 1-2
[5] René Koekkoek, Anne-Isabelle Richard, and Arthur Weststeijn, eds., "Introduction" in *The Dutch Empire Between Ideas and Practice, 1600-2000*. (Cham: Springer International Publishing AG, 2019), 5
[6] Emmer, Gommans, *The Dutch Overseas*, 3

exceptionalism has been observed in the recurring claim that the Dutch empire was essentially a maritime 'trading empire' rather than an example of expansionist imperialism, stating that the VOC and WIC were created mainly for economic reasons, and the resulting empire-building was only a contingent consequence of this economic rationale[7].

However, contradicting this claim, historian Cátia Antunes states that the Dutch trading companies closely resembled comparable colonial mechanisms of the Spanish and Portuguese empires, and the Dutch colonial build-up in the seventeenth century was framed in similar terms to those of its Iberian predecessors. Keeping in line with their Iberian predecessors, the Company aimed to impose and claim its sovereignty overseas, thus cultivating a tone of imperialism within their framework[8]. In agreement with Antunes' argument, I further highlight why the VOC in Malabar -for the purpose of this thesis- should be seen synonymous with 'empire'. This can notably be seen in Jos Gommans and Piet Emmer's notable work *The Dutch Overseas Empire*.

Unlike in Gujarat, Coromandel or Bengal, the VOC in Malabar was willing to dominate the region's politics. They began situating themselves in the political theatre in Malabar, not merely to monopolise the existing spice trade, but to also gain absolute power over the Portuguese in Malabar and at Ceylon. Over the course of five strategic campaigns between 1661-1663, under the Governor of Ceylon Rijklof van Goens, the VOC successfully expelled the Portuguese from their regions of governance in Kerala[9]. This was the first attempt by which the VOC aimed to expand control over Malabar as an imperial agenda.

Initially, the Company claimed considerable political and military responsibility in Malabar. Unlike in its other settlements in India, VOC in Malabar attempted to impose an overall production and export monopoly, in concluding contracts with the various Nayar princes to gain an upper-hand over the locals[10]. Moreover, Gommans notes, "in 1663, Vira Kerala Varma was crowned by Rijklof van Goens as King of Cochin, the crown even bearing the VOC symbol! Van Reede was subsequently appointed as the king's stadtholder. The new relationships were laid down in a contract and an 'enduring alliance', where the king had to

[7] Ibid.
[8] Cátia Antunes, "Birthing Empire" in *The Dutch Empire Between Ideas and Practice, 1600-2000*. (Cham: Springer International Publishing AG, 2019), 20
[9] Emmer, Gommans, *The Dutch Overseas,* 304

[10] Ibid., 306

recognise the Company as his 'patron'".[11] Furthermore, Van Reede tried to introduce a brief system of 'divide and rule' by joining forces "against the rising power of the court's Brahmin merchant-bureaucrats and for the preservation of liberties"[12] in an attempt to consolidate sovereignty over few Malabari Kingdoms. While he was only successful in doing so at Cochin and not at Calicut and Travancore, such acts of imposing dominance in addition to creating treaties or agreements with local rulers can be drawn in similar comparison to that of the English East India Company's colonial policies in India during the nineteenth century.

By doing so, the Dutch essentially tried establishing or imposing their sovereignty over the Malabari rulers, hence paving way for asymmetrical power relations to emerge between the two. Colonial empires thrived on such asymmetrical power relations which resulted in the exploitation of the colonised by the coloniser, leading to lack of mutual benefits between the two. While the Dutch held a brief period of imperial reign in Malabar, for the period of time in which I discuss Van Reede, the Hortus Malabaricus with the context of botany as a tool of economic and political expansion during the seventeenth century, I argue that the VOC in Malabar was more than a commercial entity as it possessed the outlook and ambition of an imperial empire.

For a final thought on the terminology of empire and the 'Dutch Empire', Gommans clarifies that the terminology 'Dutch Empire' refers to an empire in which numerous peoples from Europe, Asia, America and Africa actively participated, whether of their own free will or as a result of having been coerced[13].

I concur with Gommans' argument of what constitutes the 'Dutch Empire'. Hence bearing this in mind, for this thesis I use the term 'Dutch empire' by referring to the Dutch Republic in the Netherlands along with the overseas activities of its commercial enterprises- the Dutch East India Company or Vereenigde Oostindische Compagnie (hereon VOC) and West India Company (WIC).

Science and Sāstra

With the understanding of colonial, empire and the 'Dutch Empire', I turn towards understanding 'indigenous' science or science in precolonial South Asia.

[11] Ibid.
[12] Ibid., 303
[13] Ibid., 4-5

Meenakshi Menon a historian of colonial botany of India in her paper *Indigenous Knowledge and Colonial Science in South Asia* argues that the South Asian or Indic term which appears closest to the English word and understanding of 'science' is that of the multivalent Sanskrit term 'śāstra', a word with a wide semantic range, which refers to forms of systematic knowledge that existed in the precolonial period across the region[14]. Sāstra refers to a genre of writing which theorizes the relationship between 'theory' and 'practice' in a way that accords absolute privilege to theory, which always precedes and governs practice, with no dialectical relationship between them[15]. Sāstras represent "any religious or scientific treatise, any sacred book or composition of divine authority" and they found prominence amongst the community of Malayali Brahmins and physicians, who as we will see in chapter one, relied on knowledge deeply rooted in sāstras, which was orally passed through generations.

By drawing parallel studies of śāstra and western knowledge of science, Menon distinguishes the former from European notions of a *prisca sapientia*, the lost knowledge of the ancients, that Johannes Kepler and Issac Newton among others, claimed to have recovered through their theories. According to Menon, śāstric knowledge was never considered lost, as it was eternally existing knowledge that had to be correctly interpreted to produce successful practice. She further argues for distinguishing śāstric knowledge from the relationship between theory and forms of empiricism indicated by the English signifier 'science' as science is suggestive of the study of natural phenomena through observation and laboratory experiment[16].

Therefore, against this context of distinguishing the systems of scientific knowledge from South Asia and the West, for this thesis I use the term Malayali or Malabari scientific knowledge instead of the term 'indigenous' to describe the wealth of ancient knowledge of botany and medicine of Malabar which Van Reede sourced from the Malayali physicians and Brahmins to construct what we now know as the Hortus Malabaricus. Additionally, I use Malayali scientific knowledge instead of Malayali śāstra as śāstra is a wide-ranging term that goes beyond the meaning and inclusion of science. Hence, to be specific I refer to the plant knowledge within the śāstras for this thesis as Malayali scientific knowledge on medico-botany.

[14] Meenakshi Menon, "Indigenous knowledges and colonial sciences in South Asia", *South Asian History and Culture*, vol.13 no.1 (2022): 1-18, 4
[15] Ibid., 4-5
[16] Ibid.

With this understanding of the Dutch empire, western science and Malayali scientific knowledge, I proceed with outlining the chapters, as main focal point of this thesis is to locate the point of intersection on literature between colonialism and Malayali knowledge of botany to understand their entanglement, and to prove the utilitarian nature of the Hortus Malabaricus.

Overview of thesis chapters

Chapter one focuses on two main aspects, firstly it discusses the history of the genesis of the Hortus Malabaricus mainly focusing on Van Reede's preface to the third volume of the book with additional historiography provided by historians such as J. Heniger, Anjana Singh and Harold Cook. The second part of this chapter deals with more modern historiography on the botanical treatise with a 'de-colonised' outlook at reviewing the colonial past. I weigh in on recent historiographical debates provided by Richard Grove, Anjana Singh, Harold Cook and Malavika Binny.

Chapter two incorporates the second set of historiographies that are rooted in the emergence of Science and Empire, later focusing on Botany and Empire. Here I trace the historical entanglement between botany and emergence of empires while focusing on Dutch Colonial botany. Complimenting this context with that of chapter one, I trace the framework of the utilitarian nature of the Hortus Malabaricus for empire-making.

Chapter three is based on the amalgamation of the first two chapters as theoretical context to my research of the Hortus Malabaricus. The first two chapters explain why local botanical knowledge from the tropics became a tool of empire-making which parallelly allowed for the hybridisation of knowledge and the diffusion of 'modern science' around Europe. In this chapter I return to my research question to demonstrate that the Hortus Malabaricus was compiled for utilitarian reasons outside the use of medicine- which Van Reede claimed to be the original intent for compiling such a work. For this case study, I have selected ten plants across the twelve volumes wherein Van Reede goes beyond listing the medicinal use of these plants but also includes commercial or non-medicinal use.

Methodology

This thesis is primarily constructed upon varied yet relevant historiographical literature and a thorough examination of the Hortus Malabaricus itself. For the study and selection of plants, I have used K S Manilal's translated work on Van Reede's Hortus Malabaricus.

After examining 742 plants and their descriptions, I noticed that these plants can be categorised in three ways- first, those that have been recorded but were not in 'scientific' use by the Malayali physicians or that their powers were unknown. Second, plants serving only medicinal purpose and lastly, plants with medicinal and non-medicinal uses. By closely studying the plant descriptions of the third category, I aim to demonstrate how, by publishing the Hortus Malabaricus, Van Reede might have created a new tool for Dutch empire-making with his attention to Malayali scientific knowledge.

Using seminal works of historians of science and empire, and colonial history along with peer-reviewed papers to expand my learning and knowledge of the subject, the overarching method of research for this thesis is of critical and analytical literary examination of (historiographical) sources.

Chapter one: A Book History of the Hortus Malabaricus

The act of European travellers and Company servants visiting tropics overseas and collecting information about the botany abroad was not unique to the seventeenth century[17].

Prior to Van Reede's botanical study of Malabar, from the Portuguese settlement in Goa, Garcia de Orta, inspired by tracing the medicinal properties in plants from the East had published his study of flora from Goa in 1563 titled *Coloquios dos simples e drogas he cousas medicinais da India*. This was notably the first major book on South Asian botany which elucidated the medicinal uses of plants in the region. While it became widely circulated in Latin throughout Europe as the first comprehensive study of indigenous medicine from the East, in the history of botanical studies by Europeans in South Asia, Garcia de Orta's work comes as a close second to the *Hortus Indicus Malabaricus* complied by Van Reede.

From the reason behind the need for such a treatise, to the process of collating Malayali scientific knowledge and to its publication, the Hortus Malabaricus has a rich yet complex history. It is a renowned text in the history of botany and has garnered the attention of several botanists as well as historians of botany alike. Botanists such as Jan Commelin, Francis Hamilton and J. Heniger[18] have published significant commentaries, with Hamilton's acting as a critique on the Hortus Malabaricus[19]. Onward from the 1980s, scholarly research undertaken by historians such as Marian Fournier[20], Richard Grove[21], Harold M. Cook[22], Anjana Singh[23], Malavika Binny[24]and most importantly K.S Manilal's English translation[25] of the lengthy

[17] Richard Grove, "Indigenous Knowledge and the Significance of South-West India for Portuguese and Dutch Constructions of Tropical Nature." *Modern Asian Studies* 30, no. 1 (1996): 121–43.

[18] J. Heniger, *Hendrik Adriaan Van Reed Tot Drakestein 1636–1691 and Hortus Malabaricus*. 1st ed., (CRC Press, 1986)

[19] Francis Hamilton, "A Commentary on the Hortus Malabaricus, Part I" in *Transactions of the Linnean Society of London* vol. 13 (1822), 474-561

[20] Marian Fournier, "Hortus Malabaricus of Henrik Adriaan van Reede tot Drakestien" in *Botany and History of Hortus Malabaricus*. (Balkema, 1980)

[21] Richard Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600-1860.* (Cambridge [etc.]: Cambridge University Press, 1995.)

[22] Harold M. Cook, *Matters of Exchange: Commerce, Medicine, and Science in the Dutch Golden Age.* (New Haven, CT [etc.]: Yale University Press, 2007)

[23] Anjana Singh. "Botanical Knowledge in Early Modern Malabar and the Netherlands: A Review of Van Reede's Hortus Malabaricus" In *Transformations of Knowledge in Dutch Expansion* ed. Susanne Friedrich, Arndt Brendecke and Stefan Ehrenpreis. (Berlin, München, Boston: De Gruyter, 2015.): 187-208

[24] Malavika Binny, "Plants, Power and Knowledge: An Exploration of the Imperial Networks and the Circuits of Botanical Knowledge and Medical Systems on the Western Coast of India Against the Backdrop of European Expansionism", *Global Histories,* Vol. 1, No. 1 (Dec. 2015): 3–20

[25] K S Manilal, *Van Reede's Hortus Malabaricus. English Edition, with Annotations and Modern Botanical Nomenclature* (12 Vols.) (Trivandrum: University of Kerala, Trivandrum, 2003)

treatise has greatly contributed to the wealth of knowledge surrounding Van Reede's work and the region of Malabar.

This chapter first elaborates upon the history and the making of Hortus Malabaricus, then discusses the voices that contributed to the Malayali knowledge in the text so as to set a context for the focal aim of this thesis, which is to analyse the extent of the colonial and Malayali nature of this text. Next, it weighs in on recent scholarship surrounding the Hortus Malabaricus, further emphasising on K.S. Manilal's contribution to de-colonising the codices. Lastly, as a colonial historian-in-training, I argue for its relevance in studying the text with the contextual knowledge of science and empire to better understand how the Hortus Malabaricus can be seen as a utilitarian text for cultural and commercial requirements of the Dutch Empire.

About Malabar, Van Reede and The Hortus Malabaricus

The geographical area of Malabar in colonial texts and sources like the Hortus Malabaricus occupies a larger area than the present state of Kerala. Van Reede himself demarcated the Malabar region as that extending from the city of Goa to the promontory of Comorin (present-day Kanyakumari)[26]. Today, the region that constitutes what was once the centre of Malabar is Kerala which can be identified by the land between Cochin (Kochi) in the North and Travancore (Trivandrum) in the South[27].

From the 2nd century C.E., the region had established maritime trading contact famously with the Roman Empire (as seen through the Muziris Papyrus[28]) and unto the 14th century, the region traded commercially with West Asia, Africa, Southeast Asia and the Far East. After Vasco da Gama's arrival at the port of Calicut in 1498, the region had more intensive contact with Europeans; first the Portuguese, followed by the Dutch, French, Danes and English[29]. Prior to the arrival of Europeans on the spice land of South India, Arabs or Muslims were the chief traders with the Malabari spice market. Opening up of sea routes in the 15th century allowed

[26] K S Manilal, "Preface" in *Van Reede's Hortus Malabaricus. English Edition, with Annotations and Modern Botanical Nomenclature vol.3* (12 Vols.) (Trivandrum: University of Kerala, Trivandrum, 2003), xii-xiii
[27] Zachariah Poonen and K.C. Zachariah, *A Survey of the Rise of the Dutch Power in Malabar (1603-78).* (Trichinopoly: St. Joseph's Industrial School Press, 1948.) Print, 32
[28] Federico De Romains in *The Indo-Roman Pepper Trade and the Muziris Papyrus*. (United Kingdom: OUP Oxford, 2020).
[29] Anjana Singh, "Botanical Knowledge", 189

Europeans to gain new access to the coast of Malabar, thus helping them discover sources of valuable plants and their products[30] [31].

Fig. 5 'The City of Cochin located on the Coast of Malabar', by Dutch explorer and naturalist Francois Valentijn, c.1724 (© Sarmaya Arts Foundation)

In the 17th century, the region of Malabar was divided into several polities. Most notable of them was the port city of Cochin- a princely state bordering Cannanur and Travancore. The region was inhabited by people who belonged to or had close contacts with religions such as Hinduism, Christianity, Islam, Judaism, Buddhism and Jainism. They spoke and wrote languages such as Sanskrit, Malayalam, Tamil, Arabic as well as several dialects.

The political atmosphere of Malabar in the 17th century is complicated and thus has been stimulating for historians to unpack. Prior to the arrival of the Dutch East India Company or Vereenigde Oostindische Compagnie (hereon VOC), the Portuguese had already settled along the Malabar coast, positioning themselves at Goa and Cochin. When the VOC set foot into Malabar, the state was divided among numerous small kingdoms governed by Malayali Rajas and princes. The prosperous kingdoms that caught the attention of the Dutch were that of the Zamorin of Calicut, Cochin and the Royal family of Travancore[32]. Between 1661-1663 the

[30] K.S. Manilal, "Preface" in *Botany and History of Hortus Malabaricus*.ed. K. S. Manilal (Balkema, 1980), 1
[31] Sebastian R. Prange, "'Measuring by the Bushel': Reweighing the Indian Ocean Pepper Trade*." Historical Research: The Bulletin of the Institute of Historical Research* 84, no. 224 (2011): 212–35, 212
[32] Rene J. Barendse, *Arabian Seas 1700-1763* (Netherlands: Brill, 2009), 488-89

VOC laid siege in Cochin, soon defeating the Portuguese, driving them off the Malabar Coast thus establishing Dutch governance over the region. Amongst the VOC personnel was one important member- Hendrik Adriaan Van Reede who, after serving the Company in various capacities became the Commander of Cochin between 1670-1677 and more importantly, became the authoritative figure behind chronicling and publishing the Hortus Malabaricus.

In order to understand and locate the origins of ideas surrounding the Hortus Malabaricus, it is necessary to study writings of Van Reede, his life, interests and mission as the Dutch Commander of Cochin in the late seventeenth century.

Fig. 6 View of Cannanore on the Malabar Coast in India, Johannes Vinckboons (attributed to), c.1662 - c. 1663 (© Rijksmuseum, Amsterdam)

Van Reede and VOC conquests in Malabar

Van Reede was born in 1636 to a noble family in Utrecht where his father held the post of a "forester", an aspect what Cook suggests may have been an inspiration for Van Reede to have developed a fondness for plants from an early age[33]. Historian J. Heniger notes that he grew up in a Dutch society where diplomacy, maritime and military affairs, architecture and garden architecture as well as colonization predominated along with a liberal religious attitude. Furthermore, growing up he had little interest in pursuing science though he was not professionally trained in this pursuit. In 1656, he began his service with the VOC and in coming

[33] Cook, *Matters of Exchange*, 310

years journeyed to the Cape of Good Hope and later Batavia. It is in these visits that he first came across his love and interest in 'exotic' or non-European flora[34].

Following these visits, Van Reede took part in expeditions under Rijcklof Van Goens who had earlier seized Colombo and Jaffna in 1656 and 1658 respectively. Under Van Goens, Van Reede served as a soldier during the last campaign to capture Ceylon. After a successful conquest, Van Goens turned his attention to Malabar where by 1663 this expedition gained control over Cochin, overthrowing the Portuguese. Through this conquest, Van Reede was noticed for his 'heroic actions' in Malabar and owing to Van Goens' patronage, he gained rapid promotion as a councillor, captain, diplomat, and inspector in Malabar between 1663-1667[35].

Van Rheede was described as 'tolerant, flexible and open-minded' and believed that in order to set up good governance, one must have profound knowledge of local customs, weaknesses and powers[36].This turned out to be a formative period in Van Reede's life as these ranks gave him the opportunity to get acquainted with the princes of Malabar, most noticeably the Raja of Cochin- Vera Kerala Varma as well as allowed him to traipse through the surrounding lush green tropical nature where he became impressed with what the natural land of Malabar had to offer.

A glimpse of this period in Van Reede's life where he became familiar with the culture, nature and society of Malabar appears in the preface authored by him of the third volume in the Hortus Malabaricus. When reading the preface, it appears as though Van Reede wrote this preface as an open letter to the readers of the first two volumes of the Hortus Malabaricus as a response to botanists or professors of botany who had critiqued the books. Additionally, this preface can also be seen as a way of ensuring transparency in the process and history of making these botanical codices for future readers who may have similar criticisms such as prior commentators of the books. In doing so, Van Reede's preface forms an important source to imagine and get familiarised with the making of the Hortus Malabaricus, as scholars have widely used this preface to present accurate historiographies on the text.

[34] Heniger, "Summary", xi
[35] Ibid.
[36] Jos Gommans, "South Asian Cosmopolitanism and the Dutch Microcosms" *in Exploring the Dutch Empire: Agents, Networks and Institutions, 1600 – 2000*, ed. Cátia Antunes (London: Bloomsbury Academic, an imprint of Bloomsbury Publishing Plc, 2015.), 16-17

Van Reede and the Making of The Hortus Malabaricus

When writing a book history of the Hortus Malabaricus, this preface is of paramount importance to study closely as it lays out the premise upon which the idea for documenting the botany of Malabar had sprouted, as well as Van Reede's observations on the socio-economic structure of Malabar during the 17th century.

In this preface, he begins by admitting to being an amateur without any profound learning or accurate knowledge of botany, spices and simple medicaments, however he professed to have great affinity for such knowledge[37]. This is a fair declaration of Van Reede as it makes the reader aware of Van Reede's limitations. Although, I also suggest that Van Reede makes this declaration as a response to the critiques who noticed errors in Van Reede's recording of plants. If this is true, then it complicates our understanding of the voices and people who represent the body of knowledge in the Hortus Malabaricus as it leads one to ask whose observations are we really reading in the Hortus Malabaricus; Van Reede's or the Malayali physicians? And, did Van Reede follow an incomprehensible system of classification to garner such criticism? These questions will be dealt with in a later section of this chapter.

Returning to the genesis of the Hortus Malabaricus, Van Reede goes on to chronicle how he noticed the abundance of trees, shrubs, creepers, flowers and fruits that covered almost every inch of fertile forests in Malabar. With a desire to know more about these plants, he asked natives or Malabari folk to accompany him on journeys through these natural spaces to help document the names and curative virtues of these plants.

As he spent more time with the Malayalis, he paid more attention to their lifestyle and what they did with their botanical and medicinal knowledge. He observed that the princes, nobles and subjects of different cities and villages used the medical help of 'native' physicians who sourced all their medicines from the plants in the surrounding districts instead of sourcing it from other regions. While noting that other Europeans in Malabar were quick to implement the same for medical help, he stated that the Dutch did not adopt the same approach.

> The Dutch, however, who are staying there under the auspices of the East India Company, indifferently us medicaments which, after being fetched from these regions [Malabar], are conveyed via Persia and Arabia to Europe and thence again by sea to India, in almost decayed

[37] Manilal, "Preface", ix-x

> and spoiled condition, not without a waste of large sums, which are spent without any advantage on this matter[38].

This observation significantly appeared as a vital reason for Van Reede's need to not only document the names and drawings of plants in Malabar, but also to obtain medicinal knowledge of these plants which would help save the VOC of its expenses spent on transporting medicines from Malabar to Amsterdam and back. By doing so, Van Reede stated that this matter would yield good results as it would not only involve profit for the VOC, but also be useful to students of botany in Europe[39].

By 1670, before undertaking the task of documenting the Hortus Malabaricus, as Van Reede became the Commander of Cochin and at this time, he had to occupy himself with the restoring the declining authority of the Company in Cochin, for which he made use of his diplomatic and military talents and of his influence on the raja of Cochin[40]. After vanquishing the Zamorin of Calicut in 1671, averting a threat of a French invasion in 1672 and establishing a Union of Mouton in 1674, he turned his attention to setting up a laboratory in Cochin to launch independent research on the surrounding botany of Malabar. This was the start for his quest to chronicle the Hortus Malabaricus.

As the pressure of his activities as Commander coupled with his lacking knowledge about these plants and its uses formed a hindrance in pursuing this activity by himself, he consulted Veera Kerala Varma (Raja of Cochin) for prospective assistants to guide him in his learning. He was directed to a pontifical priest of the order of the Discalced Carmelites, Father Matthew of Saint Joseph[41].

According to Heniger, the arrival of Father Matthew in 1674 marked the first birth of Hortus Malabaricus as he had already compiled a voluminous body illustrating medicinal plants titled *Viridarium Orientale* ("Garden of the Orient") which he wanted to be published under Jacob van Gool, a professor of Oriental Languages at Leiden University[42]. However, this plan was not followed through and instead, this manuscript ended up in Italy, where the Bolognese professor of botany Giacomo Zanoni was to publish parts of it. This manuscript is important as

[38] Ibid, xiii
[39] Ibid., for further reading see, Marian Fournier, "Hortus Malabaricus", 11
[40] Heniger, "Summary", xi
[41] Manilal, "Preface", xiv
[42] Heniger, "Summary", xi

notes and drawings similar to the *Viridarium Orientale* served as the first version of the Hortus Malabaricus.

Unfortunately, working with Father Matthew ultimately ended up unsuccessful as Van Reede grew unimpressed with his inaccurate sketches of plants, which he attributed to his inexperience "in using anything but a pen", and overall lacking the skills of a knowledgeable painter. Though he went on to state that working with him was the first obstacle and disturbed the beginnings of the Hortus Malabaricus, he later spoke kindly of Father Matthew in the preface of volume three, owing his gratitude for his time and declared that he was indeed, the first founder and 'originator' of the Hortus Malabaricus[43].

This unproductive time for Van Reede coincided with a visit of Paul Hermann, a doctor of medicine who had been appointed as a professor of botany at Leiden University. While historiography on the Hortus Malabaricus by J. Heniger[44] and Anjana Singh[45] state that the arrival of Paul Hermann rendered a second and more definitive version of the Hortus Malabaricus, Van Reede mentions the opposite in the preface.

Though Van Reede wished to use the expertise of Hermann to re-visit his idea of the Hortus Malabaricus, he states-

> Nevertheless, the shortness of his [Paul Hermann] stay was the cause that I could not discuss my collectanea of the Hortus Malabaricus, with him, neither could he assist me with wise advice in the very complicated work[46].

Perhaps Hermann advised Van Reede much later in the process of making the Hortus Malabaricus. Though this discrepancy in the literature might be a minor observation on my part, I think it is important to factor in while closely reading and comparing notes on Van Reede's writing along with historiographies of the text.

Instead, Van Reede credits Johannes Casearius – a vigilant priest in Cochin possessing botanical knowledge "second to none" for undertaking the renewed task of documenting the Hortus Malabaricus[47]. From then on, in order to make better progress, Van Reede made the following arrangements: First, two 'native' or local physicians, Brahmins as well as others, were asked to make a list of well-known plants in their own local language. Secondly, these

[43] Manilal, "Preface", xiv-xv
[44] Heniger, "Summary", xii
[45] Singh, "Botanical Knowledge", 192
[46] Manilal, "Preface", xv
[47] K.S Manilal, "Preface", xxvi

plants were to be divided into groups according to the seasons in which their leaves, flowers or fruits appeared. Next, these lists had to be given to experts who possessed the knowledge of plants in order to collect them with leaves, flowers and fruits for Van Reede. Following this, as soon as the living plants were brought in, three or four artists would immediately make precise drawings of them.

Almost always in Van Reede's presence, a description of that plant was made. He also requested the kings of Malabar to send him unique plants and by doing so, time and again different plants were brought in from long distances to be documented for the Hortus Malabaricus. Van Reede formed a group of fifteen or sixteen experts, to whom he showed the drawings and whom he, with the help of an interpreter, asked their name and medicinal use as a way of verifying the knowledge provided by the Brahmins and physicians[48].

He also observed the sources from which the Malayali physicians and Brahmins obtained their knowledge from-

> They honour Antiquity and the first inventors of their sciences with the most pious reverence, and by them they judge their own views and also their own experiences, and they subject them to *their* authority. And as regards medicine and botany, the knowledge of these sciences is preserved in verses, the first lines of which begins with the proper names of the plant, whose species, properties, accidents, forms, parts, location, season, curative virtues, use and the like they then describe accurately[49].

The information gathered by Van Reede in Malabar has been argued to be the only remaining evidence of the ancient ethno-medical knowledge of Kerala, curated from the hereditary palm-leaf manuscripts by Itty Achuthan, a Brahmin of the Ezhva caste in Malabar[50]. Three Konkani priest-physicians, Vinayaka Pandit, Ranga Bhatt and Appu Bhatt, supplemented the information as only brahmins (amongst the hierarchy of the Malayali caste system) had access to the classical knowledge systems of South Asia- shastras.

It is unfortunate that Van Reede does not mention any books that the Brahmins read or brought with them when meeting with Van Reede, but he emphasises that they were exceptionally quick to give oral information on plants once they were told their names. Singh opines that "this provides evidence that Brahmins had an orally transferred knowledge of plants and their

[48] Ibid.
[49] Ibid, xxvii
[50] Singh, "Botanical Knowledge", 193

characteristics or healing properties, either through their families or from their Brahmin teachers. Itty Achudan carried a palm leaf manuscript with him but Van Reede does not give any further information on the name, content, author, or language of the text."[51] The assumption, rather argument of oral transfer of knowledge can be seen in Van Reede's method of documentation in the next section.

Language and Publication

The next significant stage in compiling the Hortus Malabaricus was knowing how to communicate with the Malayalis and over-coming the language barrier between Dutch and Malayalam. To this end, the local names of the plants were dictated to Van Reede in spoken form (*vaamozhi* in Malayalam[52]) of Malayalam which was then translated into Portuguese.

This communication proved to be a tedious process as the method involved writing the names in the spoken form as the plant names themselves, from which it was translated into Portuguese, then to Dutch and lastly to Latin, the language in which the Hortus Malabaricus finally was printed in. To add to the complexity in this matter, K S Manilal notes that during this dreary process, the Malayalam names which did not easily appeal to a European's tongue or ears had undergone severe distortions that are reflected in their depiction in Roman script as well as in the descriptions of illustrations in the text. Additionally, another problem was that many of the names in Malayalam script were at times written later in Amsterdam and Leiden by people who lacked the knowledge of the language and script[53].

These activities of changing names or wrongly recorded names has been noted and to an extent rectified by Manilal in his notes for a large section of plants in his translated version of the Hortus Malabaricus. He provides the Malayam name of different plants and also mentions its modern usage and whether or not these plants exist at all in Kerala at present.

As for its publication, Van Reede yet again was faced with a few hindrances.

The collection of data came to an end in 1676, and as Heniger states, Van Reede felt "obliged to leave Malabar". Through his authoritarian attitude in the council of Malabar, Heniger notes "Van Reede had made enemies who exploited a long-smouldering conflict between him and

[51] Ibid.
[52] In the Introduction to the English translation of the first volume, K S Manilal states that in Malayalam, words and expressions had and still have two forms- a spoken form (vaamozhi) and a written form (varamozhi). From Van Reede's process of documenting the plants of Malabar, it can be seen how he relied on vaamozhi rather than the written names of the plants.
[53] Ibid., xii

his former patron Van Goens, about the relationship of the commandment of Malabar and the government of Ceylon."[54] In support of Van Reede, in 1677, Joan Huydecoper van Maarsseveen, a director of the Company gave him the office of 'extraordinary councillor of India in Batavia[55]. However, before leaving for Batavia, Van Reede mentions that he still continued his study of Malabari plants as he "hadn't determined neither the time required nor the number of plants with which our Hortus ought to be cultivated".[56]

When Van Reede was called across adjacent waters to "rebuke" Malabari princes on behalf of his superiors, he asked the people accompanying him to wander into the forests surrounding these waters in search of collectable plants, which along with two hundred men later appeared on Malayali war ships known as *Mansjous*[57].

On the way and upon arrival at Batavia in 1677, Van Reede with the assistance of the Malayalis, made plant descriptions which were to be perfected "at a more convenient place and time". During his stay in Batavia, Van Reede heard the upsetting news of John Casearius' demise which complicated completing the writings of plants in Latin. Without Casearius for assistance, Van Reede turned to the help of Willem ten Rhijne, a fellow company servant and botanist, who helped complete the compilation of his work[58].

Complications in Publication

Following this, in 1678, Van Reede returned to the Netherlands after having spent two decades in Asia, first and foremost on the Malabar Coast. The information he had gathered now entered a second stage of its transformation: it was compiled and prepared for a publication in Europe. The publication stage perhaps adds most complexity to distinguishing the colonial and Malayali nature of the Hortus Malabaricus.

Initially, Van Reede was left unsatisfied with the publication of the first volume in 1678 as the publisher, in an attempt to save publication costs, reduced the length of the text by splitting Van Reede's idea of a first volume into two or three volumes instead. Van Reede stated that the first volume was better than the second due to the contribution of Arnold Syen, a professor of Botany and Leiden University, who incorporated commentaries, illustrations and comparisons with European plants. Along with his "bitter death", Van Reede faced another

[54] Heniger, "Summary", xii
[55] Ibid.
[56] Manilal, "Preface", xx
[57] Ibid., xxi
[58] Ibid., xxii

change of contributors as well as a delay in publishing the Hortus Malabaricus with the loss of botanists and contributors Johannes van Someren and Johannes van Dijck[59]. Following this difficult period, Van Reede signed new publishing contracts in 1681 and reorganised the team. Johannes Munnicks, Professor of Botany at Utrecht, became editor, while Jan Commelin, an amateur botanist, continued as commentator.

In 1682, he published the third volume which has been frequently re-visited by historians as it contains Van Reede's writing of the origins of the text. Between 1684-1690, Van Reede travelled back to Asia and later South Africa, spending time in Batavia as well as in Cape Town. During this time, he continued his study for plants and upon arriving in Malabar, using the VOC's shipping, he sent plants and seeds from all these places to Amsterdam's Municipal Garden[60]. However, in the December of 1692, Van Reede passed away on board a VOC ship off the coast of Bombay. Buried in the Dutch cemetery at Surat, his resting place was built to be a monument in the Indo-Dutch style.

The remaining nine volumes were published based on Van Reede's extensive notes and drawings he collected during his first stay in Malabar.

Three versions of the Hortus Malabaricus are known to exist. The first and original Latin edition of twelve volumes in folio was published in Amsterdam between 1678 and 1693. Dutch botanists attempted to produce a Dutch translation of the text, leading to the second edition- a Dutch translation of the first two volumes published as *Malabaarse Kruidhof*, printed in Amsterdam in 1689. The remaining ten volumes yet to be translated into Dutch till date. Singh notes that the Dutch translations were supposed to be a more popular version which would sell numerous copies. A reissue of this more popular and marketable edition with new title pages appeared in The Hague in 1720[61].

Many attempts were also made by scientists to translate it into English. Manilal states that in1774 John Hill published a "London Edition" of volume one which has been mistakenly thought to be an English translation by those who have not explored the work. This publication is seen as a third edition, which is merely a reprint of the original Latin text, appearing as a

[59] Ibid., xxvi-xxviii
[60] Singh, "Botanical Knowledge" 194
[61] Ibid., 196

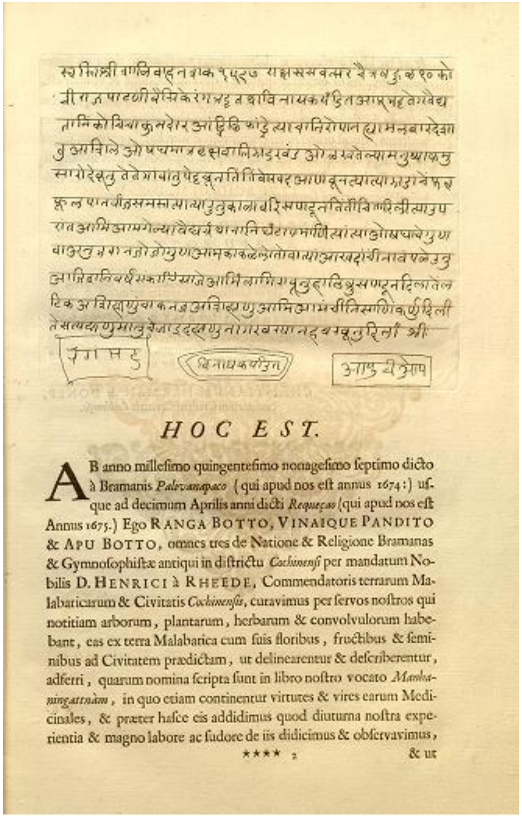
modified Latin version, of only the first volume entitled *Horti Malabarici Pars Prima*, edited and annotated by John Mill and published in London in 1774[62] [63].

Out of the twelve volumes, volume one and three provide rich historiographical material to analyse the process and evolution of the Hortus Malabaricus. In the first volume, Van Reede published testimonials of the interpreter Emmanuel Carneiro and that of the Ezvha physician Itty Achuden in the Malayali script. Affidavits in Konkani along with a Latin translation were attached for the Kokani brahmins Ranga Bhatt, Vinayak Pandit and Apu Bhatt.

HOC EST.

EGo ITTI ACHUDEM Doctor Malabaricus Natione *Chego*, gentilis & naturalis in *Carrapuràm*, ſeu terra dicta *Codda Carapalli*, habitator ædium dictarum *Coladda*, qui proavis, avis & parentibus Medicis ſeu Doctoribus natus ſum, teſtor me per mandatum D. Commendatoris HENRICI à RHEEDE, veniſſe in Civitatem *Cochinenſem* & per EMANUELEM CARNEIRO Nobilis Societatis Indicæ interpretem dixiſſe & dictâſſe nomina, virtutes medicas & proprietates arborum, plantarum, herbarum &

**** con-



HOC EST.

AB anno milleſimo quingenteſimo nonageſimo ſeptimo dicto à Bramanis *Palevanapaco* (qui apud nos eſt annus 1674:) uſque ad decimum Aprilis anni dicti *Requeças* (qui apud nos eſt Annus 1675.) Ego RANGA BOTTO, VINAIQUE PANDITO & APU BOTTO, omnes tres de Natione & Religione Bramanas & Gymnoſophiſtæ antiqui in diſtrictu *Cochinenſi* per mandatum Nobilis D. HENRICI à RHEEDE, Commendatoris terrarum Malabaricarum & Civitatis *Cochinenſis*, curavimus per ſervos noſtros qui notitiam arborum, plantarum, herbarum & convolvulorum habebant, eas ex terra Malabarica cum ſuis floribus, fructibus & ſeminibus ad Civitatem prædictam, ut delinearentur & deſcriberentur, adferri, quarum nomina ſcripta ſunt in libro noſtro vocato *Mambaningattnàm*, in quo etiam continentur virtutes & vires earum Medicinales, & præter haſce eis addidimus quod diuturna noſtra experientia & magno labore ac ſudore de iis didicimus & obſervavimus,

**** 2 & ut

Fig. 7, 8 affidavits of Itty Achuden in Malayalam (left) along with that of Ranga Bhatt, Vinayak Pandit and Appu Bhatt written in Konkani, in the *nāgāri* script (right)

At the outset, it can be understood that knowledge sourced for this text is certainly South Asian as the basis of this treatise is built upon orally transferred knowledge from Malayali śāstras. Though the core maybe Malayali, the process and publication eventually was created as a product of European systems of knowledge and classification.

[62] Heniger, "Van Reede", xi – xvi
[63] Manilal, "Introduction" vol. 1, xiii

Development on historiographies on the Hortus Malabaricus

Historian Richard H. Grove- who is credited as one of the founders of Environmental History- was the first to offer a perspective of the sociological impact of the Dutch-Ezhava collaboration and how the plant descriptions can be critically analysed to explain what the sociological hierarchy was in the past for the Malayali community of Malabar[64]. While his analysis is useful in breaking down the prevailing caste system which limited the transfer of knowledge (except amongst Brahmins) within the Malayali society, it is interesting to ponder upon how such detailed Malayali knowledge was then easily provided to Van Reede.

A common argument of Grove's literature on the Hortus Malabaricus between 1994 and 1996 is that he claims the text is "profoundly indigenous". By arguing so, Grove simplifies the complexities that surround the development of the Hortus Malabaricus from compilation to its publication because European insight not only trickled into but also tampered with the process of creating this text.

An argument in support of my view that I find compelling is that of Anjana Singh who mentions "the published Hortus Malabaricus does not allow any insight into the original classification system of Malabar."[65]

This statement contradicts Grove's argument of the Hortus Malabaricus being ''far from inherently European,'' as he states that the Hortus Malabaricus is ''actually compilations of Middle Eastern and South Asian ethnobotany, organized on essentially non-European precepts.'' He also claimed that others ''have failed to understand or identify the vital significance of the power of the Ezhava affinities within the text of the Hortus Malabaricus, with all that it implies for the assertion of the Ezhava classificatory system.''[66]

While there certainly lies importance in Grove's statement which draws attention to the Ezhava contribution to the text, Cook offers another contradiction to Grove, similar to that of Singh's argues by noting that Grove only makes the argument for the Ezhva knowledge influencing the system of classification of the Hortus Malabaricus, but he fails to demonstrate it[67].

It is difficult to agree wholly with Grove due to the lack of Van Reede's original sources or drafts which contained the Malabari system of classification. What we have at present is a

[64] Grove, *Green Imperialism*, 87-90
[65] Singh, "Botanical Knowledge", 194
[66] Grove, "Indigenous Knowledge", 127-128
[67] Cook, *Matters of Exchange*, 313

system of classification that was required by publishers at Amsterdam and professors at Leiden University during the late 17th century.

Furthermore, the Malayali Brahmin physicians Ranga Bhatt, Vinayak Pandit and Apu Bhatt along with Itty Achuden who assisted Van Reede in this ambitious project are given a special recognition with their affidavits stating the extent of knowledge they possess is published at the start of volume one. However, the only next mention and praise of these physicians appears in an acknowledgement to the Raja of Cochin, ahead of the preface in volume three.[68] Throughout the accounts of plant descriptions, Van Reede fails to mention the specific and nuanced contribution of these physicians. It is as though the voices of these physicians are almost absent.

Concluding remarks

As history is not only important to re-visit but it is more imperative that we re-claim our history, historians such as Richard Grove, Malavika Binny and Anjana Singh have taken the efforts to provide these physicians with their identity, bringing further attention to their backgrounds and origins.

A final concluding point to take into consideration when pondering upon colonial science and Van Reede's interest of involving the Malayalis in the production of their knowledge of botany, Binny's argument on defining collaborative efforts between European and indigenous systems is noteworthy. Reading against the grain, she points out that though we have evidence of 'collaboration' it is rather the inclusion of native expertise in the production of authoritative texts[69]. The failure in distinguishing who speaks to us in the text of the Hortus Malabaricus- be it Malayali physicians, Van Reede or editors of the volumes- makes it all the more confusing to separate Malayali knowledge from colonial activities.

These arguments for observing the Hortus Malabaricus as a colonial production of Malayali scientific knowledge instead of simply, a Malayali scientific text produced by Europeans is imperative to keep in mind while analysing the extent to which botany, in this case the Hortus Malabaricus, was created and used to further imperial motives of expanding the colonial imagination of Empire.

[68] Hendrik Adriaan Van Reede tot Drakestein, "Preface" in *Hortus Indicus Malabaricus*, 12 vols. (Amsterdam, 1678-1693): Vol. 3 (1682)
[69] Binny, "Plants Power and Knowledge", 18

Against this context of the genesis and making of the Hortus Malabaricus, it is essential to further understand how and why botany came to be used as a tool of European empire-expansion. This leads us to the next chapter, which discusses- what is science and empire and consequently, what is colonial botany? How can we further characterise the Hortus Malabaricus as a utilitarian text for empire-making?

Chapter two

Local Science, Global Knowledge: Historiography on Science and Empire

Where does the history of science and empire begin?

The field of science and empire can broadly be understood as an intellectual development in the analysis and study of colonial history from the late fifteenth century onwards. While empire has not traditionally been at the centre of the historiography of science, historians of science and empire observed that 'science' should not be seen only as a narrative of western civilisation, but it in fact is an emergence due to the exchange of knowledge, networks and connections that existed outside European universities, societies, laboratories and research institutions[70].

This ideology or field of study gained momentum from the late twentieth century and has emerged significantly relevant in modern times to demonstrate the racial differences and asymmetrical power relations between the colonisers and colonised that has evolved as a consequence of colonialism[71].

Within the study of science and empire, several scientific disciplines have been identified to analyse how science and its branches were used or formed as a tool for empire-making and expansion contrariwise, how empires fuel the growth of science from 1480-1500s and onward. Such sub-disciplines are anthropology, medicine, psychiatry, natural history, mathematics, meteorology, astronomy to name a few. This thesis, and mainly this chapter, focuses on another sub-discipline of science known as botany and empire to observe the symbiotic relation between science and empire.

Historiography on Science and Empire

Peter Boomgaard in his scholarly volume *Empire and Science in the Making* states that before the 1960s and 1970s when colonies began breaking away or gaining independence from imperial rule, scholarship on the history of science, technology and empire would primarily argue that a positive impact or a "benefit" of colonialism in the colonies was the introduction of Western science in South America, Asia and Africa[72].

[70] Andrew Goss, "Introduction" in *The Routledge Handbook of Science and Empire*, ed. Andrew Goss (1st ed.). (London: Routledge, 2021). 1-9
[71] Ibid.
[72] Peter Boomgaard, "Introduction", *Empire and Science in the Making: Dutch Colonial Scholarship in Comparative Global Perspective, 1760-1830*, ed. Peter Boomgaard (London: Palgrave Macmillan, 2013), 9-10

However, there came a shift in thinking as the Boomgaard states "from the 1970s onward, the politico-scholarly mood changed, and many studies were published that argued that Western science and technology, in turn, had also been the handmaidens of Empire, and in the 1970s, 80s and 90s, that was not meant as a compliment."[73] With this change in outlook, scholarship on history of science, empire and technology detached itself from a Eurocentric or a Western-centric approach by arguing that science served colonial expansion and empire building and made the process of empires possible. Paraphrasing Boomgaard, colonial scientific enterprise was characterised by political and economic motivations, in addition to being motivated by scholarly curiosity[74].

This understanding of science as not purely western has become a central argument in the field of Science and Empire, with historians such as Kapil Raj re-defining the term 'modern science' to identify (western) science as a collaboration of precolonial indigenous knowledge systems and of European curiosity, including the appropriation of the former. Raj, in his seminal work *Relocating Modern Science*, traces the origins of Science and Empire as a historical study that emerged as a response to reflective questions asked by historians of science- Joseph Needham and George Basalla in the 1960s[75].

While Needham's 'Grand Question' of why modern science didn't evolve in the East (specifically, China) instead of the West despite its technological development and earlier success, Basalla- through controversial thoughts on this question- proposed a "diffusionist model" or a three-stage model of evolutionary progress for the process of globalisation or what he termed 'Western science'.

Basalla's model first came a period of scientific exploration, where non-European (i.e.,'non-scientific') societies served as passive reservoirs of data. This led to a second exploration, one of colonial dependence in which European scientific institutions encouraged Western scientific activity outside Europe—by European colonists or settlers, or else by acculturated indigenes. Eventually, colonised societies gained maturity, which was marked by a third phase characterized by a struggle to establish independent, national scientific traditions based nonetheless upon Western professional standards[76].

[73] Ibid., 9-10
[74] Ibid.
[75] Kapil Raj, *Relocating Modern Science*, (London: Palgrave Macmillan, 2007), 3
[76] Ibid., 3-4

Boomgaard rightly observed that this old diffusionist model became increasingly untenable as it was wholly a Eurocentric perspective, scholars argued that scientific knowledge which reached the West from Asia, the Americas and Africa had changed Western science considerably, as "new" knowledge had to be incorporated in the "old" Western knowledge systems. This could only be possible with a major change in the field.

Raj similarly notes that amongst other dilemmas to relocate modern science, the rejection of Needham's and Basalla's ideas dominated the thinking of historians who worked on topics outside of the West and this roughly created an academic community what we now know as 'Science and Empire', whose focal aim was to bring light to the contribution of non-western cultures to the understanding of modern science[77].

An important note to clarify when using the term 'empire' in 'science and empire' is that it represents modern West European trading or commercial enterprises. Raj rightly states that overall, the name 'science and empire' is unsatisfactory as regions like China, Persia or the Ottoman empire which were empires in their own right are not the subject of investigation for this field of historical study. Hence, a clarification must be made, limiting the usage of 'empire' in this regard to West European trading companies.

With the creation of study known as 'Science and Empire' came a central understanding that Western science did not start from scratch in the regions that had become colonies, because there had been locally developed systems of science and technology that could be built upon leading to hybridisation of knowledge[78].

Adding to this, Pratik Chakrabarti, a historian of science and empire of modern India, draws attention to a more recent argument that is why is the history of science often parallel to the history of science and empire? Quoting, "there is still discernible scientism in history of science, particularly in the history of environmental science, deep history, history of geology, palaeontology, evolution, and prehistory, in which the research agendas and tones are often set by scientists, or scholars with strong backgrounds in science, rather than humanities." Which alludes to an epistemological problem wherein the history of science remains to be Eurocentric[79].

[77] Ibid.
[78] Boomgaard, "Introduction", 9
[79] Pratik Chakrabarti, "Situating the Empire in History of Science" in *The Routledge Handbook of Science and Empire*, ed. Andrew Goss (1st ed.). (London:Routledge, 2021), 10-13

Arguing for a pluralistic vision of science, he notes that in the recent decades, historians have explored ways to integrate colonial and global histories into the European history of science, thus, proving a point made by historians Michael Worboys and Paolo Palladino in 1993 stating that "the history of science and imperialism *is* the history of science."[80]

Building on these developments in the field of science and empire as a historical study, the reasoning of modern science as a hybrid form of knowledge systems of European understanding of non-western and precolonial knowledge is central to this thesis as the Hortus Malabaricus in its essence, replicates this ideology. As the text had its origins in Malabar, the knowledge eventually produced was intertwined with European standards and systems of classification, thus making the codex European, to this extent- colonial in its structure. Branching away from the larger study of science and empire and into the utilitarian nature of Hortus Malabaricus, this makes an interesting point of departure to ask how did the study of botany and empire develop? What is 'colonial botany'? and how can we further understand the entanglement between colonialism and Malayali medico-botanical knowledge in the Hortus Malabaricus?

Historiography on Botany and Empire

Richard Grove's early work on indigenous knowledge of medico-botany from South Asia published in 1996 became an important historiographical source to first witness this very entanglement of science and empire, specifically of botany and empire. At the time, Grove stated that "appropriate historiography of the history of botany is not highly developed despite the recent appearance of some very important biographical works, while natural history in general has tended to be relation of other disciplines in the history of science." Due to the lack of development in the study of botany and empire, he suggested that the field incorporate other aspects of nature, thus making way for "environmental history"[81].

However, since then in the field of science and empire, 'botany and empire' has developed as an independent and relevant sub-discipline. Historians such as Londa Schiebinger, Richard Drayton, K S Manilal, Harold M. Cook and Richard Grove himself amongst others have diversified the analysis of botany from botanical gardens and natural history collections to colonial texts, and more recently, to tracing the colonial knowledge transfer (or the lack of it)

[80] Ibid., 16
[81] Grove, "Indigenous Knowledge", 121–43.

of select plants from the east to west[82]. This scholarship has and still is expanding the scale of experimentation and methodology in demonstrating the structural entanglement of botany and empire.

History of Botany as a tool for Empire Expansion- 1500s-1800s

Historians have rightly emphasised on the explosion of interest in plants from the fifteenth century as the discovery of plants, its potential and possibilities from this period had become a driving factor for colonial voyages and in turn, colonial expansion.

Taking the instances of the Spanish, Portuguese, Dutch, French and British empires, a motivating factor for exploring non-western worlds was the need to gain monopoly over indigenous environments and thereby extract natural resources of flora for western consumption in the form of medicine, luxuries, and agricultural staples. Between 1500 and 1800, and markedly from the seventeenth century, publications about the "new" lands had flooded the European markets, though at times inaccurate and/or stereotyped, these publications led to a growing awareness of and interest in the existence of other societies, cultures, religions, histories and most notably flora and *naturalia* in the tropics[83].

As these new long-distance voyages which developed from the fifteenth century stimulated an awareness of a wider world in Western Europe, it also had a noticeable effect on the development of natural history and the status of science in these governments from this period onwards[84].

Londa Schiebinger argues that the collection of plants for colonial empires began occupying importance from the fifteenth century for three reasons. Firstly, by collecting plants from its colonies, colonial governments found new methods to source cheap supply of drugs, foods and luxury items for domestic markets. Next, these imports acted as substitutes and solutions to the constantly drained treasuries in European economies and lastly, collecting as an activity paved

[82] For further reading see, Londa Schiebinger, *Plants and Empire: Colonial Bioprospecting in the Atlantic World.* (Cambridge, MA [etc.]: Harvard University Press, 2004.), Londa Schiebinger, *Colonial Botany: Science, Commerce, and Politics in the Early Modern World*, (United States: University of Pennsylvania Press, Incorporated, 2016.), Richard Drayton, *Nature's Government: Science, Imperial Britain, and the 'improvement' of the World.* (New Haven [etc.]: Yale University Press, 2000.), K.S. Manilal, *Botany and History of Hortus Malabaricus*. (Balkema, 1980), Richard Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600-1860.* (Cambridge [etc.]: Cambridge University Press, 1995.), Harold M. Cook, *Matters of Exchange: Commerce, Medicine, and Science in the Dutch Golden Age.* (New Haven, CT [etc.]: Yale University Press, 2007)

[83] Boomgaard, "Introduction", 10-11

[84] Grove, "Indigenous Knowledge", 121

way for the acclimatisation of valuable plants in European soils so as to maximise production at a low cost as well as develop scientific research which contributed in the expansion of colonial fronts[85].

In addition to the economic and political reasons of collecting plants, Richard Drayton and Richard Grove suggest that the entanglement between botany and imperialism grew with the establishment of botanical gardens in European universities from the fifteenth century. Contributing to this argument, Harold M. Cook suggests that by the seventeenth century, a reason for furthering scientific knowledge was not limited to scientific study of foreign plants in laboratories but also the idea of decorating the West with flora from the East - "the enthusiasm for gardens and cabinets, in which exotic specimens could be grown and shown, and the wealth committed to their establishment and expansion, remained one of the most potent reasons for finding things out and conveying them and information about them back to the home country."[86]

Thus, the history of botany was, by birth of its study, structurally entangled with economic and colonial ambitions to increase the scope of medicinal, pharmacology and natural history[87]. These explanations of plant capitalisation and commodification argue for the idea that plants of the colonies were assigned a vital role by the coloniser in colonial history as a tool of empire making.

Early Modern interest in Botany

Moreover, gardens that were first established by the Portuguese followed later by gardens established in Italy at universities of Pisa and Padua followed Islamic Garden models as they were largely based on major Arabic botanical texts that had evolved from the eight century, in various parts of Persia, Iraq Afghanistan and Northern India[88].

Long before the Portuguese, later the Dutch and most famously the British became dominant in this field, Richard Grove argues that this early modern interest in botany emerged as a re-evaluation of Graeco-Roman and Arabic thought that laid a particular emphasis on nature. Essentially the study of plants in the West can be traced to the publication of Greek naturalist Theophrastus of Erasia (370-285 BCE), wherein his work *Enquiry into Plants* and Dioscorides'

[85] Shiebinger, *Plants and Empire*, 1-22
[86] Cook, *Matters of Exchange*, 304
[87] Grove, "Indigenous Knowledge", 121
[88] Ibid, 122-123

De Materia Medica (first century CE) reawakened interest in the subject, which led to the "first true botanical studies of the Renaissance between 1503 and 1505" by Leonardo da Vinci and Alberecht Durer respectively[89].

With the expansion of voyages to distant lands, from the 1480s, knowledge of "new" botanical realms and interest in understanding the botanies of South and South-East Asia developed at great speed. By 1550, new botanic gardens in Europe were intended to collect representative specimens from every part of the world, as gardens were given a new-fangled and important function- they became symbols of economic power which reflected upon the governments' capability of reaching and "affecting the whole biological world."[90] Thus, such gardens especially in Germany and the Netherlands, sought to relay ambitious political and religious messages through the layout of their gardens.

Boomgaard notes that these voyages of discovery had two features in common- they were undertaken in the framework of empire, and they had explicit scientific goals[91]. Grove highlights, that travellers of this period were hence advised to observe indigenous practice and to collect materials to extend European *materia medica*.[92]

Colonial Botany

Londa Schiebinger- a historian of botany and empire who has greatly contributed to the field- states that such a study of collecting, naming, cultivation and marketing of plants in colonial contexts which was born of and supported European voyages, conquests and global trade, accurately defined colonial entanglement in the study of botany[93].

She states that as much as the colonial profits of these voyages depended on natural historical exploration, the expansion of botany equally depended on the expansion of empires and such voyages. The roles and functions of botany became multi-faceted with the increase in expeditions over time, additionally noting that empires adopted different models of implementing botany as a tool for consolidation of power. She highlights historian Chandra Mukherji's observation on botany and the French empire stating that "French botanical efforts were intended to consolidate power within France and not necessarily overseas. Whereas, in

[89] Ibid.
[90] Ibid, 123
[91] Boomgaard, "Introduction", 13
[92] Grove, "Indigenous Knowledge", 125
[93] Londa Schiebinger, *Colonial Botany*, 2

other European countries, however, the relationships among colonizing efforts, state governance, and botanical practices were not so direct."[94]

The Dutch managed their trade through a "trade-post empire", principally a network of fortified seaports in Goa, Cape of Good Hope, Batavia and in North and South America. Their powerful trading companies – the VOC and WIC functioned until the end of the seventeenth century as "war instruments" designed to monopolise the spice trade in the East and to undermine Iberian power in the West.[95]

The relationship between individual states and botanical exploration shifted over time. As historian Richard Drayton has shown, English natural history was promoted through individual initiative along Dutch lines until the latter part of the eighteenth century. With the transfer of imperial rule from the English East India Company to the Crown, the English adopted the successful French model and colonial governors were asked by the military intelligence for "botanical dispatches" entailing the management of natural resources in their colonies[96].

These botanical dispatches were not unique to the British model of collecting as it was a common feature of Dutch collectors as well. When acquiring knowledge of varied species of plants, Dutch collectors were met with complex encounters among cultures and often resulted in the overwriting of local knowledge and practices. An example of this has been noted by Harold J Cook on Dutch botany in Java where collectors imitated the European wave of "objectification" by which specimens were wiped clean of cultural complexities in order to be pasted neatly into folios of European herbaria, which were then shipped to European botanical gardens and recorded in the European classificatory systems[97].

By wiping or erasing local knowledge as seen in this Javanese instance, colonial botany was fundamentally characterised by unprofessional and unethical conduct of recording information. Additionally, by allowing a European classificatory system to preside over the local system of classification, collectors contributed to the asymmetrical equation of power between Europeans and locals, thus adding fuel to the coloniser/colonised dichotomy.

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[94] Ibid., 6
[95] Ibid., 5
[96] Richard Drayton, "Knowledge and Empire" in *The Oxford History of the British Empire: Volume II: The Eighteenth Century*, ed. Marshall, P., and Alaine Low, (1st ed.). (United Kingdom: Oxford University Press, 1998), 231–53
[97] Schiebinger, *Colonial Botany*, 8

What started out as a fascination to acquire foreign plants for European gardens essentially acting as 'cabinets of curiosity' in the 1550s, grew into an economic interest of knowing and cultivating cash crops from the East in the West, by the seventeenth century, as collecting for curiosity became heavily criticised during this period[98]. A most famous example of this is how the VOC, at the height of its powers, imported as much as six million pounds of black pepper to the Netherlands annually during the late seventeenth century[99].

Thus, with this onset and expansion of colonialism, the role of botany transformed from expanding gardens to becoming a tool of economic and political expansion. In addition to collecting plants, the compilation of indigenous plant knowledge became equally necessary for the expansion of empire.

The first compilation of such knowledge from South Asia was the Portuguese physician Garcia de Orta's book *Coloquios dos simples e drogas he cousas medicinais da India* published from Goa, on South India's flora in 1563. In the following century, Commander Van Reede famously placed the Dutch contribution to the study of South Asian botany on the map in the history of European botanical studies of the East with his monumental publication of the Hortus Malabaricus.

In order to arrive at the understanding of why the Hortus Malabaricus can be, or rather, must be interpreted as a colonial production of Malayali knowledge, we must contextualise it within the history of colonial botany in the Dutch empire during the seventeenth century.

Colonial Botany in the Dutch Empire: Seeking "Green Gold"

In the 17th and 18th centuries, J. Heniger perfectly contextualises the symbiotic relationship between botany and the Dutch Republic.

Paraphrasing Heniger, Dutch botany during this period flourished largely due to the world-wide commercial empires of the VOC and the WIC. Besides the commercial profits, by which botanical activities in the Netherlands could be financed, their ships brought myriad unknown exotic plants from Asia, Africa, and America to the Netherlands[100].

With unrelenting fervour, Company officials of all ranks and classes were encouraged to send reports, drawings, descriptions, seeds, fruits, cuttings, and even complete plants to the

[98] Boomgaard, "Introduction", 6
[99] Schiebinger, *Colonial Botany*, 1-2
[100] Heniger, "Introduction", xvii

metropole. The study of exotic plants led to the pre-eminent Dutch specialism of exotic or colonial botany. Some Company officials had an opportunity to carry out thorough research on the floras of their stations. Prior to Van Reede's exploration of botany in Malabar, Carolus Clusius, Jacobus Bontius, Eberhard Rumphius, François Valentyn, Fredrik Hornstedt and many others are linked inseparably with the exploration of the flora of the tropical regions within the Dutch sphere of influence[101].

The Dutch Republic played an important role in making botany what Londa Schiebinger states as "big science" and "big business", as it was enabled by and critical to Europe's burgeoning trade and colonialism in the early modern period[102].

The seventeenth century witnessed the study of 'exotic' or non-European botany from the tropics as an intrinsic function of colonial knowledge-production in the Netherlands. Heniger states that people of all strata of Dutch society, at home and overseas, contributed to this flourishing of botanical science in the Netherlands.

This was not limited to professional botanists, professors of botany, and directors of botanical gardens, but also amateurs, soldiers and sailors, surgeons, chemists, physicians, merchants, administrators, politicians, and even the stadtholders of the Dutch Republic were engaged in collecting, growing, describing, and classifying plants[103].

This context behind the fascination or requirement of/by Company servants or (amateur) botanists to collect plants from non-European environments is well-discussed by Historian Harold J. Cook in his book *Matters of Exchange*. Here he states that during the 17th century, emerging botanical gardens were given precedence in the Netherlands as they were seen as "open-air museums" which impressed foreign dignitaries, thus using botany as a characteristic tool of political power[104].

Lastly, from ornamenting botanical gardens with indigenous plants, and acquiring knowledge of spices in the East through expeditions owing to the Company's interest in indigenous plants, Heniger adds that Dutch colonial botany was mainly characterised by the marking of collecting dried herbaria, compositions of codices of plant drawings and their descriptions. Overall, the significance of colonial botany consisted of phytography, however Company officials in South

[101] Ibid.
[102] Schiebinger, *Colonial Botany*, 3
[103] Heniger, introduction, xvii
[104] Cook, *Matters of Exchange*, 318

and South-East Asia did not have updated scientific literature at their disposal, which became a glaring problem in chronicling botanical nomenclature and taxonomy of plants in these regions[105].

Framework for Utilitarian-nature of the Hortus Malabaricus

Summarising the observations of Schiebinger, Cook and Heniger on what characterised botany as 'colonial' in the making of the Dutch empire, I have distilled their arguments in three different ways-

First, through the emergence of the discipline out of a colonial ambition to possess economic and political power, and at most times, the unprofessional process of collecting botanical data. Subsequently, the resulting imbalance (or lack) of mutual benefits between the indigenous people and amateur botanists or collectors that came out of activities undertaken under the name of botanical discovery or research. And lastly, how it contributed to the divide between the coloniser/colonised dichotomy which as a consequence, developed and propagated socio-economic hierarchies, which have lasting effects till date.

Bearing these observations and arguments as a framework of colonial botany, in the next chapter I situate ten plants from the Hortus Malabaricus within the debate of science, botany and empire, to further analyse the extent to which production of Malayali botanical knowledge for the Dutch Empire as well as for scientific purposes were intertwined in the seventeenth century.

Consequently, by delving into this entanglement, in chapter three I aim to establish how this colonial entanglement can help in interpreting the Hortus Malabaricus as a utilitarian text for empire-making.

[105] Heniger, "Introduction", xvii

Chapter three: Demonstrating the Utilitarian nature of the Hortus Malabaricus

The Hortus Malabaricus provides a fascinating study of plants from Malabar along with intricate illustrations and varied Malayali uses of plants. Having discussed the history of the Hortus Malabaricus and the need to contextualise its study within the framework and debate of science, botany and empire, this chapter builds upon the theoretical context to test the hypothesis of whether or not this text was compiled as a utilitarian tool for empire-making in the seventeenth century.

Study of Malayali plants and their usage

Each volume of the Hortus Malabaricus represents a select variety of plants. The structure of the twelve books are as follows- volume one and three examine trees, volume two discusses Malabari shrubs, the fourth book entails fruit-bearing trees, the fifth is on trees and berry-bearing plants, next is based on various kinds of trees especially with "podded fruits", the seventh volume contains knowledge of climbing shrubs and the eighth book is on fruit-bearing and leguminous herbs, Volumes nine to twelve contain information on herbs and diverse species.

An interesting observation while examining the plant descriptions is the expansive range of healing properties and medicinal remedies provided by the Malayali brahmins and physicians to Van Reede. These plants were used for ailments ranging from (but not limited to) fevers, swelling of various body parts, pain in joints and around the knee, snake bites, leprosy, issues of psychiatric nature such as mania, madness, brain diseases and epilepsy. In addition to this list, numerous plants were mentioned to improve the health of women, including knowledge of abortifacients, remedies to help with menstruation as well as to accelerate the process of and ease women when giving birth.

While the number of plants with medicinal uses certainly outweighs the plants with non-medicinal use and plants with unknown use to the Malayalis, the information within descriptions of non-medicinal usage must be brought to light. I highlight this importance as we have seen in chapter two, as a requirement of the VOC, agents of the Dutch empire focused on documenting cash crops, plants of economic use and ornamental plants from the East for reasons of monopolising spice trade in South and South-East Asia, decorating botanical gardens with 'exotic' plants in the Netherlands and taking control of indigenous botanical knowledge for the expansion of scientific knowledge in Europe.

With this pretext, I discuss the non-medicinal usage of ten plants in the following section, to demonstrate why the Hortus Malabaricus can be interpreted as a utilitarian text for empire-building, making and expansion. For this purpose, I have taken examples of plants which Van Reede sought to be valuable either as economical, commercial and/or ornamental plants.

Plants noted for the quality of wood

Ansjeli-

Anjali or Ansjeli tree (hereon, Ansjeli) can be found in the third volume containing information about the quality of the wood, its common usage by Malayalis, along with following neat and intricate illustration:

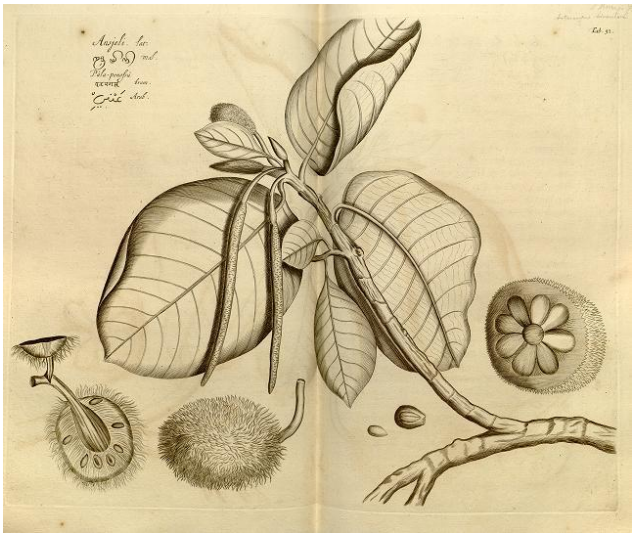

Fig.9 Illustration of the Ansjeli tree: its leaves and fruits,
Hortus Malabaricus, vol.3 tab.32, Bioheritage Diversity Library (BHL)

Van Reede notes-

> Moreover, the wood of the tree (is) fit for carpentry and huge cisterns and boats are built from it: and also from this sort of trees hollowed out Indians make small boats, which are called *Manjous*, some of which exceed eighty measures in length and nine measures in width, and indeed, the boats made from the wood of this tree, though hard, are easily liable to rotting by worms especially in very little salty (brackish) river water.[106]

Among various plants in volume three, Van Reede provides interesting information about the wood or barks of the Ansjeli tree and its commercial use in building Malayali boats known as

[106] Manilal, *Van Reede's vol.3,* 51

'*Manjous'*. Throughout the Hortus Malabaricus, upon close analysis of the text it can be seen that Van Reede provides some significance in mentioning '*Manjous'*. Earlier in the preface of this volume, Van Reede recalls that when he travelled around and inland of Malabar to "rebuke" Malabari princes on the behalf of his superiors, he would ask his men to leave the ship, and search the forest for collectable plants.

> When this party, which often consisted of two hundred men had collected plants for some hours, they returned, laden with plants they had collected from here, there and everywhere, to our war ships, which the Malabari call *Manjous*.[107]

These war ships or 'Manjous' were instrumental in the collection of plants for the making of the Hortus Malabaricus, as well as meeting with Rajas and Princes for administrative purposes. Additionally, while on-board these war ships, Van Reede along with painters would immediately make descriptions for the plants as well as illustrations of them. The Ansjeli tree was not the only tree or wood of importance to Van Reede, he also described 'Manjous' being made out of the wood of two other plants- *Paenoe* and *Katou-tejeroe (or Cheru)*, which were of a different quality and could build different sizes of war ships.

Paenoe-

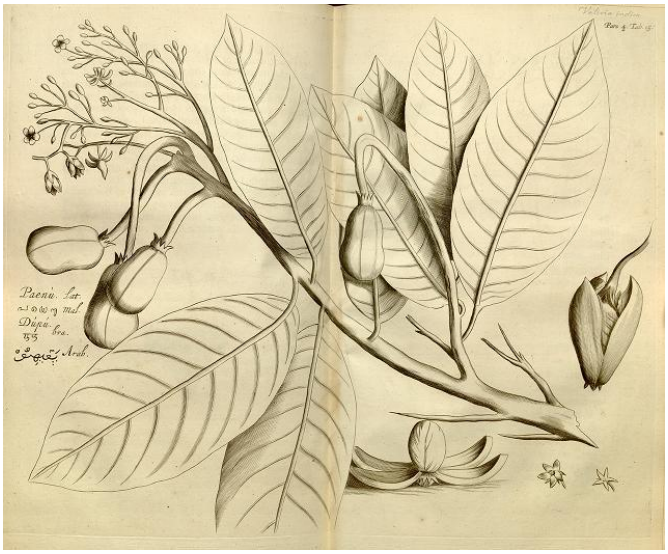

Fig. 10 illustration of Paenoe or Paynoe in modern Malayalam, grown everywhere in Malabar, *Hortus Malabaricus*, vol. 4 tab. 15.

As mentioned above, Paenoe was used similarly to Ansjeli wood-

[107] Manilal, "Preface", xxi

> Moreover, from the trunks of tender trees "Naval Mali" are made; from these hollowed out, when older, the Indians make larger boats (Manjous) which can carry sixty or more men; and those made from the wood of this tree are not easily obnoxious to wood-worms in water[108].

Additionally, Van Reede notes that merchants avidly sought after the resin from this bark, however, the reason doesn't appear in the description. It can be seen that perhaps rather than the Ansjeli wood, the bark of Paenoe appeared more durable as it could be sustained by wood-worms in water. K S Manilal adds a note identifying this wood as what we know to be plywood. This might have been useful for the Company's knowledge on ship-building materials that could be sourced from Malabar.

Katou-tejeroe-

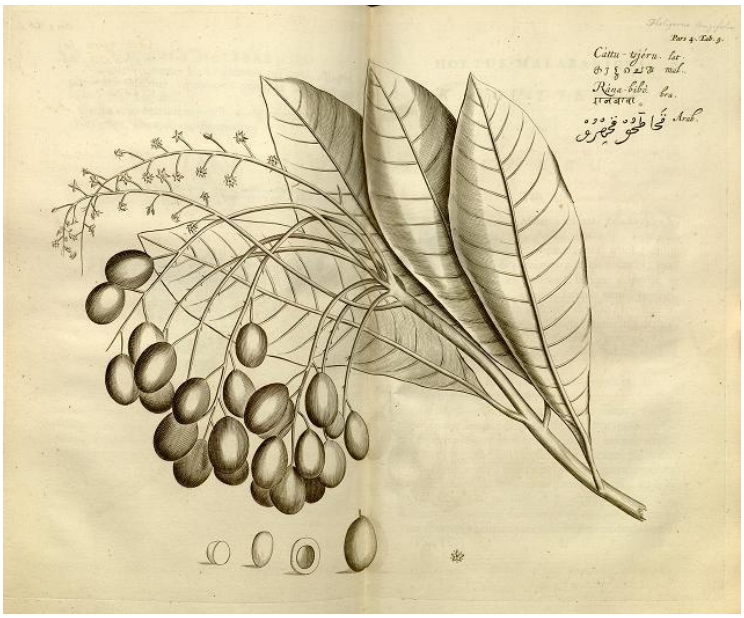

Fig.11 Illustration of a section of the Katou-tejeroe tree grown across Malabar,

Hortus Malabaricus vol. 4, tab. 9

In keeping with the interest in woods and for building boats, Van Reede includes the bark of Katou-tejeroe as seen in volume four as well as that of 'Moul-elanu', seen in volume three[109],

[108]K S Manilal, "Paenoe" in *Van Reede's Hortus Malabaricus. English Edition, with Annotations and Modern Botanical Nomenclature vol.4* (12 Vols.) (Trivandrum: University of Kerala, 2003), 51

[109] Manilal, *Van Reede's vol. 3*, 111

for constructing smaller boats or *Manjous*[110]. The exact size or the number of people has not been described.

Herbs, Spices and Nuts of Mercantile importance

Katou- Naregam-

Found in volume four of the Hortus Malabaricus, there is a small tree known as *Tsjeria Katou-Naregam* by the Malabaris, *Citt-rana-nimba* by the Brahmins, *Limoins da folha Cruzado* by the Portuguese, *Claver appelkens* by the Belgians, which grew in the mountainous regions of Malabar. Van Reede mentions the commercial value of this citrus plant in the following note-

> Moreover, the leaves of this tree are an instant remedy for curing epilepsy[..]Dried fruits strengthens the stomach and restores in the obstructed fermentation of foods, and powerfully resists air contagious from small-pox and malignant and infectious fevers, and is considered an excellent antidote to various poisons, whence is greatly priced and is avidly sought after by Arabs and other merchants[111].

Fig. 12 An illustration of *Katou- Naregam*; a valuable citrus plant with its fruits and flowers, *Hortus Malabaricus* vol. 4, tab 13.

This is one among various plants that were identified and recorded to be of value to other traders of Malabar. During the late seventeenth century, the VOC witnessed stiff competition in trade from Arab merchants in Malabar as well as the Portuguese from Goa and English in various regions of Malabar between 1680s-1690s[112]. I suggest that by recording what was

[110] Manilal, *Van Reede's vol. 4*, 27
[111] Ibid., 49
[112] Emmer, Gommans, *Dutch Overseas*, 304-305

important to other traders of the region, Van Reede was keeping with the Company requirements of observing and collecting knowledge of unique plants of prospective economic importance. An illustration of this plant, with attractive fruits can be seen above (fig.12).

Panem-Palka-

Another plant from volume four, known as *Panam-Palka* by the Malabaris, *Ambadeki* and *Palka* by Brahmins, *Nozde muluco falso* by the Portuguese, *wilde Mannekes Noole-boon* by the Belgians, Van Reede identified the fruit of this plant to be of commercial interest-

> Moreover, these nuts are no use of in medicine; however, they are sought after by Turkish and Jewish merchants who mix these with the nuts of *moschat* and also mix this reddish yellow substance covering the woody rind of this fruit with true *maci* and sell them together, similarly form these nuts and from their *maci* they press out an oil, by which mixed with oil of the genuine nut they are in the habit of cheating buyers[113].

Fig.13 an illustration of *Panam-palka*, a tree now known as Kattujathikka in Malayalam, translating to 'wild nutmeg' found in northern Malabar, *Hortus Malabaricus* vol. 4, tab 5.

While the interpretation of '*maci'* and '*moschat'* remain unknown, this nut of great economic importance to the Turkish and Jewish merchants was identified as nutmeg by K S Manilal[114].

[113] Manilal, *Van Reede's vol. 4*, 12-13
[114] Ibid.

As expanding the Company's knowledge of spices was an integral agenda, Van Reede must have made note of this for commercial knowledge that was required by the VOC.

Apart from the mention and record of other nuts and spices such as cashews, almonds and pepper, to name a few, a third spice that I chose to highlight here is that of *Elettari* or cardamom, found in volume eleven in the Hortus Malabaricus.

Elettari-

Eletarri or cardamom was a plant seen as an important spice crop for the Dutch Empire. Van Reede notes of its importance and price in the following description-

> There are three known species of Eletarri or cardamom, of which the first, which is here described and delineated, gives quite round and white fruits, whose native soil is above Cochin and Calicut in the mountainous place, about thirty thousand feet from the sea and prevails others in price because of outstanding power. The second species is more oblong, but of lower quality, the third is the lowest and quite acuminate, the latter ones are found around Cananoi, and in other places of India[115]

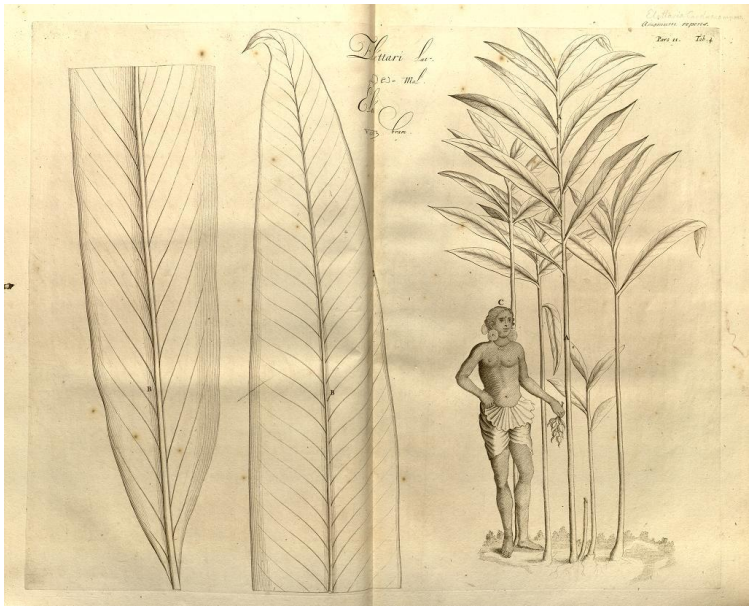

Fig. 14 illustration of the cardamom plant which stands twelve feet tall, along with an unknown local holding a small branch of cardamom pods in his hand, *Hortus Malabaricus* vol. 11 tab 4

While the exact price per candy at which cardamoms were sold at is absent from the text, Van Reede alludes to its economic importance by distinguishing the difference in price among the

[115] K S Manilal, "Eletarri" in *Van Reede's Hortus Malabaricus. English Edition, with Annotations and Modern Botanical Nomenclature vol.11* (12 Vols.) (Trivandrum: University of Kerala, 2003), 17

different species of cardamom, thus noting that this species was notably valuable for its "outstanding powers" which have little to do with medicine as no medicinal knowledge of cardamom is provided in this text. Second to pepper, the Dutch gained most of their profits from the export of cardamom from Malabar to the Netherlands. Hence, it would have been of paramount importance to keep the VOC updated with this information on the quality and price of this spice.

Ornamental Flowers and Plants

Hina-paretti-

Fig.15 an illustration of Hina-Paretti, or 'hibiscus', *Hortus Malabaricus*, vol. 6 tab 40

Seen in volume six, Hina-paretti otherwise known as *Rose de China* by Portuguese, *Sineesche Roseboom* by the Belgians was noted as a species of the flowering plant commonly known as Hibiscus. Van Reede provides a colourful and imaginative description of this flower-

> It is a spectacle of delightful pleasure, that during the winter time, the shrub thus grows (flourishes) that with many colours it at once paints the quadruple face of the year, while some snow white flowers paint the snowy winter, other flamey ones the fire of summer, the other purple ones the mature autumn, some others, by means of the passing of both life as well as of colours, paint the variously coloured spring, finally

> all and each changed colour, colour the vicissitudes of all seasons within the shortest time.
>
> Continuously green and flowering, is only grown in gardens, and delights in frequent watering and manuring[116].

Sometimes known as "Changing Rose", owing to the flower's ability to change colours from white to pink to purple was noted by Van Reede for its growth in gardens in Malabar. In doing so, Van Reede provides a description of ornamental value of the flower. This might have been important to note keeping in mind the need to collect ornamental flowers for expanding botanical gardens in the Netherlands. This, yet again is in line with the Company's order of 'exotic' plant collection.

In this section of ornamental plants, I have included *Panitsijka-maram*, a plant which Van Reede also makes note of its importance and use to other European settlers in Malabar.

Panitsijka-maram

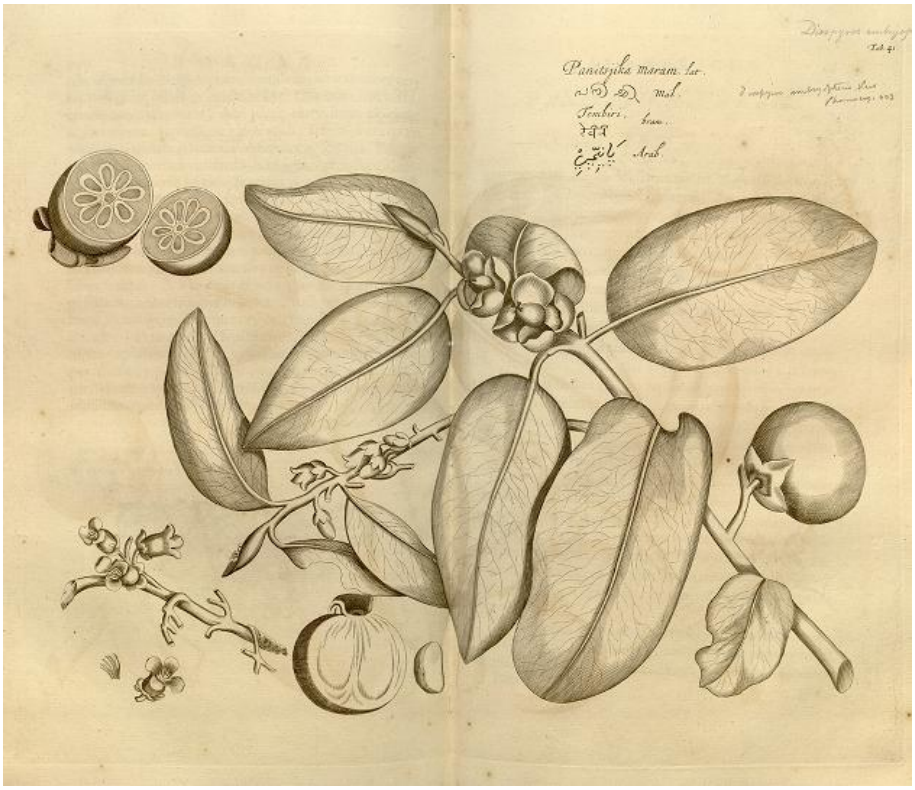

Fig. 16 illustration of the fruits, leaves and flowers of Panitsijka-maram, a plant that had mutli-faceted use for both Malayalis and Europeans in Malabar, *Hortus Malabaricus*, vol. 3 tab 41

[116] K S Manilal, "Hina-Paretti" in *Van Reede's Hortus Malabaricus. English Edition, with Annotations and Modern Botanical Nomenclature vol.6* (12 Vols.) (Trivandrum: University of Kerala, 2003), 144 vol 6

Seen in volume three, apart from using the plant and its parts as medicinal remedies for those suffering from fever, Van Reede mentions how Jews and Portuguese commercially used this plant in their daily life-

> Finally, the glutinous, gummy, transparent juice which is pressed out from immature fruits, hardening in the sun and turning red or becoming black from red and becoming glassy, become the best glue which the natives use for joining anything very tightly, wherefore the Jews and the Portuguese use only this gum in book binding and which because of this are never liable to wood-worm, and also the fishermen dye their net (steep) with the same glutinous juice so that they become more durable[117].

This snippet of information is interesting to see how different parts of the plant were used in quotidian activities, both of Malayalis and of Europeans. I suggest that at the time of writing this, Dutch Company servants were unaware of the usage of glue for book-binding and fishing nets, hence, Van Reede made note of it, perhaps for future use in Malabar or simply for acquiring knowledge of the local utility of plants.

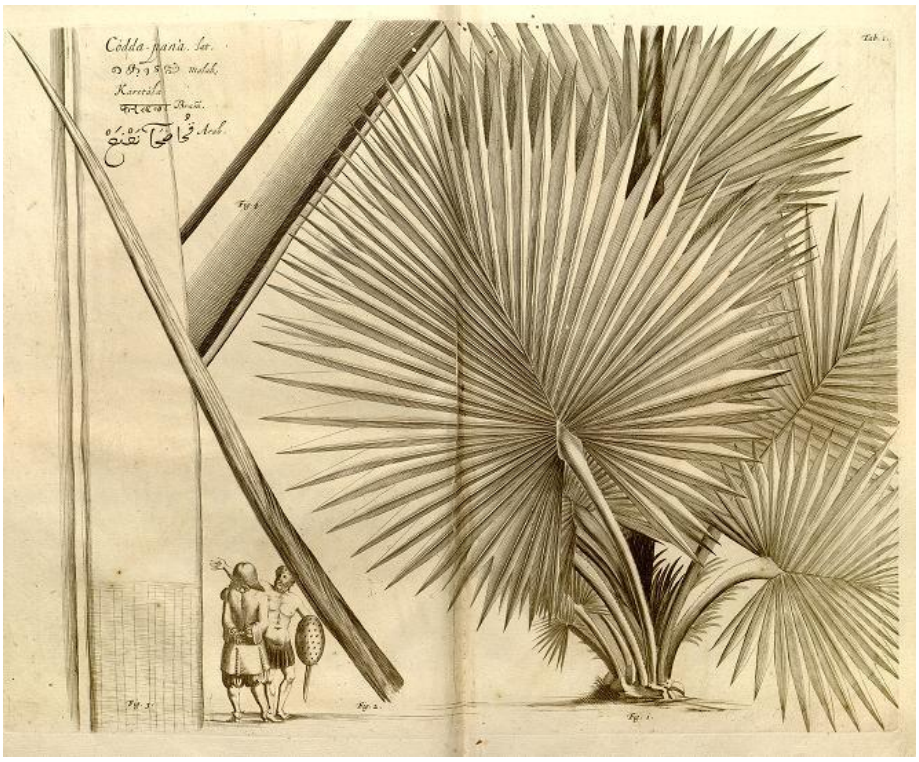

Fig.17 an insightful illustration of Codda-panna along with two men- a Dutch Company servant and a local Malayali, perhaps describing the plant to the former vol. 3, tab. 1

[117]Manilal, *Van Reede's vol. 3*, 85

In volume three, there is a similar utilisation of plants for day-to-day use. *Codda-panna* (fig.17) is another tropical plant which was unique to Malabar, wherein Van Reede wrote highly of the durable quality of parchment Malayalis used to produce from the bark of this plant. Additionally, he mentioned that women would use the fruits of this plant to make bracelets and necklaces. He remarks that this jewellery could be easily mistaken as red corals[118].

Observations on Malayali weaponry

The last two plants of this study are '*Mouricou*' and '*Mallam-todalli'*, both of which only have brief mentions of non-medicinal use. Noted in volume four, Mallam-todalli or *Karimaram* in Malayalam (black tree) had been used by the natives for two purposes; to cure epilepsy, madness and brain diseases and the second was to obtain charcoal for making gunpowder[119].

Mouricou, found in volume six, was noted for its use amongst the Malayali in making knives and sharpening swords[120].

Such knowledge about how Malayalis used plants in developing ammunition or equipment for warfare would have been important to serve European and/or Dutch curiosity and interest in how Malayalis diversified the use of their surrounding nature, hence yet again, keeping in line with the Company's needs of documenting indigenous nature and its utilisation.

Fig. 18, 19 Illustrations of Mouricou (left) vol. 6 tab. 7 and Mallam-Toddali (right) vol. 4 tab. 40

Summary and Inference on Findings

Here, by identifying a selection of plants which hold information beyond medicinal virtues, I have demonstrated through these ten examples how the knowledge of botanical utility could

[118] Manilal, *Van Reede's vol. 4*, 6
[119] Ibid., 147
[120] Manilal, *Van Reede's vol.6schie*, 27

have expanded the colonial imagination of the VOC about Malabari plants and their commercial use, potential and value. To an extent, Van Reede's Hortus Malabaricus is a commercial account of plants with prospective economic value that the Company could profit from, thus not only limiting the profits of this book to medicine, but also for using it for commerce and mercantile utility.

I posit that identifying and looking into commercial information in plant descriptions within the Hortus Malabaricus is only a starting point into the exploration of how or why these non-medicinal uses might have been of practical knowledge to the VOC.

Taking for instance the Ansjeli wood, Manilal in a footnote of the Ansjeli text states that it the usage of this wood in ship-building should be noted as large sea-going boats and ships were being constructed by using the Ansjeli wood from "time immemorial" in Malabar which also found importance in Egypt, and Mediterranean ports.

While Manilal states that there is no historical document known to him which possess this information, deriving from oral history in Kerala, he argues that local ship builders "have always been particularly insistent to use this species of wood for the main body of the vessel, adding that this wood is in high demand in present-day Kerala for making very large canoes".[121] Additionally, referring to Van Reede's observation of the wood being "easily liable to rotting by worms especially in salty (brackish) river water", Manilal mentions that the vessel should be coated on the outside with fish oil every two or three years, to add strength and durability to it.

Due to lack of research, it is difficult to find credibility in the usage of this wood outside of Kerala or colonial Malabar just yet, however, I find it relevant to highlight Manilal's observation of the popular and common usage of this wood *within* Malabar by Van Reede.

From including similar woods such as Paenoe, Katou-tejeroe, and Moul-elanu and stating their use in building '*manjous'* or war ships, Van Reede also gives us an insight into how he (and other Company servants) utilised these plants in the constructed form of *manjous* in Malabar for pursuing agendas of collecting plants and attending to administrational affairs. As this utilitarian knowledge of plants is hidden, yet provided in the Hortus Malabaricus- a treatise that is renowned for its scientific contribution- I argue that this text should not be seen as a

[121] Manilal, *Van Reede's vol. 3*, 52

treatise limited to Malayali medicinal knowledge. The botanical information listed can also be revealing of furthering colonial activities.

If we analyse the text with the broad context of science and empire, specifically botany and empire, our results can help us closely locate how Malayali botanical knowledge was appropriated for ambitions of empire-making and expansion by the VOC.

Looking at the Hortus Malabaricus through the lens of botany and empire-making, it is possible to provide a strong reason as to how and why, through a medicinal treatise, Van Reede used this opportunity to inform agents of the Empire about the utilitarian virtues of Malayali plants which the Company could further profit from. By including information on spices, expensive nuts, ornamental and indigenous flora, The Hortus Malabaricus itself can be seen as a tool which served empire-making ambitions of accumulating botanical knowledge in Malabar for cheaper substitutes of drugs, collecting plants for Dutch gardens to display political power and wealth in resources, and lastly, acquiring knowledge of spices to monopolise spice trade in South and South-East Asia.

Reflections

Ultimately, the function of the Hortus Malabaricus was not simply to serve Van Reede's curiosity about Malabari flora, but from its conception, it was created out of colonial interest and need to derive profits for the VOC. As Harold Cook suggests in Matters of Exchange, that the VOC was not founded for the "disinterested pursuit of knowledge", rather they had vested interests in making use of knowledge for their commercial enterprises[122]. In the process of discovering medicinal plants and its knowledge in Malabar which could be used amongst Dutch Company servants settled in the region, Van Reede has also produced a useful source for historians who seek to analyse other needs of the empire as well.

Having said this, for further research, I suggest that the Hortus Malabaricus should be supplemented with VOC records of this period entailing transfer of plants between Malabar and The Netherlands to accurately demonstrate the influence of plants from the Hortus Malabaricus or from Malabar upon Dutch empire-expansion between the 17th and 18th centuries. As recent research has been undertaken to offer a critical commentary of the Hortus Malabaricus[123] and study the text within the Indo-Portuguese-Dutch engagements on the

[122] Cook, *Matters of Exchange*, 416
[123] Singh, "Botanical Knowledge", 186-207

Western coast of India[124], I argue for situating this text primarily within the Dutch activities of empire-making as it offers an interesting perspective on how practical needs of bio-prospecting Malabar was met with the creation of the Hortus Malabaricus.

Hence, against the backdrop of botany and empire-making, as there has been growing interest to re-examine the Hortus Malabaricus, through this thesis I propose that there lies a broad scope of research in colonial history between Malabar and the Dutch empire that can be based off the utilitarian interpretation of the Hortus Malabaricus.

In conclusion, having set the context of the colonial production of the Hortus Malabaricus in chapter one amidst the debate of botany and empire in chapter two, in this chapter I argue that fundamentally, at its core, Van Reede's Hortus Malabaricus can be and should be interpreted as a utilitarian text for empire-making of the seventeenth century as it primarily catered to the VOC's requirement of Company servants and agents to record indigenous plants and how locals used them. Therefore, while building upon exhaustive research of scholars in this field, this thesis also further contributes to the existing conversation and debate of structural entanglement of botany and empire surrounding the text, confirming that the Hortus Malabaricus has more utility than what it has been renowned for until now- that of medicine.

[124] See Binny, "Plants Power and Knowledge", 3-19

Conclusion

Apart from demonstrating the utilitarian-ness for empire-making, I posit that this thesis, on a secondary level, is a reflection of locating the Hortus Malabaricus within the structural entanglement between botany and empire-making. This has been elaborated upon in the following three ways.

Knowledge-production and colonial ambitions

At the outset, the Hortus Malabaricus was created out of a colonial ambition to possess greater economic and political power. Reflecting upon the first chapter, we observe an entangled growth of colonial interest in medico-botanical Malayali knowledge and how this interest paved way for the emergence of Malayali knowledge on a global platform. This appears in accordance with Londa Schiebinger's observations on the intertwined relationship of botany and empire. She argues that the expanding science of plants notably depended on access to ever farther-flung regions of the globe; at the same time, colonial profits depended largely on natural historical exploration and the precise identification and effective cultivation of profitable plants[125].

Without the need of the VOC to acquire such knowledge, it is difficult to imagine how local Malayali scientific knowledge of plants would have become global botanical knowledge in the way it did. However, while it greatly contributed in the knowledge-production of botanical science that came after the Hortus Malabaricus, most notably as a main source of Linnean taxonomy in 1735, such benefits or similar profits from the production of the Hortus Malabaricus appear lacking amongst the Malayali scientific community and society of both the seventeenth century and at present. This brings us to the second characteristic of the colonial nature of the Hortus Malabaricus- an asymmetrical outcome.

Benefitting the coloniser, not the colonised

When intersecting literature of botany and empire with that on the history of the Hortus Malabaricus (primarily Van Reede's Preface to the third volume), glaring differences are visible in asymmetrical (or lack of mutual) benefits obtained between Dutch collectors of plants and recipients of the Hortus Malabaricus in Europe on the one hand, and on the other hand, Malayali brahmins and physicians who helped construct it.

[125] Schiebinger, *Colonial Botany*, 2

While the text helped in the creation of a new Linnean taxonomy- that is still presently in use- we are left without the tools to understand the original system of Malayali classification of plants. Even though a manuscript of *Viridarium Orientate* of Matthew of St. Joseph, exists in the Musee d 'Histoire Naturelle in Paris[126], the descriptions and drawings of which give a good idea of the original plan of Hortus Malabaricus, albeit along with the drawings of volume eleven and twelve, the drafts upon which Van Reede recorded the Malayali knowledge of plants are not to be found. Can this lack of preserving drafts by Van Reede be deduced to his amateur and thus, unethical process of collecting knowledge? Possibly. While we may never know what the original Malayali system of classification was, the lack of record-keeping of non-European sources by amateur collectors is an interesting point to note as botany, in its emergence as a scientific discipline, could have given way for more unprofessional and unethical conduct for collecting information. Hence, further proving that botany or in this case the Hortus Malabaricus was developed for the benefit of the empire, not in any way for the Malayali.

With the regards to the production of the Hortus Malabaricus and lack of knowledge, Malavika Binny's argument is important to note here; "the knowledge which was collected from the Malabar Coast for the production of Hortus Malabaricus was distilled and reformulated in such way that the final product was bereft of any epistemic semblance of either Ayurvedic or Ezhava knowledge." There lies an irony in the production of the Hortus Malabaricus, as though the text has been acclaimed *for* local Malayali scientific knowledge, we are in fact left *without* such knowledge.

Deriving power from dichotomies

Lastly, Van Reede was able to produce medico-botany of Malabar by relying on Brahminical knowledge amongst upper-caste Brahmins. This is a very interesting point to reflect upon because when this knowledge wasn't dispersed within the hierarchies in Malayali society, such knowledge derived from the Vedas and sastras were easily provided to an outsider of the hierarchy, and of the Malayali society for no profit or gain. In this aspect, the Hortus Malabaricus not only creates a divide between the Europeans and Malayali physicians, but also alludes to the process in which European scientific knowledge-making and colonial needs of the VOC hugely benefitted out of a system of oppression within the Malayali society. Hence,

[126] Heniger, "Introduction", ix

making it more difficult to disentangle the growth of botanical and Malayali scientific knowledge from colonial activity and vice-versa.

By placing the study of the Hortus Malabaricus within the characteristic framework of colonial botany, we gain more ease and depth in understanding how the Hortus Malabaricus lies at the nexus of entanglement between Malayali botany and Dutch empire-making.

Having discussed what we have lost in the production of the Hortus Malabaricus, as a colonial-historian-in-training, I ask what can we make of what is left from the Hortus Malabaricus? Though the information in the Hortus Malabaricus was more beneficial to the colonisers rather than to the Malayali, a study of Van Reede and his work would be incomplete without illuminating his efforts to shed light on local aspects of Malabar and the Malayalis too.

Across all illustrations and introduction of plants, Van Reede maintains a standard and organised format of mentioning the plant name in numerous languages spoken from East to West. Additionally, the title in the illustrations were written in the respective script of the language. Another aspect of the illustrations which is certainly fascinating to observe is the inclusion of Malayali men and women in their natural form alongside drawings of plants. This gives a reader a visual insight into the quotidian lifestyle and apparel donned by the Malayalis.

Therefore, while the Hortus Malabaricus appears as a visual source in constructing aspects of Malayali society, and in a way their cultural heritage, the botanical treatise appears as an instrumental source and an exciting opportunity to construct a larger aspect of colonial and global history. By looking into the utilitarian text not from a perspective of only science, but the history of science and empire, historians can use the Hortus Malabaricus as a starting point in grasping the larger influence of Malabari plants on the Dutch empire during the seventeenth century.

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