



SOCIETY FOR ASIAN ART

Volume 20 Number 1

# Lotus Leaves



Fall 2017

**Precious Trinkets: Chinese Snuff Bottles**  
by Vincent Fausone, Jr.

3

**Seeds of Culture: Indian Botany and Medicine  
in Pre-Modern Europe** by Annamma Spudich

18



## About the Society

The Society for Asian Art, a 501(c)(3) nonprofit organization that was incorporated in 1958 by a group of enlightened citizens dedicated to winning Avery Brundage's magnificent art collection for San Francisco. Since that time, we have been an independent support organization for the Asian Art Museum - Chong-Moon Lee Center for Asian Art and Culture.

For over fifty years, we have offered a wide range of innovative, high-quality educational and cultural programs, along with social (and culinary) events where participants share their knowledge and enthusiasm. SAA's popular, Arts of Asia Lecture Series, open to all, is the core of the museum's docent-training curriculum. We sponsor foreign and domestic travel, visits to private art dealers and collections, in-depth study groups, special lectures by leading scholars, literature courses and symposia. Much of our programming supports specific exhibitions.

Society  
for Asian  
Art

## Board of Directors 2017-2018

President  
Anne Adams Kahn

Vice President  
Maureen Hetzel

Vice President  
Peter Sinton

Secretary  
Trista Berkovitz

Treasurer  
Ed Baer

Asst. Treasurer  
Vince Fausone

Melissa Abbe

Deborah Clearwaters\*

Sheila Dowell

Margaret Edwards

Jennifer Kao

Etsuko Kobata

Myoung-Ja Kwon

Kristl W. Lee

Sherlyn Leong

Forrest McGill\*

David Menke

Howard Moreland

Greg Potts

Merrill Randol

Pamela Royse

Ehler Spliedt

Nazneen Spliedt

Lucy Sun

Alice Trinkl

Kalim Winata

Sylvia Wong

Kasey Yang

Carolyn Young

\*ex officio

## Advisors

Mitra Ara, PhD

Guitty Azarpay, PhD

Terese Bartholomew

Patricia Berger, PhD

Sandra Cate, PhD

M.L. Pattaratorn  
Chirapravati, PhD

Kim Codella, PhD

Robert J. Del Bonta, PhD

Renée Dreyfus, PhD

Penny Edwards, PhD

Munis D Faruqui, PhD

Nalini Ghuman, PhD

Robert Goldman, PhD

Sally Sutherland  
Goldman, PhD

Kumja Paik Kim, PhD

Alma Kunanbaeva, PhD

Sanjyot Mehendale, PhD

Mary-Ann Milford-  
Lutzker, PhD

John Nelson, PhD

Benjamin W. Porter, PhD

Stephen Roddy, PhD

Dawn F. Rooney, PhD

Donald M. Stadtner, PhD

Richard E. Vinograd, PhD

John Wallace, PhD

Julia White

Joanna Williams, PhD

John Zarobell, PhD

# Precious Trinkets: Chinese Snuff Bottles

by Vincent Fausone, Jr.

Any discussion of Chinese snuff bottles must begin with the introduction of tobacco to China, for this container was invented to contain snuff, which is powdered tobacco. Tobacco, native to the New World, arrived in Europe in the early 1500's. It was introduced into Manchuria and Mongolia in the early 1600's,<sup>1</sup> during the reign of Kangxi (1662–1722), the second Emperor of the Qing Dynasty. Smoking tobacco in pipes in northern China was common. The Chinese, as well as Europeans, considered tobacco a medicine, salubrious especially for diseases of the respiratory system. However, the Emperor Kangxi, a Manchu warrior, with a classical Han Chinese education, decreed that smoking tobacco was vulgar and forbade the smoking of tobacco at the Imperial Court.

However, in the early 1680's Emperor Kangxi was introduced to snuff ("nose tobacco" or *biyan*) by Jesuit Missionaries. The particular snuff

they presented was *amostrinha*, a finely ground snuff made in Portugal from a special Brazilian tobacco.<sup>2</sup> The amount of nicotine in a pinch of snuff is 10 times the amount in a cigarette, so it is highly addictive. Though smoking tobacco was forbidden, snuffing was not. Rather, it was said that snuff was an appropriate offering to the Daoist "Goddess of the Nose." The taking of snuff rapidly developed into a highly elaborate and ritualized practice with its own code of etiquette. Almost immediately, the snuff bottle container, apart from its practical use, became a treasured objet d'art. The best craftsmen were commissioned to make these bottles, and they are examples of the finest craftsmanship of the Qing Dynasty.

The container for snuff that prevailed in Europe was the preciously decorated snuff box. One example of 17th century snuff boxes is from the Wallace Collection in London ([Figure 1-1](#)). The



Cover: Glass inside painted snuff bottle by Yeh Zhong San, depicting the story of the Goddess of the Locust who came to town on a donkey to rid the fields of locusts, dated 1906, Fausone collection.



Figure 1-1: Enameled gold snuff box, 1793, Vienna, courtesy of The Wallace Collection, London.



Figure 2-1: Three Bavarian snuff bottles, ca 1700, Schafer collection.

snuff box, however, was not a suitable container in Beijing, where the high humidity caused the poorly sealed powdered tobacco to cake. The Manchus selected bottles that could be tightly stoppered as an appropriate receptacle for snuff. These keep the tobacco powdery. Furthermore, the Chinese had long used small bottles to contain medicines, and snuff was considered a medicine.

### Materials and Techniques Used to Make Snuff Bottles

Another important reason the Chinese selected the snuff bottle was a Jesuit, Killian Stumpf. The Emperor Kangxi chose Stumpf to be the first superintendent of the Imperial Glass Works in 1696. Stumpf was a scientist and mathematician who was also proficient in glass-making. Stumpf came from Bavaria where they had been making glass bottles as containers for snuff since the early 1600's.<sup>3</sup> [Figure 2-1](#) shows three Bavarian snuff bottles. The first Chinese containers for snuff were made of glass in the Imperial Glass Works. Initially,

bottles were made of red, blue and clear glass in imitation of jewels, such as the bottle shown in [Figure 3-1](#). [Figure 4-1](#) is an early Chinese glass snuff bottle with ribbons of jewel color.

Though the Chinese have a long history of glass-making, the Qing Imperial Glass Works was not founded to copy Chinese glass of the past, but to emulate the sophisticated glass being made in Europe that so delighted the Emperor Kangxi. There is no doubt, as Hugh Moss points out, that any discussion of "Peking Glass" must include snuff bottles because the majority of glass objects produced during the Qing Dynasty were snuff bottles.<sup>4</sup> For example, the ruby red color was made from a Venetian formula that required colloidal gold as an element. However, the ultimate product, the Chinese snuff bottle, became a uniquely Chinese decorative object, influenced by European style and design, but entirely original.

The first snuff bottles were made by blowing glass into molds.<sup>5</sup> Many of these early bottles, including those from the Yongzheng reign (1723–



Figure 3-1: Ruby red glass Chinese snuff bottle, 18th century, Fausone collection.



Figure 5-1: Dark amber faceted glass double-gourd shaped Chinese snuff bottle in imitation of amber, exhibiting extensive interior crizzling, Yongzheng period (1722–35), Fausone collection.



Figure 4-1: Chinese striped glass snuff bottle, 18th century, Fausone collection.

1735), exhibit crizzling on their inner surface, a glass disease that caused flaking or fine crackling. This was due to a poor flux of the glass material thought to be largely due to the addition of European glass shards to the glass matrix. See [Figure 5-1](#) for an example.

Another early innovation was multicolored marbled glass bottles. This is a technique where a still molten glass bubble is rolled in colored glass filings, frit, and then covered by a gather of clear glass so that the colored design is between two layers of glass. Such bottles are also referred to as “sandwiched” glass bottles. [Figure 6-1](#) is an example.

Another technique developed during the Yongzheng reign was the fabrication of overlay glass bottles, where one to three layers of different colored glass is applied to a glass base and carved, resulting in multicolored relief designs. In the west this was referred to as “cameo glass,” a technique that had been perfected by the Romans, but had been lost in Europe for over 100 years until it was



Figure 6-1: Multicolored splashed marvered sandwich glass Chinese snuff bottle with gold flecks in the style of aventurine glass, Yongzheng period, Fausone collection.



Figure 7-1: Overlay glass snuff bottle, red over camphor glass, with an archaic design of facing dragon and phoenix, ca 1750-1820, Fausone collection.

rediscovered in China in the early 1700's, Some of the most intriguing and appealing snuff bottles are overlay glass bottles, such as those shown in [Figures 7-1](#) and [8-1](#).

During the Yongzheng period, craftsmen also began fashioning bottles of jade and hardstones, using designs similar to those of the glass bottles. Mr. Y. F. Yang, a noted snuff bottle dealer and authority now located in Honolulu, reported to me in the 1990s that the reason stone bottles were invented is because the early glass bottles were fragile and often would break in the cold winters of Beijing. Thus, glass bottles were used only during the warm months of the year, and stone bottles were used during the winter. Since snuff bottles were identified with the ruling class and the influential minority, it is no wonder that literati esthetics became important in their fabrication. All manner of stones became popular substances



Figure 8-1: Glass overlay snuff bottle, brown cinnabar over teal green glass, depicting the star deer with a rock, a symbol of longevity, ca 1736-1795, Fausone collection. This type of bottle would have been a birthday gift.

for snuff bottles, including: nephrite, chalcedony ([Figure 9-1](#)), and fossiliferous limestone ([Figure 10-1](#)). Many organic materials were popular as well: ivory, various shells, peach pits, fruits ([Figure 11-1](#)), and lacquer.

Enamelled snuff bottles, first on metal, usually copper, and then on glass were also invented during the Kangxi period, and became especially revered in the subsequent Yongzheng and Qianlong reigns. Enamel is a glass paste mixture that melts at a lower temperature than other kinds of glass, and can be used to “paint” designs on harder materials, such as metals, ceramic glazes and harder glass. Enamelled art objects in China date back to the Yuan Dynasty (1260–1368), when the technique was introduced from the west,<sup>6</sup> and the technique flourished during the Ming Dynasty (1398–1644). However, enameling on glass, the most difficult substance on which to



Figure 9-1: A natural chalcedony snuff bottle with an exciting abstract design expressing the inner qi of the material, that so delighted the literati, 19th century, Fausone collection.



Figure 10-1: Natural fossiliferous lime stone snuff bottle, late 18th or early 19th century, Fausone collection. The pattern in the stone suggests a calligraphic inscription.

apply enamels, was introduced by Jesuits during the reign of Kangxi. Jean-Batiste Gravereau, Giuseppe Castiglione, and Michel Benoist were adept enamellers who taught Chinese craftsmen the art of miniature enameling. The Jesuits also introduced new colors of enamel, particularly the color white that could be used to make gradations of color and shades not previously possible.

From the Daoguang period (1821–1850) onwards, the taking of snuff, now made from domestic Chinese tobacco, became affordable to the general population. As a result, the vast majority of snuff bottles began to be fashioned of a less expensive material: porcelain. Porcelain had been used to make snuff bottles since the reign of Kangxi, but now became ubiquitous. The quality of craftsmanship varied from exquisite literati blue and white bottles to haphazardly produced cheap bottles of little artistic merit.

## The Designs Used on Snuff Bottles and Their Social Meaning

The designs on enameled bottles of the Kangxi and Yongzheng reigns are all Chinese.<sup>7</sup> There are no European subjects on these early bottles. [Figure 12-1](#), an enamel on glass bottle from the Yongzheng reign in the National Palace Museum in Taiwan, is an example. The bottle is shaped in the form of a bamboo stalk with a design of insects and spiders.

That all changed in the reign of Qianlong, who was captivated by European subjects. A plethora of European ladies, children and gentlemen, along with European landscapes appear on enameled wares of his reign. The most expensive snuff bottle sold at auction to date is a Qianlong enameled glass bottle that depicts different western ladies on front and back and European landscapes on



Figure 11-1: Molded lacquered tangerine snuff bottle, 19th century, Fausone collection. This bottle was made by placing a mold over a tangerine bud and allowing the fruit to grow into this shape.

the sides. This bottle, which sold for more than US \$3,000,000, now resides in the Sanctum of Enlightened Respect Collection in Singapore.

Most of the enameled bottles of the early 18th century were made for the private collections of the Emperors and the imperial families. Many never held snuff, but were appreciated as art objects. These enameled bottles, especially enamel on glass bottles, are the most highly sought after and the most expensive today.

There is a group of enameled bottles, however, that were made in great numbers, commissioned by the Emperors, especially the Emperor Qianlong, to be gifts to his officials. These bottles of enameled porcelain were made by the thousands. Porcelain was a cheap material in China, and as Hugh Moss, one of the leading authorities on Chinese snuff bottles, points out,



Figure 12-1: Enameled glass snuff bottle in the form of a bamboo stalk with a design of spiders and insects. Yongzheng marks on the base and of the period. Courtesy of the National Palace Museum, Taiwan.

“what was being gifted was the expensive snuff, not the bottle.”<sup>8</sup> The three main annual festivals where the Emperors always presented gifts to their officials were the Dragon Boat Festival,<sup>9</sup> the Mid-Autumn Festival and the New Year’s Festival. [Figure 13-1](#) is an example of a festival gift bottle from the reign of the Emperor Qianlong.

By the time of the death of the Qianlong Emperor in 1799, snuff bottles were highly prized for their intrinsic beauty and were referred to as “precious trinkets.” They were actively collected by the influential minority in China, because they were fabricated by the very best craftsmen.

A notorious example of the allure of snuff bottles is the Emperor Qianlong’s Prime Minister, Heshan, who is said to have amassed a collection of more than 2000 bottles, which he received primarily as bribes. Most of his collection were hardstone



Figure 13-1: Porcelain enameled spade shape snuff bottle with 100 shou or longevity characters, mark and period of Qianlong, Fausone collection. Such a bottle was given by the emperor to his officials.



Figure 14-1: Enameled porcelain snuff bottle depicting five roosters or *wu* in Chinese, that brings to mind five Lords, *wugou*, so the bottle denotes a wish for the recipient to pass the civil service exams and achieve high rank, Guangxu marks and of the period (1875-1908), Fausone collection.



Figure 15-1: Porcelain snuff bottle depicting Zhong Kui, the Demon Queller and Protector, in iron red over a turquoise blue glaze, 19th century, Fausone collection.

bottles, fashioned of nephrite, chalcedony and several hundred of tourmaline. His collection was discovered after he was forced to commit suicide for corruption at the behest of the Jiaqing Emperor in 1799.<sup>10</sup> During the Qing Dynasty, snuff bottles were used as gifts and often bore designs that expressed special wishes to the recipient through symbols. One of the most important group of designs conveyed wishes for civil service candidates to pass their exams and achieve rank and privilege. See [Figure 14-1](#). Snuff bottles with wishes for longevity were favored birthday presents. For a marriage, designs expressing wishes for fidelity, fertility, longevity and many sons were offered. Wishes for wealth and prosperity, always very important sentiments in Chinese iconography, were popular motifs. However, snuff bottles were not only gifts; they were used as bribes to officials.

Other popular motifs were Zhong Kui, the Deamon Queller (see [Figure 15-1](#)), and depictions of Daoist Immortals and Buddhist Lohans (see [Figure 16-1](#)). Almost all designs on snuff bottles have specific meanings. For example, during the Daoguang period onward there are vast numbers of bottles that depict katydids or crickets. The word katydid is *quoquo* in Chinese, which is a homonym for country or nation, so the presence of a katydid indicated loyalty to one's country, meaning the Emperor (see [Figure 17-1](#)).

Another example of a specific meaning can be found in the motif of magpies on *prunus* branches. This design translates to, "may you have happiness up to your eyes," and a bottle so decorated made a splendid gift to a newly married couple. (See [Figure 18-1](#)).



Figure 16-1: Molded and carved porcelain snuff bottle depicting the 18 Chinese lohans (the first disciples of the Buddha), late 18th or early 19th century, Fausone collection. Each lohan is depicted with his specific identifying emblem.



Figure 17-1: Porcelain snuff bottle with enameled design of a katydid, Daoguang period (1821-1850), Fausone collection.



Figure 18-1: Enamel on porcelain snuff bottle depicting 30 magpies on prunus blossoms, denoting a wish for the married couple to have happiness up to their eyes, every day of the month, 19th century, Fausone collection.



Figure 19-1: 1) Quartz crystal snuff bottle with inside painting of a prunus branch and calligraphy by Zhou Leyuan (1882-1893), Fausone collection.



Figure 20-1: Inside painted rock crystal snuff bottle by Ma Shaoxuan, dated 1896, depicting the Qiao Sisters reading a book. The legendary Qiao Sisters were great beauties who married warlords at war with one another, as described in the Chinese literary classic, *The Romance of the Three Kingdoms*. Private collection.

In the mid-19th century, the technique of inside painted bottles was invented by amateur literati painters. The first such bottles were made to contain snuff, even though the use of the spoon to dip snuff often destroyed the fragile water colored painting. Toward the end of the 19th century, however, a number of professional inside painters began to create inside painted bottles primarily for the collectors' market in China. These bottles rarely were used to contain snuff, nor were spoons inserted into them. Using subject matter favored by the literati and also subjects reflecting popular literature, these artists, although commercial in their endeavors, became famous and adulated persons. Among the most famous inside painters are: Zhou Leyuan (see [Figure 19-1](#)), Yeh Zhong San (see [Cover](#)), Ma Shaoxuan (see [Figure 20-1](#)), Ding Erzhong, Meig Zishou, and Yan Yu Tien (see [Figure 21-1](#)). The

inside painting technique flourished into the 20th century and continues to be the medium for decoration of most contemporary snuff bottles.

During the Cultural Revolution in China (1966-1976) when individual recognition of artists was prohibited, many inside painted bottles with sanctioned governmental motifs were produced anonymously. [Figure 22-1](#) depicts the heroine of the Red Lantern Opera, Li Tiemei, who follows the example of her parents who sacrificed their lives for the revolution. In this opera, which was one of only eight model plays permitted during the Cultural Revolution, Li Tiemei joins the revolutionary forces, determined to fight against the enemies of the people and insure the success of the revolution. Other bottles from the period depict poems of Chairman Mao with appropriate images.



Figure 21-1: Inside painted glass snuff bottle by Yan Yu Tien depicting sages on a mountain path, Fausone collection.



Wang Xisan, an important modern artist, emerged during this period. He established a school for inside painters and trained many talented contemporary artists. His bottles are in high demand. [Figure 23-1](#) is one of his works. One of his students, Su Feng Xi, is known for painting birds and fish in a style of reminiscent of the Song Dynasty. [Figure 24-1](#) is an example. The Asian Art Museum's collection on display includes another of his snuff bottles. Another contemporary artist, who is particularly adept at portraiture, is Dong Xue. [Figure 25-1](#) is a portrait of the Xuantong Emperor, Pu Yi, the last Emperor of China, painted in 2003. Although he had only photographs to go by, Dong Xue managed to convey the sadness and pathos this man endured throughout his life.

Even though snuff bottles were collected by emperors and highly valued personal treasures, they were placed in the "miscellaneous category" when imperial treasures were evaluated and examined in 1925. As a result, they were considered handicrafts, which by Confucian standards



Figure 22-1: Inside painted glass snuff bottle depicting Li Tiemei, the heroine of the Red Lantern Opera, painted during the Cultural Revolution, 1966–1976, Fausone collection.



Figure 23-1: Inside painted glass bottle by Wang Xi San depicting dogs, painted in the style of the Jesuit Giuseppe Castiglione, 1970's, Private collection.



Figure 24-1: Inside painted yellow tinted glass bottle by Su Feng Yi depicting a robin on a branch, 2001. Fausone collection.



Figure 25-1: Inside painted glass bottle by Dong Xu, 2003. This is a portrait of the last Emperor of China, Xuan Tong (otherwise known as Pu Yi), who reigned from 1908 – 1912, but did not die until 1967. Fausone collection.

are of little value. Unfortunately, that is how most curators and authorities of Chinese art still consider them. Rather than being undervalued, Chinese snuff bottles, truly precious trinkets revered during their 200 years of practical use, should be recognized as the epitome of Chinese artistic craftsmanship in all the materials used during the Qing Dynasty (1644-1911).

**VINCENT FAUSONE, JR.** is a graduate of UC Berkeley and received his MD degree from UCSF. He was chairman of the Department of Obstetrics & Gynecology at Kaiser Permanente South San Francisco, from which he retired in 1999. He served as President of the Society for Asian Art from 2002 to 2004 and as President of the International Chinese Snuff Bottle Society from 2005 to 2011. He is a devoted collector of Chinese snuff bottle, and recently published the Helen Pritchard Collection of snuff bottles at the Oakland Museum. He presently serves on the Board of Directors of the Society for Asian Art.

## Notes

1. Carol Benedict, *Golden Silk Smoke: A History of Tobacco in China 1550–2010*, University of California Press, London, 2011.
2. *Ibid.*, 113.
3. Hiener Schaefer, *From Bavaria to Beijing: Four Centuries of Snuff Bottles in China and Bavaria*, catalogue for exhibition, October 3, 2009–May 15, 2010, Glass Museum Frauenau, 2009 Schaefer Foundation, Durk and Servoce Garhammer GmbH, Germany.
4. Hugh Moss, et al, *A Treasury of Chinese Snuff Bottles: The Mary and George Bloch Collection*, Vol. 5, Part 1, Glass, Harold International, Ltd., Hong Kong, 2022.
5. *Ibid.*, 14.
6. Bob C. Stevens, *The Collectors Book of Snuff Bottles*, Weatherill, NY & Tokyo 1976, 262–263.
7. *Ibid.*, 274.
8. Hugh Moss, et al., 53.
9. *Ibid.*, 25.
10. *Ibid.*, 16.



Until the early modern era, India was a nexus of international trade and travel. A vast network of land and sea trade routes extending from South East Asia and China to the Persian Gulf, Alexandria, and to Europe, were well established by the 1st century CE. Maritime trade routes between India, Africa, and the Middle East, and inter-Asia trade between India and South East Asia and China converged on Muzuris, Kochi, and Calicut, port cities on the west coast of India. Regional merchants dominated each segment of the trade routes, many of which came together in Alexandria. From there Venetian and Genoese merchants took Asian merchandise to European markets. Trade brought together diverse cultures, and spread knowledge and philosophical influences along the trade routes.

Early documents give detailed accounts of trade between the Middle East and India's Malabar Coast. The first century Greek document, *Periplus of the Erythraean Sea*, (60-75 CE), by an unknown author, perhaps an Arab merchant, gives detailed accounts of voyages from the Middle East to Calicut, Muzuris, and Quilon on India's Malabar Coast. Sailing vessels took advantage of the seasonal monsoon winds to travel from the Arabian Peninsula or the Persian Gulf to the Indian peninsula and back. Pliny the Elder noted, "If the wind called Hippalus happens to be blowing, it is possible to

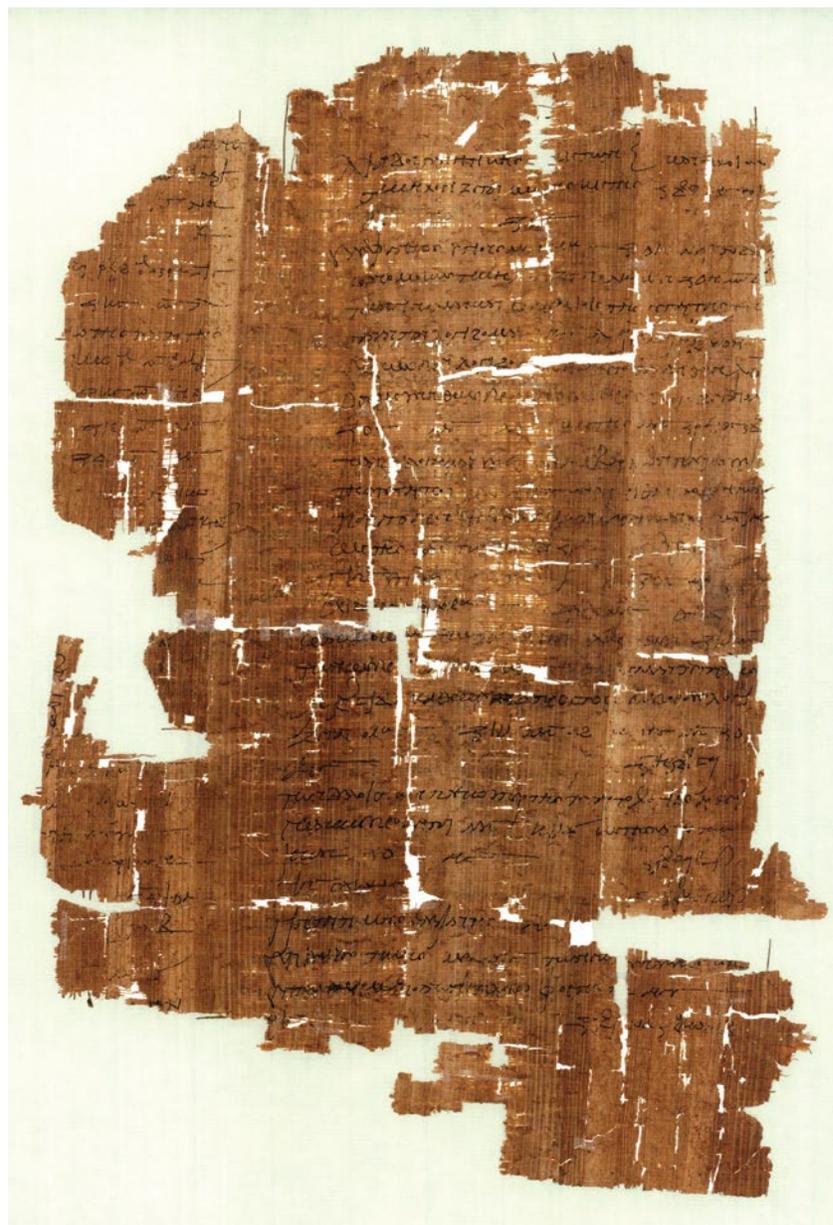


Figure 2-2: Muzuris Papyrus, P. Vindob, G 40822, courtesy of Austrian National Library, Vienna.

arrive in forty days, at the nearest mart in India, Muzuris by name."<sup>1</sup>

The India trade included natural products, such as spices, medicines, dyes, and mordants, manufactured goods that required complex understanding of the properties of

materials such as dyed cotton textiles, metal mirrors, superior glass and artificially colored stones, and luxury items such as diamonds and pearls.

The second century Muzuris Papyrus (Figure 2-2), a fragment of a loan agreement drawn up in Muzuris on the South West

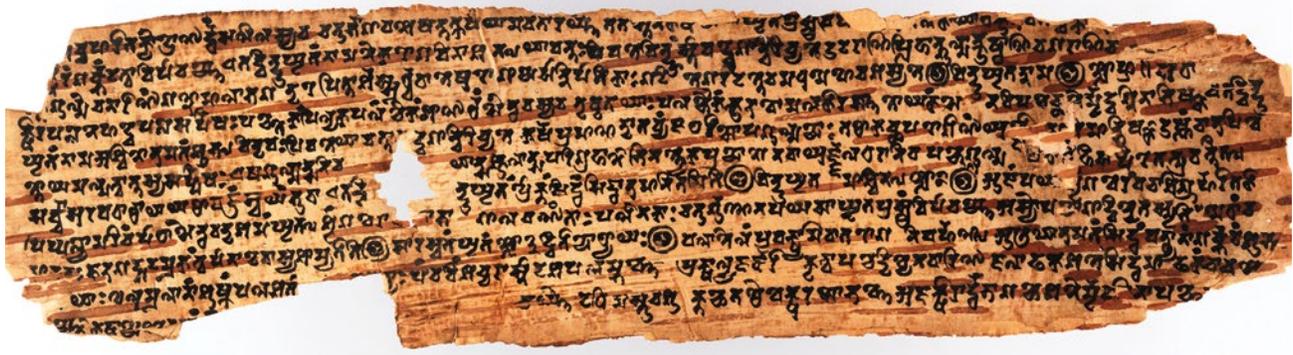


Figure 3-2: Bower Manuscript, obverse, Part II, Leaf 9, birch bark, Sanskrit with Prakrit and Brahmi scripts, 4th–6th C. CE, courtesy of Bodleian Library, Oxford Univ.

Coast of India (near present-day Kochi) between two foreign merchants resident there sheds light on the extensive trade from the west coast of India to the Middle East and beyond. According to the Princeton scholar L. Casson, “One of the great contributions of the papyrus is the concrete evidence it furnishes of the huge amounts of money that trade with India required. The six parcels of the shipment recorded on the verso had a value of just short of 1155 talents (col. 2, line 29) almost as much as it cost to build the aqueduct at Alexandria Troas (7,000,000 drachmas).” In modern terms the shipment included: 60 containers of Gangetic nard, 7478 pounds of ivory, and 1214 pounds of fabric. Nard (spikenard) was an essential ingredient of perfumes and unguents, and was extracted from the medicinal plant *Nardostachys jatamansi*.<sup>2</sup> Its oils were believed to have medicinal properties as a sedative.

India has one of the oldest, continuously practiced traditional medical systems in the world. The healing and agrarian knowledge traditions of India were the underpinnings of the major components of India trade. Since Vedic times healing plants and specifics of their curative properties were well known to physicians and healers from all levels of Indian society. The efficacy of Indian medicines made them highly sought after in the pre-modern world. While the complex molecular pathways and chemistry were unknown at the time, many of the underlying concepts have been confirmed with modern scientific methods.

In the Rg Veda of 1500–900 CE, healing herbs were “the first born of the gods” and one who had knowledge of the curative properties of plants was a “*bhisaj*, a demon-killer, plague-dispeller.”<sup>3</sup> Indian medicines and spices and knowledge about their uses were reported in *Materia Medica* of Dioscorides (circa 40–90 AD), an early text of European pharmacology. Many of these medicines, including pepper, cloves, cinnamon, and cardamom, were at the core of the European therapeutic regimen and diet for centuries.

Buddhist monks and monasteries were integral to the spread of Indian botanical medical knowledge systems across Asia and into the Middle East. Indian botanical medical knowledge was spread through the caravansaries of central Asian trade routes. The 4th century Bower Manuscript (Figure 3-2), discovered in the ruins of a Buddhist stupa in Kuchar in central Asia, as well as manuscript fragments in Chinese and central Asian languages on Indian medicines and therapies found among scrolls at the Dunhuang caves, illustrate the role of Buddhism in the spread of Indian healing practices in Asia. The Bower Manuscript was identified to be the pocketbook of the Buddhist monk-physician Yosamitra, and the detailed descriptions of medicines in the volumes relate closely to classical texts of Indian medicine.

“[T]ake the following ingredients, goat’s milk, ginger, Vacha (*Acorus Calamus*), Sigu, (*Moringa pterygosperma*), chebulic myrobalan,



Figure 4-2: Arab dhow by Al-Wasiti from the Maqamat-al-Hariri, 13th C. manuscript, MS Arabe 5847, fol.119v., courtesy of Bibliotheque Nationale de France.



long pepper, black pepper, Patha (*Stepaniaher nandifolia*), rock salt and clarified butter....” “Take one pala each and boil these in one preastha of clarified butter, together with four times as much of the milk. By the use of this preparation a man attains memory and intelligence.”<sup>4</sup>

According to S.D. Goitein, by the Middle Ages, the India trade was an international enterprise and “the backbone of the international economy” and “medicinal substances were supremely important commodities.”<sup>5</sup> Along with the enormous wealth brought to India by trade, Indian culture was greatly enriched by communities of foreign traders who became part of Indian society. India trade brought Jews, Arabs, and Christians from the Middle East, and Moors from Africa, who settled along the west coast of India and became part of India’s cultural landscape. The contributions of these communities are still reflected in the prosperity and cultural richness of the southwest coast of India. Foreign traders were under the protection of regional rulers, who benefitted from the international commerce. Trade created a wealthy and flourishing Indian and international merchant class in the region.

An illustration from a 13th century manuscript in the Bibliotheque Nationale de France, of a compendium of tales by al-Hariri, shows an Arab dhow (Figure 4-2), a small sailing vessel of the type that dominated the Indian Ocean trade between Africa, the Middle East and India for centuries. Two first day stamp covers issued by the Indian postal service in the mid-20th century (Figures 5-2 and 6-2), commemorate the Jewish and Christian merchant communities that were vital parts of the multicultural trading enterprises in south west India. One cover honors the 400th anniversary of the rebuilding of the Kochi Pradeshi synagogue of the Jewish community of Malabar (one of the oldest in the world) on the site of an earlier edifice from the first millennium. The other, showing the Persian cross from St. Mary’s Valiapally in Kottayam, Kerala, on the first day cover (1973), commemorates the Christian communities from the Middle East who came to India as spice traders in the first millennium, and have been spice growers and spice merchants to this day.

## The search for a direct route to the Indian Malabar coast was the major impetus for the “Voyages of Discovery” that changed the geography and culture of the world.

**D**omination of Indian-international trade by merchants from Asia and the Near East was tremendously costly to European nations. At the end of 15th century the Italian navigator Christopher Columbus, under the patronage of the Spanish monarchy, sailing a western route for India discovered the then unknown continent of the Americas, and Portuguese navigator Vasco da Gama under the patronage of King Manuel of Portugal reached the southwest coast of India from Africa with the help of an Arab pilot. The story of the “Voyages of Discovery” and the subsequent colonial enterprise in Asia have been the subject of much scholarly attention and popular imagination. However, the knowledge systems of India, particularly in botanical medical sciences that were an initial driving force behind the “Voyages of Discovery,” and made significant contributions to European science and medicine in the pre-modern period, have not received much scholarly study. Donald Lach, the University of Chicago historian, who did extensive work in this area, proposed that encounter with Asian knowledge systems had had an impact “upon European institutions, arts, crafts and ideas.”<sup>6</sup> A large body of European works from the 16th to the middle of the 19th century documents how encounters with Indian knowledge systems in the botanical medical/natural history of India stimulated medical and scientific advancement in Europe, and added new dimensions in pictorial arts and literature of the period.

After the arrival of Vasco da Gama in Calicut in 1498, large numbers of European traders, Portuguese, and later Dutch and British, settled in coastal areas of India to join the Asia trade. Soon after their arrival, Europeans came face to face with the reality of living in unfamiliar habitats, especially tropical diseases. “They have many continuall fevers, which are burning agues, and consume men’s bodies with extreame heate, whereby within foure or five days they are (eyther) whole or dead. This sickness is common and

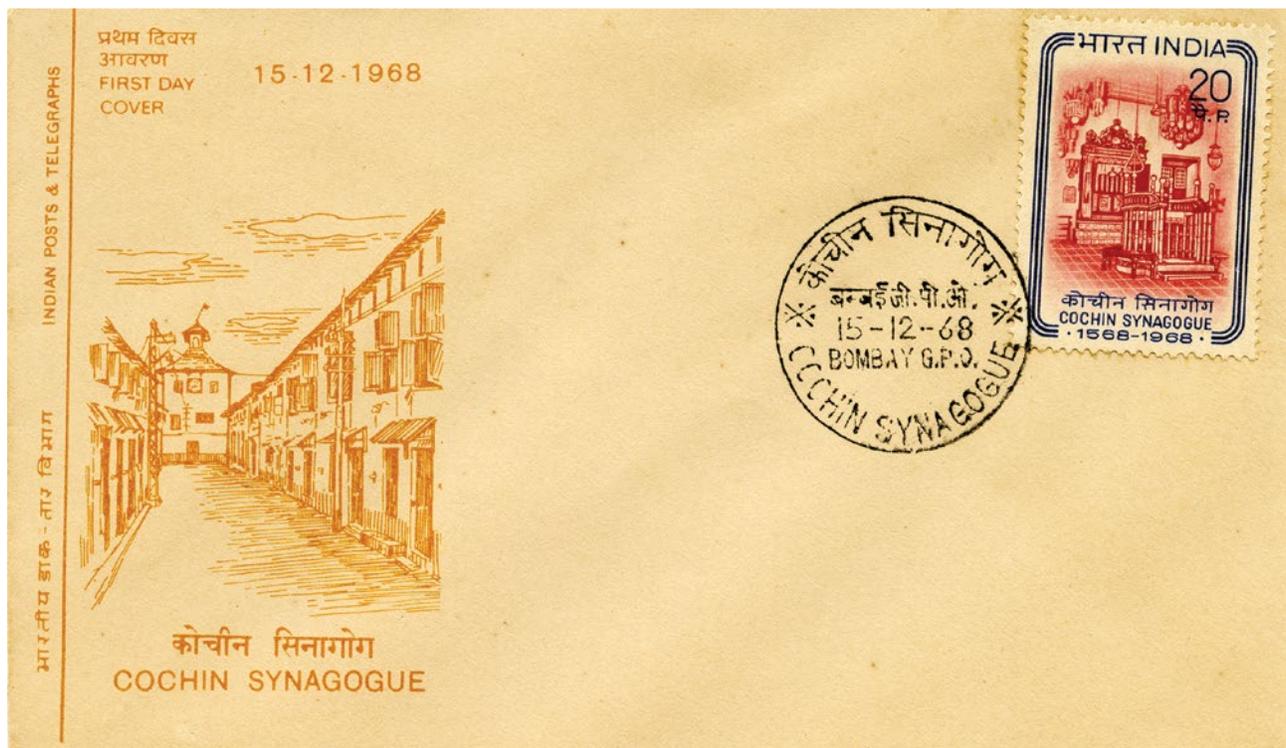


Figure 5-2: First day cover commemorating 400th anniversary of Paradeshi Synagogue, Kochi, Kerala, Indian Postal Service 1968, from a private collection.



Figure 6-2: First day cover with Persian cross, commemorating Syrian Christian Church, Kottayam, Kerala, Indian Postal Service, 1973, from a private collection.



very dangerous, and hath no remedie for the Portingalles, but letting of blood: but the Indians and heathens do cure themselves with herbes....” As a result, Europeans in India sought out local physicians “very well acquainted with medicine”<sup>Z</sup> and compiled their knowledge of regional medicinal plants for use in India and other tropical colonies. The initial motivation to collect and systematize botanical and medical information of India was not intellectual. It was practical, driven by the physical, economic, and political realities of the European enterprise in India. Several major European books on Indian botanical/medical remedies were prepared from the 16th to 19th centuries. These include:

- Garcia da Orta, *Colloquies on the simples and drugs of India*, Goa, 1563, English translation by Clement Markham, Hakluyt Society, London, 1913;
- Cristobel Acosta, *Tractado de las Drogas, y Medicinas de las Indas Orientalis*, Martín de Victoria, Burgos, Spain 1578;
- John H. van Linschoten, *Discourses of voyages into ye East and West Indie*, John Wolfe, London, 1598;
- Clusi Caroli, *Exoticorum Libri Decem*, Plantin, Antwerp, 1605;
- John Gerard, *The Greate Herball, General Historie of Plants*, John Norton, London, 1597; and
- Henrik Adriaan van Rheedee tot Drakenstein, *Hortus Indicus Malabaricus*, (12 volumes) Joannis van Someren and Joannis van Dyck, Amsterdam, 1678-1693.

For the next 250 years physicians, scholars and civil servants in the employ of the Portuguese, Dutch and later the British were commissioned by their governments to document medicinal, agricultural and horticultural knowledge systems of India, for therapeutic and economic benefits in India and in other tropical colonies in Asia and the Americas. The books on Indian medical systems

compiled during the 16th to the 19th centuries, vastly expanded European knowledge of medical botany beyond the confines of Hippocratic medicine, and helped create the modern science of botany. This was one of the most important and lasting legacies from India to Europe. These works also reflect the cultural and social preconceptions that often cloud interpretation of Indian traditions by European authors in the colonial period.

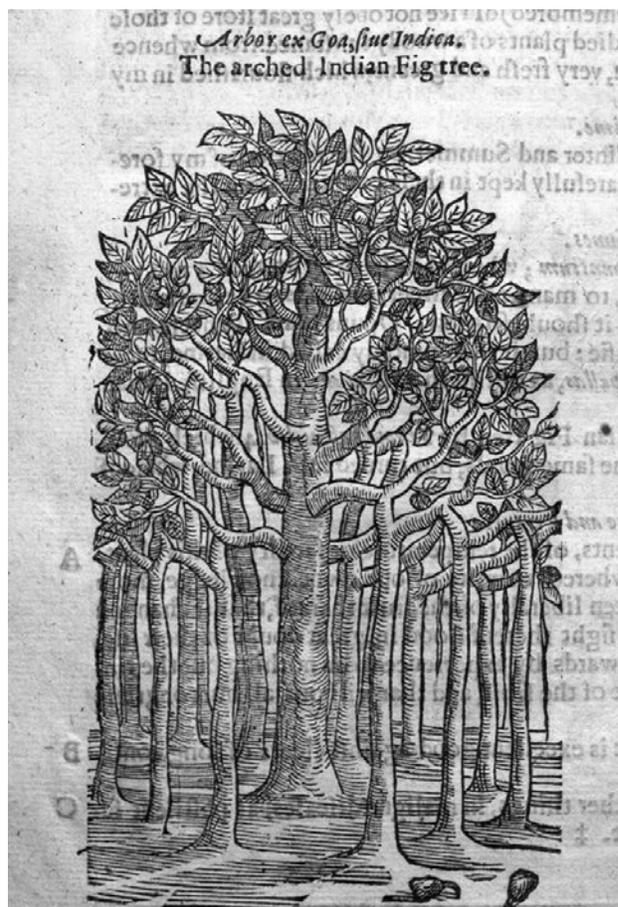
The first of these volumes was published in 1568 by Garcia da Orta, a Spanish naturalist-physician in the service of the Portuguese viceroy of Goa. Orta’s work was the first European work entirely devoted to the medical knowledge traditions of India. By consulting with Hindu and Muslim medical practitioners in India, Orta learned detailed information about indigenous healing practices and the application of local medicinal plants, which he codified and published in the “*Colloquies on the Simples, Drugs and Materia Medica of India*.” The compilation was in Portuguese, for the benefit of his countrymen living in Goa. In his work Orta acknowledged that an important system of botanical medical knowledge unknown to Galen and the Greeks was available in India. The original text, printed at the Rachol Seminary in Goa, India, was the second European book published in Asia. As the first textbook on tropical medicine and Indian *materia medica* written by a European, the work would transform the Western understanding of and appreciation for Asian medicine. Publication of Garcia da Orta’s text excited great interest among Europe’s educated elite and was rapidly translated into major European languages after it was introduced to Europe (Latin translation in 1567, with further editions in 1574, 1579, 1593, 1601, 1605 and 1611, Italian translations in 1579, 1593, 1601, 1605 and 1611, and a French translation in 1602).

The next European work on Indian medicine, “*Treatise on the drugs and medicines of the East Indies, with their effects on the living*,” was by the Portuguese physician Cristobel Acosta, published in Burgos, Spain in 1578. Acosta came to the *Estado da India* from Africa in 1568 and worked as the physician to the Portuguese viceroy and then in the royal hospital of Kochi. During his tenure in



Figure 7-2: Carcapuli (*Garcinia cambogia (indica)*), from Cristobal Acosta, *Tractado de las Drogas y Medicinas de las Indias Orientales*, Martín de Victoria, Burgos, Spain 1578, courtesy of Univ. of California San Francisco Archives and Special Collections.

Figure 8-2 at right: Arched Indian *Ficus* tree (*Ficus bengalensis* Lin.), woodcut, John Gerard, *The Greate Herball, General History of Plants*, John Norton, London, 1597, courtesy of Special Collections, Stanford Univ. Libraries.





India, Acosta was commissioned by the viceroy to record Indian medical therapies as a practical guide for European physicians using Indian medicine herbs in their daily practice. Acosta spent his time with indigenous physicians, each “quite learned in his own way” to “take care of some oversights and mistakes that have been present amongst Greeks, Arabs, and Latins, regarding the knowledge of (Indian) plants and drugs, in part because of lack of curiosity of these Ancients also in part because they were not able to see these plants in the regions where they originated,” and also to further his knowledge of Indian therapeutic substances and what was considered to be “*magico medicinal plants*.” The book included forty-seven full-page woodcut illustrations of India’s many spices and medicines Europeans had been consuming for centuries, such as pepper, cloves, cinnamon, tamarind, ginger, etc., based on drawings from life Acosta made in India. (See [Figure 7-2](#).) It became a practical guide for European druggists and physicians.

*The Greate Herball or Generall Historie of Plan-tes* by John Gerard, apothecary and master of the Company of Barber Surgeons, was published in London in 1597. Gerard assembled images and information on 200 plants of the “Indies” from the vast amount of knowledge of Indian botanical medicines available in Europe by the end of the 16th century. Throughout the book, he gave fascinating accounts of how he collected cuttings and seeds of “All the Varietie of Herbes” “from Forre-ine Places” for his garden in Elizabethan England, leaving for posterity glimpses of the circuitous routes Indian botanicals and knowledge about their uses traveled from Asia to Europe. Remarkably accurate illustrations of the exotic plants, like the *Ficus* tree ([Figure 8-2](#)), inspired literature and popular imagination in Europe during the period. John Milton’s description of the fig tree in the Garden of Eden in his 1667 epic *Paradise Lost* very closely resembles the *Ficus* pictured by Gerard:

Into the thickest wood where soon they chose  
the fig tree, not that kind for fruit renowned,  
but such as, at this day to Indians known, in  
Malabar or Deccan spreads her arms,  
branching so broad and long, that in the

ground the bended twigs root and daughters  
grow into the mother tree....  
(Book 9, verses 1100–1114)<sup>8</sup>

This is just one of numerous examples of references in Europe to the exotic botanicals and fabulous riches of India during the period.

The most extensive study of the medical botanical resources of Asia published in Europe before the 19th century is the celebrated pre-Linnean work (before 1753), *Hortus Indicus Malabaricus*, compiled in India by the Dutch governor of Malabar, Henrik Adrian van Rheede, published in Amsterdam from 1678 to 1693. The volumes record medicinal properties of 742 south Indian plants, with 792 copperplate illustrations. This monumental project was driven by Van Rheede’s firsthand experience with the rich botanical knowledge systems of Malabar, and the need for new medicines by the Dutch colonists in Asia. The work set the standard for many other European works on Asian botany into the 19th century.

Hendrik Adriaan van Rheede left a detailed account of how such extensive information on Malabar medicinal plant knowledge was gathered and recorded by the Dutch. “A broad committee had been brought together from various parts of Malabar” with help from Veera Kerala Varma, Raja of Cochin. The volumes are unique for identifying and honoring the Indian scholars and collectors, as “Experts in plants to whose care it was entrusted to collect for us finally from everywhere the plants with the leaves, flowers and fruits for which they even climbed the highest tops of trees.” A signed hand-written testimonial in Malayalam Kolezhuttu script in volume 1 ([Figure 9-2](#)) identifies Itty Achudem, a Malabar Ezhava folk physician from a traditional family of physicians, as a primary source for the twelve volumes. Achudem attests that the information he provided was culled from the family’s hereditary palm leaf manuscripts (see e.g., [Figure 10-2](#)) of medicinal plant uses of Malabar and his own practice. Three classical Ayurveda physicians (Ranga Bhat, Appu Bhat, and Vinayaka Pandito) and fifteen other unidentified Malabar sources were also consulted for the content. Dutch and

Figure 9-2: Handwritten testament in Malayalam Kolezhuttu script of the Ezhava folk physician, Itty Achudem, from Henrik Adrian van Rheedee, *Hortus Indicus Malabaricus*, Vol. I, Amsterdam 1678, courtesy of Blatter Herbarium Library, Mumbai, India.

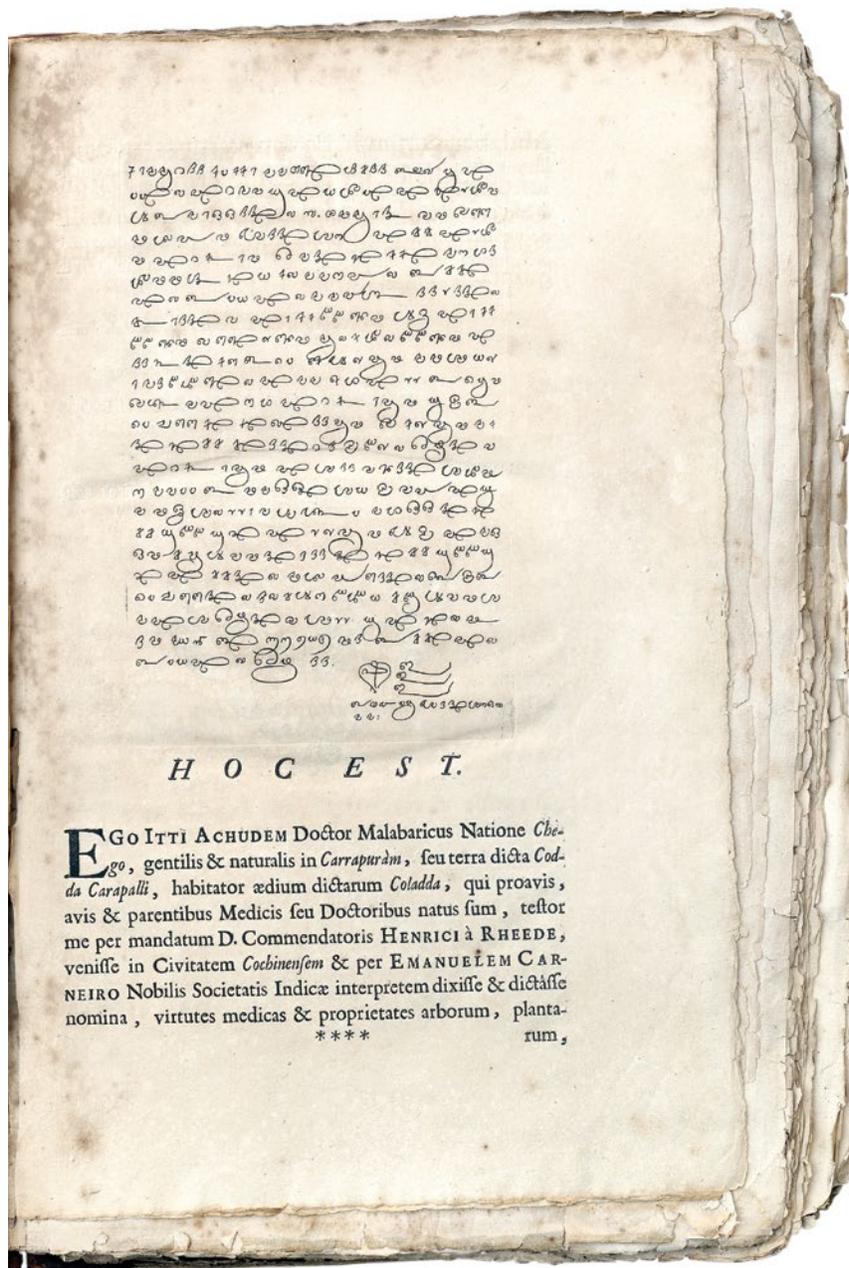


Figure 10-2: Medical palm leaf manuscript, palm leaf with charcoal and ink, Malayalam script, late 19th C. or early 20th C., Kerala, from a private collection.





Figure 11-2: Image of a Kerala man, copperplate engraving, from Henrik Adrian van Rheedee, *Hortus Indicus Malabaricus*, vol. 11, detail figure 4, Amsterdam, 1692, from a private collection.

Indian illustrators and Malayalam to Dutch, and Dutch to Latin translators were also involved in assembling this magnum opus of Asian medicine and botany.

In addition to being a valuable scientific resource, the *Hortus Indicus Malabaricus* volumes are windows into the social, political and linguistic history of South India in the late 17th century. Itty Achudem, a member of a lower caste, is most prominently recognized for his and his family's knowledge of medicine, not only by van Rheedee but also by the Raja who brought him to van Rheedee's attention. This resonates well with the observation of an earlier European traveler in India, Tomé Peres, who said in *Suma Oriental* (1506). "They always make a deep reverence to the masters who teach them, so much so that if the best of the Nayars (warriors) were to meet a Mukkuvan (fishermen) who happened to have taught him something, he would make him a reverence ...."<sup>9</sup> These volumes also provide glimpses of people and landscapes of India from the late 17th century, rarely available from other sources. The drawing of a man in [Figure 11-2](#), included to indicate the size of the plant, probably depicted a real person who worked on the *Hortus Malabaricus*. It is a rare image showing the dress and appearance of a South Indian male from the 17th century.

The *Hortus Indicus Malabaricus* volumes also include detailed, stunning copper plate engravings of the medicinal plants based on illustrations made in India. [Figures 12-2](#) and [13-2](#) are examples from the *Hortus Indicus Malabaricus* of early scientific botanical illustration of Indian botany. Plants are identified with local names in Malayalam, Arabic, Roman, and Nagari scripts, with comprehensive descriptions of their features and medicinal properties. With such details, in 1988, Prof. K.S. Manilal of Calicut University and Dan Nicholson of the Smithsonian Institution were able to confirm the identity of all but one of the plants described in the 12 volumes of *Hortus Indicus Malabaricus*. These volumes became essential reference works for European botanists and physicians using the bewildering array of plants in their daily work in India and South East Asia, into the 19th century.

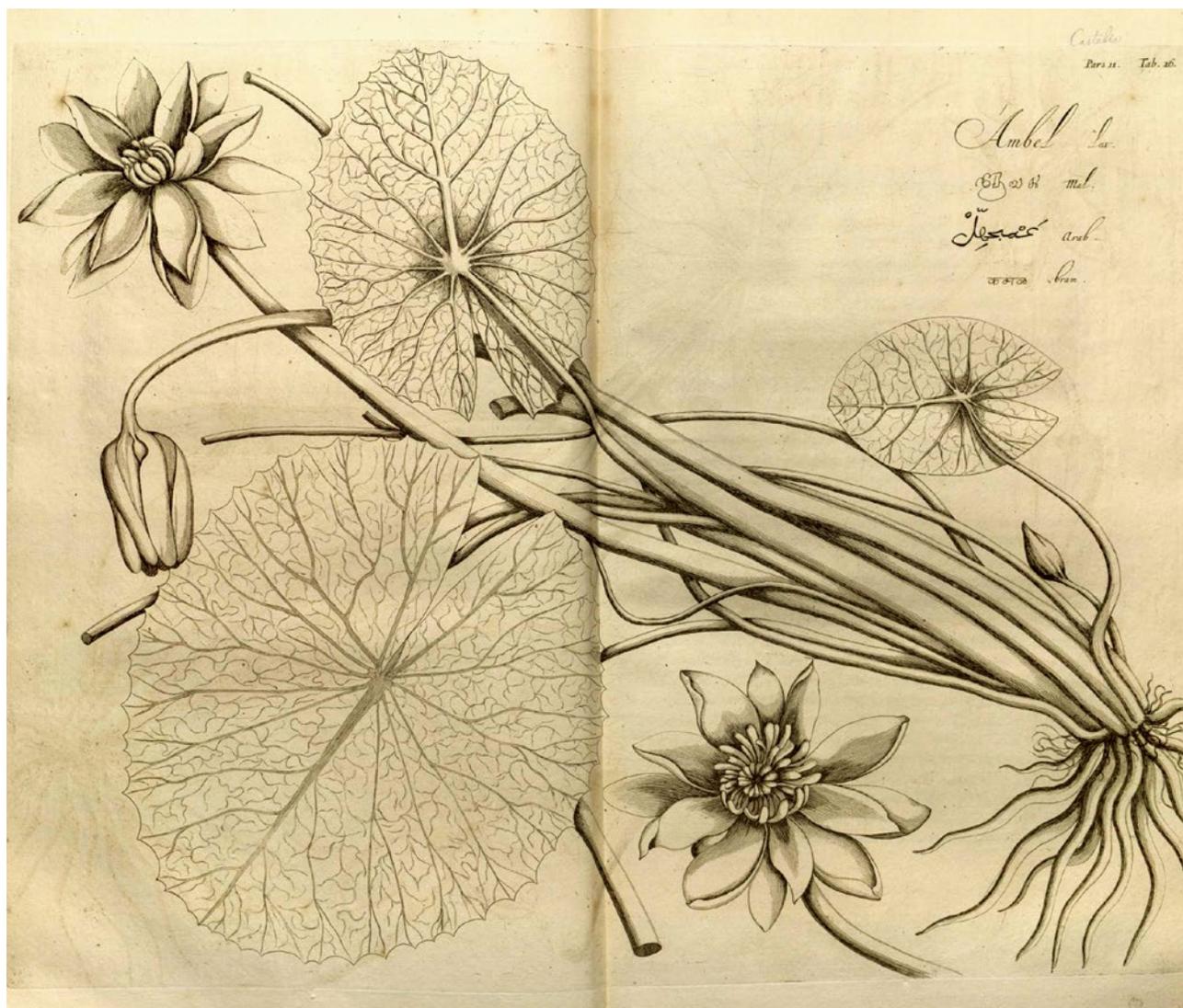


Figure 12-2: Ambel, (*Nymphaea pubescens*), copperplate engraving from Henrik Adrian van Rheede, *Hortus Indicus Malabaricus*, Vol.11. figure 40, Amsterdam 1692, courtesy of Blatter Herbarium Library, Mumbai, India.

In fact, the format of the volumes became the model for other major works on Asian botany.

In 1600 the British East India Company was established with a royal charter from Queen Elizabeth I, for the specific purpose of establishing trade with India. “But since Europe has tasted of this luxury, since the customs of a hundred years has made their spices necessary to the constitutions of all degrees of people, since their silks are pleasing everywhere to the better sort, and since their calicoes are a useful wear at home, and in our own plantations, and for the Spaniards in America, it can never be advisable for England to

quit this trade, and leave it to any other nation.”<sup>10</sup> By the middle of the 17th century several British trading centers were established in coastal areas of India. Documenting the plant wealth of India became an immediate priority for the East India Company, and later for the colonial government, initially “not so much for financial savings as in the use of more serviceable drugs” for the benefit of British physicians newly arriving in India. The earliest record was a paper on Indian medicines published in the *Philosophical Transactions of the Royal Society* (London) from reports sent by the British physician Samuel Brown, from Fort St. George, Madras (now Chennai).<sup>11</sup>

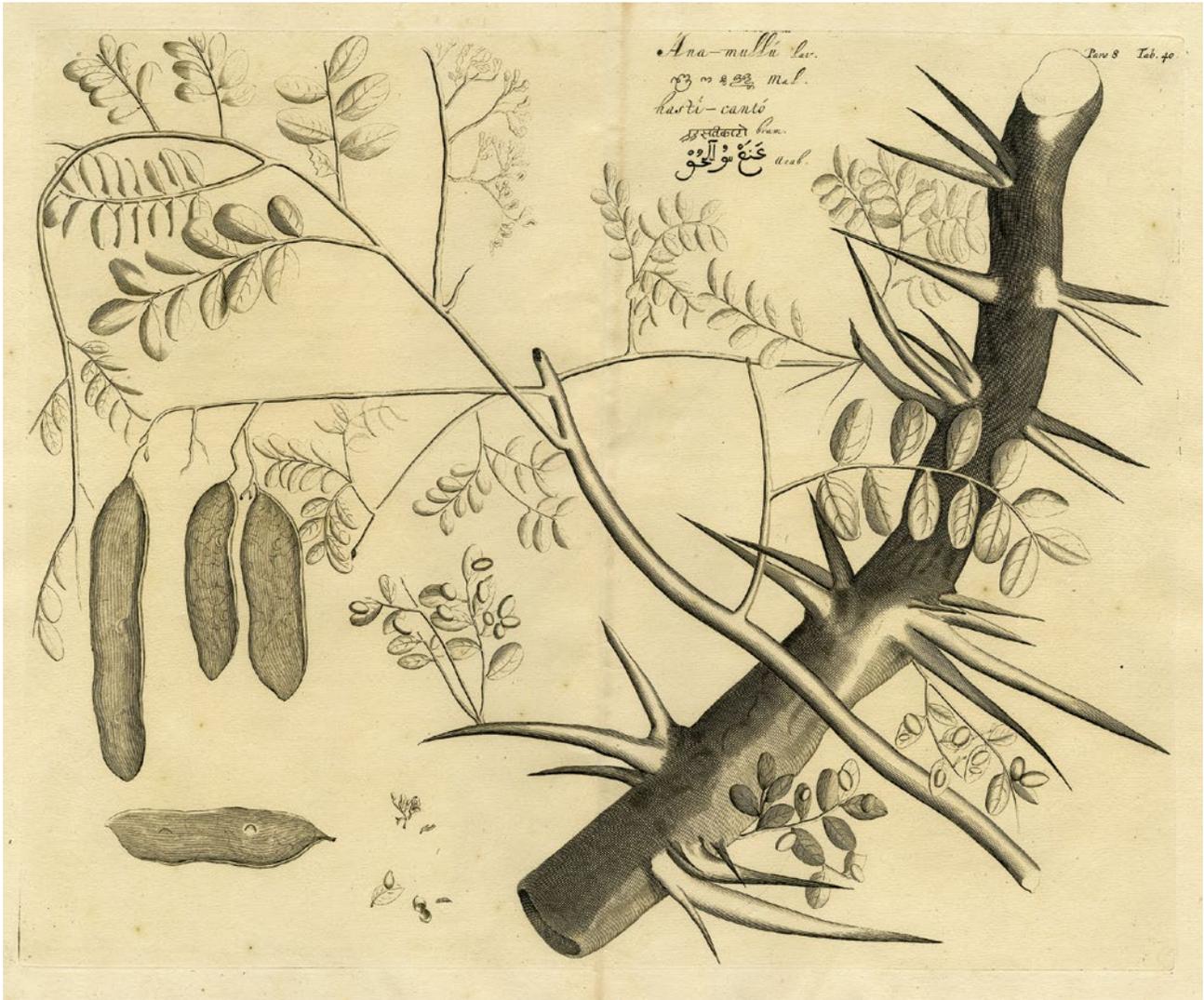


Figure 13-2 Ana-mulu (*Dalbergia horrida*, Dennstedt), copperplate engraving from Henrik Adrian van Rheedee, *Hortus Indicus Malabaricus*, vol. 8, plate 40, Amsterdam, 1688, from a private collection.

Later, a large body of works documenting the plant wealth of India, based on indigenous medical and horticultural traditions, was recorded by the British colonial enterprise, so “people may receive the benefit of it” and “the merchant receive advantage by trading in a new commodity.”<sup>12</sup> A few examples are:

- William Roxburgh, *Plants of the Coast of Coromandel Selected from Drawings and Descriptions Presented to the Hon. Court of Directors of the East India Company*, Vol. I, W. Bulmer and Co., London, 1795;
- J. Forbes Royle, *Illustrations of the Botany and Other Branches of the Natural History of the Himalayan Mountains and of the Flora of Cashmere*, Vol. I, Wm. H. Allen & Co., London, 1839;
- Robert Wight, *Icones Plantarum Indiae Orientalis, or Figures of Indian Plants*, Vol. II, J. B. Pharoch, Madras, 1840-1853;
- J. Forbes Royle, *An Essay on the Antiquity of Hindoo Medicine, Including an Introductory Lecture to the Course of Materia Medica and*

*Therapeutics Delivered at King's College*, Wm H. Allen & Co. and J. Churchill, London, 1887;

- William Dymock, C.J. H. Warden, and David Hooper, *A History of the Principal Drugs of Vegetable Origin Met With in British India*, Vol. I of *Pharmacographia India*, Kegan Paul, Trench, Trübner & Co., London, 1890;
- George Walt, *The Commercial Products of India, Being an Abridgement of the Dictionary of the Economic Products of India*, John Murray, London, 1908; and
- Uday Chand Dutt and George King, *The Materia Medica of the Hindus, with a Glossary of Indian Plants*, Calcutta, 1922.

However, the Indian sources of knowledge recorded in these works, Indian texts, scholars, and practitioners, were not acknowledged in British documents. Nevertheless, these works bear witness to the extent of indigenous Indian knowledge traditions and natural resources of India that were vital for the early colonial enterprise and provide fascinating glimpses into this little-known chapter of the history of East-West interactions.

### Accurate botanical illustrations on Indian botany and medicines became essential tools for European collectors

As described above, accurate identification of the plants was essential for European botanists studying Indian medicinal and agricultural plant specimens. The dried plant specimens with descriptions sent to collections and libraries in Europe from British Botanical Gardens established in various parts of India were often inadequate. Detailed, accurate illustrations made from fresh specimens were necessary to identify unfamiliar plants. In India, masters taught students *guru shishaya paramaryam* (direct learning from masters to students) how to identify plants. Palm leaf manuscripts in family archives and collections

recorded formulae and compositions, but never had illustrations.

Plants are considered sacred and often associated with divine being, so romanticized images of vegetation were represented in Indian miniatures, friezes and sculptures. Indian artists trained in regional artistic traditions presented idealized or standardized images of nature. Scientific illustration with detailed recording of specimens was not an indigenous tradition. However, Indian artists quickly adapted their artistic skills to the demands of the new field of scientific botanical illustration and contributed regional names and other details to the documentation process. Many artists worked in British regional botanical gardens and with individual patrons, and a large body of their works can be found in British documents from the period in collections in England and Scotland. Only a few of the Indian artists who worked for European patrons are identified by name, among them are Vishnuprasad (Figure 14-2) and Gorachaud (Figure 15-2) in the employ of the Calcutta Botanical Garden, and Rungiah, who did illustrations for Robert Wight's *Plantarum Indiae Orientalis*<sup>13</sup> in the 19th century. Their sensitive, detailed illustrations are masterpieces of scientific botanical illustration. However, nothing is known about their background or training.

Illustrations of foreign peoples and their ways of life and exotic flora and fauna were also part of recording natural history and illustrated the expanded European vision of the world. These images also served political power, exemplifying the global reach of European nations. An enduring example is the image of a South Indian elephant attributed to the Renaissance master Raphael (1514–1516). (Figure 16-2) This Indian elephant from Kochi and his Indian mahout were gifts to the Medici pope, Leo X, from King Manuel of Portugal in the first part of the 16th century. The gift was meant to draw attention to Portugal's "conquest" of the fabled land of the *Indies*, and to seek the pope's support to grant Portugal exclusive exploration rights to Asia. The elephant Hanno (a corruption of the Malayalam word *aana* for elephant) became a particular favorite of



Figure 14-2 Illustration by Indian artist Vishnuprasad, in Nathaniel Wallich, *Plantae Asiaticae Rariores*, 1829–1832, Treuttel and Würtz, London, 1829–1832, courtesy of Peter Raven Library, Missouri Botanical Garden.



Figure 15-2 Illustration by Indian artist Gorachaud, in Nathaniel Wallich, *Plantae Asiaticae Rariores*, Treuttel and Würtz, London, 1829–1832, courtesy of Peter Raven Library, Missouri Botanical Garden.

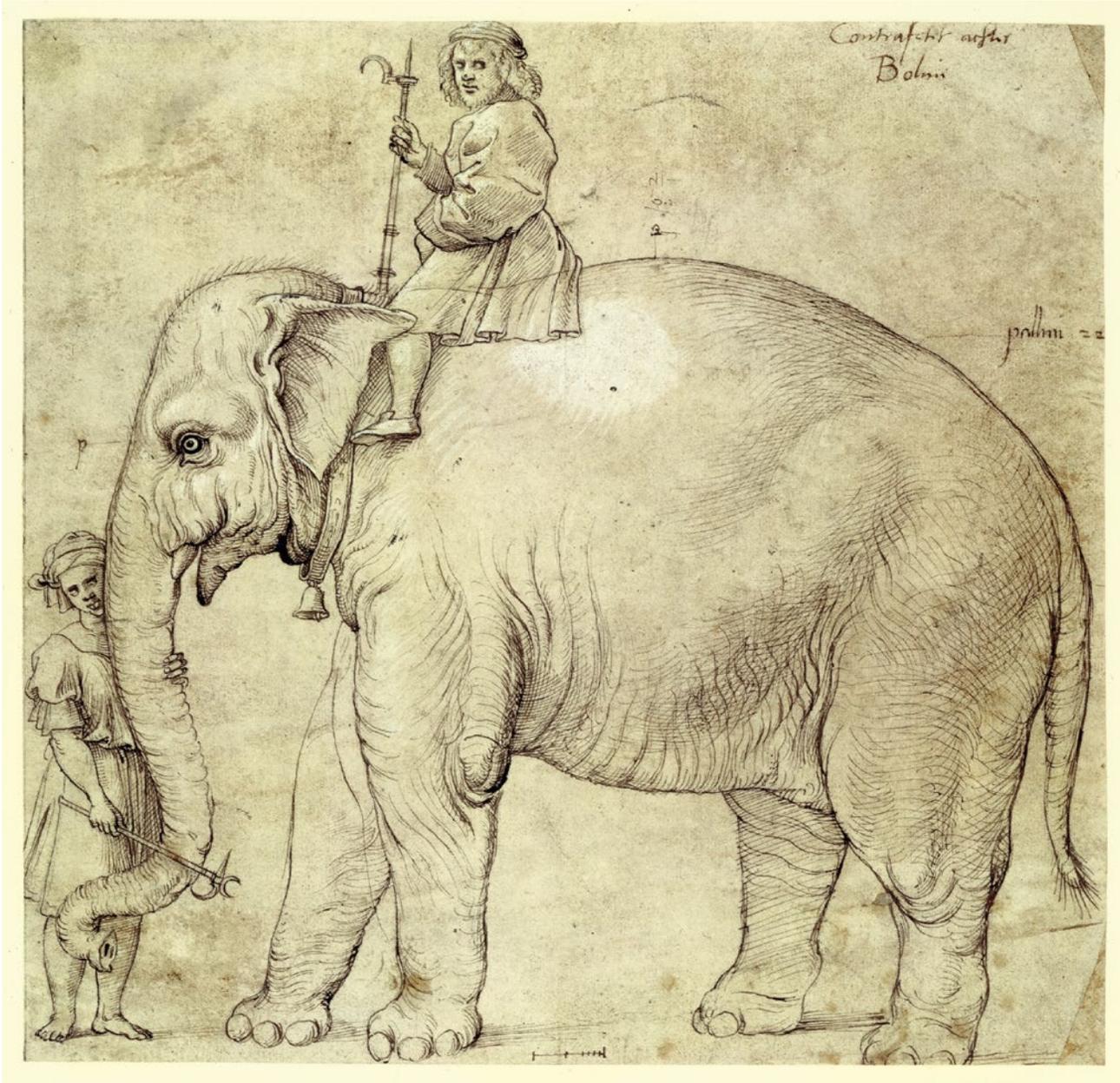


Figure 16-2 Indian elephant *Hanno*, pen and ink drawing, attributed to Raphael, 1514-1516, courtesy of Kupferstichkabinett, Staatliche Museen zu Berlin, photo by Jorg P. Ander.



Leo X and this portrait remains a testament to European fascination with the natural history of Asia. Similarly, botanical gardens across Europe, such as the Jardin du Roi in Paris, the Botanical Garden in Amsterdam, and later the Royal Botanical Garden at Kew near London, with its vast array of exotic tropical plants were as much affirmations of the vast territories of the globe under European colonial rule in the 16–19th centuries as they were institutions for the study of botany of medicinal and exotic plants.

The world was forever changed by the centuries of East-West trade encounters, initiated around black pepper, cinnamon, and cardamom, natural products renowned for their curative and culinary properties. These encounters transferred more than commodities. They also passed on the philosophical ideas and knowledge systems of India in botany and medicine, “seeds of culture,” and contributed to European culture and the study of natural sciences and medicine.

**ANNAMMA SPUDICH** did her Ph.D and post-doctoral work in Cell and Molecular Biology at Stanford University and worked as an experimental scientist at Stanford for 25 years. Since early 2000, she has used her training and experience to critically examine how Indian botanical medical knowledge systems influenced trade and knowledge exchange in the premodern world and the effects on history, science and the arts. She has curated exhibitions on the subject at the Cantor Center for Visual Arts, Stanford University (2003) and at the National Center for Biological Sciences, Bangalore (2008 and 2017). The 2008 exhibition she curated is currently at the Regional Museum of Natural History, Mysore, India. She is a visiting scholar at the National Center for Biological Sciences/Tata Institute for Fundamental Research, Bangalore, India. She lives in Palo Alto, California.

## Notes

1. *Travel and Trade in the Indian Ocean, by a Merchant of the 1st Century*, translated from Greek and annotated by Wilfred H. Schoff, Longman Green, London, 1912, *Natural History* by Pliny the Elder, Book VI, 26, <http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.02.0137%3Abook%3D6%3Achapter%3D26>.
2. Casson, L., “*P. Vindob G 40822 and Shipping of Goods from India*,” *Bulletin of the American Society of Papyrologists*, 23:73-79, 1986.
3. *Rg Veda*, quoted in Heinrich Zimmer, *Hindu Medicine*, Johns Hopkins University Press, Baltimore, 1948.
4. A. Hoernle, “The Bower Manuscript, 4th-6th C. CE,” Part II, Ninth Leaf, obverse, verses 258-260, edited with English translation and notes, in *Archeological Survey of India*, Vol. 22, Calcutta, 1893-1913.
5. S.D. Goitein, and Mordechai A. Friedman, *India Traders of the Middle Ages: Documents from the Cairo Geniza*, “*India Book*” Brill, Leiden, 2008.
6. Donald F. Lach, *Asia in the Making of Europe* Vol. 1. Book.1, xv, U. Chicago Press, Chicago, 1965.
7. John Huighen van Linschoten, *His discourses of voyages into ye East and West Indies*, John Wolfe, London, 1598.
8. John Milton, *Paradise Lost*, Harvard Classics, Cambridge, Mass., 1909-1914.
9. Tomé Pires, *Suma Oriental*, 1506, Translated from Portugese by Armando Cortesão, Hakluyt Society, London, 1944.
10. Charles D’Avenan, 1697 letter *To the Most Honourable John Lord Marquis of Normandy*, The Avalon Project, Yale University.
11. “An account of some Indian plants with their names, descriptions, and virtues communicated in a letter from Mr. James Petiver, apothecary and fellow of the Royal Society to Mr. Samuel Brown, surgeon at Fort St. George,” *Transactions of the Royal Society*, 20:313-335, 1698.
12. S. Anderson, “Pharmacy and Empire: The British Pharmacopoeia as an Instrument of Imperialism 1864 to 1932,” *Pharmaceutical History* 52:112-121, 2010
13. Robert Wight, *Icones Plantarum Indiae Orientalis or Figures of Indian Plants*, J. B. Pharoach, Madras, 1840-1853.



# Society for Asian Art

The Society for Asian Art was founded in 1958 to encourage the study and appreciation of the arts of Asia. Its first objective was to help in the acquisition of The Avery Brundage Collection.

For more about the Society for Asian Art, its mission, its board of directors and advisors, please visit

[www.societyforasianart.org/about-us](http://www.societyforasianart.org/about-us)

# Become a Society Member

Join the Society for Asian Art and enjoy the many—benefits and privileges of membership. Learn more at

[www.societyforasianart.org/membership](http://www.societyforasianart.org/membership).

To join the Society online visit

[www.societyforasianart.org/membership/join-renew](http://www.societyforasianart.org/membership/join-renew).

# Lotus Leaves

Lotus Leaves is a scholarly publication focusing on issues judged to be of particular interest to Society for Asian Art members.

Address all correspondence to the Society for Asian Art, Asian Art Museum, 200 Larkin Street, San Francisco, CA 94102, or [saa@asianart.org](mailto:saa@asianart.org)

Alice Trinkl, Editor

Margaret Edwards, Associate Editor

Design: Suzanne Anderson-Carey

©2017 Society for Asian Art, All rights reserved.