

The Early Modern Globalization of Indian Medicine: Portuguese Dissemination of Drugs and Healing Techniques from South Asia on Four Continents, 1670-1830¹

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Abstract: This essay discusses the methods and effect of the dissemination of South Asian medicinal substances and healing techniques throughout the Portuguese maritime colonial network. In the seventeenth and eighteenth centuries, Indian medicine played a significant role in global Portuguese colonial health care institutions. Analysis covers official reports about Indian medicines produced by Portuguese colonial medical authorities, and consignments of indigenous medicines shipped from Goa, the administrative capital of the *Estado da Índia*, to Macau, Timor, Mozambique, Brazil, and Continental Portugal. South Asian medicinal preparations and healing techniques spread to Lusophone enclaves in the Atlantic and Pacific Oceans, far from their indigenous roots, and were fully incorporated into the Portuguese lexicon of tropical medicine.

This work will discuss the methods and effect of the dissemination throughout the Portuguese maritime colonial network of medicinal substances and healing techniques originating in India. Portuguese colonial agents (missionaries, colonial officials, marine commanders, and state-licensed medical practitioners) accomplished this dissemination in the sixteenth, seventeenth, and eighteenth centuries, when Indian medicine played a significant role in the state-sponsored health care institutions of the Portuguese colonies. Many of the South Asian remedies and treatments that the Portuguese assimilated for use in their own medical lexicon are recognizable as techniques common in the ayurvedic tradition—methods

that the Portuguese first encountered on the Malabar Coast at the end of the fifteenth century.

This article will focus particular analysis on official reports about Indian medicines produced by colonial medical authorities in India at the request of the Portuguese Overseas Council in Lisbon, the royal body responsible for colonial administration. Such reports were an important conduit of information, not only to crown officials in the metropole but also to medical officials in other parts of the empire. These reports provide a telling gauge of the state of contemporary knowledge about certain medicinal substances from south Asia and about which techniques were thought to be efficacious. Further attention will be devoted to consignments of medicines shipped from Goa, the administrative capital of the *Estado da Índia*, to such destinations as Macau, Timor, Mozambique, Brazil, and Continental Portugal. Colonial officials generally sent such consignments to stock official colonial medical facilities, or as items of trade in the existing global market for medicinal substances. I intend to demonstrate that Indian medicinal preparations and healing techniques became widely known in Portuguese-controlled enclaves in the Atlantic and Pacific Oceans, far from their indigenous roots, and were fully incorporated into the lexicon of tropical medicine in the Lusophone colonies.

Early Portuguese Transfer of Information about Indian Drugs to Europe

Descriptive works about Asian medicinal plants by Garcia da Orta (1563) and Cristovão da Costa (1578) introduced Europeans to many of the medicinal plants and drugs commonly employed in Eastern healing. Though some Asian medicines had been known in Western Europe since ancient times, Garcia da Orta's work—a detailed, critical assessment of the effects of drugs found in the East Indies—conveyed a new understanding of their multiple uses and characteristics. Cristovão da Costa emulated the template of da Orta's text but improved the detail and accuracy of parts of the earlier work.

Garcia da Orta was a Jew of Spanish descent who trained in medicine at Salamanca before moving to Portugal to escape the Inquisition. He practiced medicine in Lisbon before entering the service of the Portuguese crown and sailing to Goa in 1534, where he remained for the rest of his life. Da Orta served as the personal physician to several Viceroys and Governors of Portuguese India, as well as to the Sultan of Ahmadnagar, the territory bordering Gujarat to the south. Known for his insatiable curiosity regarding medicinal

plants, he enjoyed the friendship and professional collaboration of Hindus, Muslims, and Christians alike (Russell-Wood 83-84).

The culmination of da Orta's labors, a lengthy work entitled, in Portuguese, *Colóquios dos simples e drogas e cousas mediçianais da India* [*Colloquies on the Simples and Drugs and Medicinal Things of India*], saw rapid and wide distribution in Europe. Published in Goa in 1563 (only the second European book to be printed in India), this treatise remained the definitive work on Asian medicine in the Portuguese maritime empire until the nineteenth century. The full text was published only in Portuguese, which limited its circulation. However, much of the original material was translated into Latin by the prominent botanist Charles Lécluse (Clusius), who subsequently reprinted da Orta's text without permission in Antwerp in 1567. Incomplete editions in English, French, and Italian followed, pirated from Lécluse's abridged Latin text (Russell-Wood 149). Lécluse also appropriated and reprinted work from the Portuguese physician and botanist Cristovão da Costa, whose *Tractado de las drogas y medicinas de las Indias Orientales*, published in 1578, followed da Orta's work closely, but expanded upon and corrected some of da Orta's information (da Costa had traveled more broadly throughout the *Estado da India* than da Orta, so he was able to report on the efficacy and use of some medicinal plants from firsthand experience) (Russell-Wood 149-150). Thus, through translations and appropriation Garcia da Orta's original treatise on Indian medicine achieved a very broad circulation in Europe.

Colloquies on the Simples and Drugs of India contains thorough notes and woodcut illustrations of fifty-nine different drugs and medicinal preparations, all of them either native to India or observed in use there during the author's perambulations. "India," of course, is broadly defined; in da Orta's conception, the geographical area of the Indies comprised much of Asia and Indonesia. Moreover, it is important to understand that da Orta's work is, in its presentation of information about South Asian medical techniques and remedies, essentially an Indian text, despite having been collected and recorded by a western physician (Grove 77-80). That is, the book conveys a distinctly indigenous outlook toward healing, even if viewed through the filter of da Orta's interpretation.

To what extent the sources of da Orta's work were the distinct product of ayurvedic medical training is a difficult matter to assess with certainty, but his text provides some clues. The *Colloquies on the Simples and Drugs of India* emerged from da Orta's personal friendship and professional interaction with

a range of medical practitioners in western India, from Malayali-speaking Brahmin doctors in the port cities of Kerala, to Gujarati and Deccan physicians he encountered in Bombay, to lower-caste Hindu healers at Goa and Ceylon (Da Orta ix).

Da Orta credited Malayali medical practitioners and their ayurvedic-influenced medicine with being of particular importance to his own training. He tells his companion Ruano that, although medical information from Keralite physicians was difficult to obtain, "I will take you to see patients cured by Malayalims and Canarese, that you may know it [their treatments] more thoroughly" (qtd. in Grove 82). Throughout his text, da Orta maintained usage of many Malayali words for medicinal substances because "this was the first land [I] knew" (Da Orta 97). However, his medicinal specimens at Goa were collected and catalogued by a local Konkani-speaking "slave girl" named Antónia—circumstances that inevitably shaped da Orta's perception of the contours of indigenous medical culture in the region where he made his home (Da Orta xiii).

Another early effort to expand knowledge within the Portuguese empire of the medicinal uses of Indian plants is evident in a report compiled in the eastern colonies in 1596 and remanded to Lisbon for the edification of the *Conselho Ultramarino*, the governing body of the Portuguese overseas colonies. This compendium of medical recipes and the oriental herbal, animal, or mineral substances from which they were made is a lengthy, meticulous account of contemporary healing techniques in India, written by royal order in Goa during the administration of Matias de Albuquerque, Viceroy of the *Estado da Índia* at the end of the sixteenth century.² It was intended specifically to facilitate the dissemination of Indian healing methods to other parts of the Portuguese maritime empire, where they could be applied to safeguard the precarious health of colonial troops and functionaries in the tropics.

However, this document was destined for broader distribution within the Portuguese sphere and beyond. A copy of the compendium, made by a Jesuit missionary priest a century after its initial composition, is now found in the Bibliothèque nationale de France. Padre Francisco Rogemunt, awaiting his departure in Lisbon for Macau, apparently copied the richly informative document for his personal use in the mission fields of China, where he was posted in the late seventeenth and early eighteenth centuries.³ Most of the text is composed of remedies and treatments for specific, named conditions, symptoms, or maladies. Thus, the compendium has a diagnostic purpose for

tropical illnesses, as well as a didactic objective regarding medical plants, minerals, and herbs. The latter half of Padre Rogemunt's 155-folio bound manuscript includes notes, apparently added in the mission fields, about supplementary remedies and entries of medical information to augment his original text, including Chinese and French language passages.⁴ The tome shows signs of frequent use, having been consulted to heal the sick in the Far East before being returned to the French national library in the late nineteenth century. So, in this remarkable text we see a late seventeenth-century French Jesuit copying a late sixteenth-century Portuguese text about Indian medicine for use in China during the early eighteenth century, moving medical information about South Asia to East Asia and back to France.

Clearly, in 1596 there was an additional commercial motivation for creating this comprehensive list of eastern medicinal recipes. The Portuguese hoped to market such remedies in their own metropole and colonial regions in Africa and South America, but also to rival colonial powers in Europe. At that time, they held a virtual monopoly both on the sources for medically efficacious Indian plants and much of the knowledge about how to apply them. The Portuguese thus positioned themselves consciously to operate a global conduit for eastern medical information, expressed in European medical terms and in a European language.

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It is worth noting that the Portuguese also played a role in distributing Malabar Coast remedies to the Muslim Moghul court in the northern interior of India. Whenever the Portuguese sent an envoy to negotiate with the Raja in Agra, custom dictated that gifts be exchanged. Among the perfumed herbs, rich fabrics, silver inlaid blades, and potent distilled beverages (*aguardente* and cashew *feni*) sent as tribute, the Portuguese commonly sent typical Hindu-influenced medicines, such as *balsamo apopletrico* for headaches and sandalwood paste for fevers. One typical example of this practice can be found in a record of the Portuguese embassy to the court of Raja "Sauac Bacinga" (rendered phonetically in Portuguese) in December 1737; the itemized presents filled dozens of jars, bottles, and ornate chests.⁵

The courts of the Indian rulers were also good vantage points from which to observe the general movement of commercial goods within the maritime world of the Far East. Up-to-date information about that system

of trade was of course a commodity to be valued of itself, and the Portuguese rulers in Goa were eager to gather, disseminate, and exploit intelligence on this matter for the benefit of their own commercial interests as well as those of the merchants of the *Estado da Índia*. In about 1770, a Capuchin priest named Friar Leandro de Madre de Deus was attached to the court at Pune as a missionary, but he was also a confidant and correspondent of the Governor General of Portuguese India, Dom João José de Melo. Friar Leandro's official instructions charged him with helping a Portuguese physician who had been dispatched from Goa to attempt to heal the ailing potentate at Pune, Madó Rao, but the Capuchin priest was also gathering information about the hostilities developing at that time between the Portuguese and the rulers of Maharashtra.⁶ Two years later, Friar Leandro produced a comprehensive description of the trade routes, commodities exchanged, and prices obtained for goods throughout the principle ports of the Far East, from the Indian Ocean to Macau, and sent it to the ruling council of the *Estado da Índia* in Goa. Friar Leandro's *Notícias Particular do Comércio da Índia* is a comprehensive overview of this complex trade network, one of the first guides of its kind, showing how goods purchased in one location could be sold for a profit in another as merchant ships discharged and loaded goods when sailing from port to port.⁷

Leandro included medicinal plants, drugs, and spices used in curative preparations in his description of trade goods sent out from India, of course; the merchants of the Portuguese colonies sold these Malabar Coast remedies in various ports in China, Annam (Viet Nam), and the East Indies. Most are classical Indian medicinal substances that had long-accepted uses in ayurvedic healing as well as in the local cultures along the southwest coast of India.⁸ *Notícias Particular do Comércio da Índia* describes Indian sandalwood, stag horn, and clove oil from Ceylon bringing high profits in Macau when sold as remedies.⁹ The gum resin myrrh, purchased in Calicut or Cochin, could be sold for substantial gains as a medicinal ingredient in Malacca or Macau.¹⁰ The balsam or salve made from benzoin, purchased in eastern India, had a profitable market "in every part of the world," according to Leandro's report.¹¹ Tamarind and pepper, also sold throughout Asia as medicinal substances, left India in the holds of Portuguese merchant vessels. All of these medicinal commodities, of course, have their place in the ayurvedic tradition; Friar Leandro's text implicitly acknowledges that these medicines were to be applied essentially as ayurvedic practice recommended.

Notícias Particular do Comércio da Índia, then, provides a contemporary late eighteenth-century description of Portuguese distribution methods of Indian healing substances, but it is itself also a conduit of information about those drugs. The report was copied and disseminated among merchants and officials of the *Estado da Índia*, and most likely used to inform the *Conselho Ultramarino* in Lisbon, as well.

Control of the Pharmaceutical Medicine Trade within the Portuguese Maritime Empire by Missionary Organizations and the Availability of Indian Drugs in Continental Portuguese Pharmacies (c. 1650-1760)

To examine how Asian medicinal substances like opium, rhubarb, aloe, asa-fetida, and benzoin were distributed in continental Portugal and to other parts of the empire, let us turn our attention briefly to the dynamics and structure of the home market for Asian pharmaceuticals.

In continental Portugal at the end of the seventeenth century, the great majority of pharmacies were in the hands of that nation's numerous monasteries and operated by the often highly trained brothers of these institutions, be they Jesuit, Dominican, Franciscan, Augustinian, Benedictine, or Carmelite (Dias, "A Botica" 19). Only in the larger cities, like Lisbon, Oporto, Coimbra, or Évora, were secular pharmacies to be found. These, however, were generally modest concerns; secular pharmacists complained frequently to crown authorities that they could not compete with the monopolistic practices of the great monastic orders, whose purchasing power, established trade and procurement networks throughout the overseas empire and superior professional reputations combined to impoverish lay pharmacies.¹²

Hence, a large proportion—indeed a virtual monopoly—of the very lucrative trade in medicinal substances in continental Portugal during the early modern period was controlled by monastic institutions and the *colégios* associated with them. In the case of medicines arriving from the *Estado da Índia*, the Jesuit druggists or apothecaries (*boticários*) in particular enjoyed a clear advantage, as they could rely on their co-religionist associates in Goa and Macau to procure and ship consignments of precious medicinal plants or prepared medications using Asian ingredients, such as the prized opium-and-mercury-containing *pedras cordiais*, especially for the stockrooms of their brethren in Portugal (Dias, "A Botica" 19-20). Opium, of course, was one of the drugs they bought in Malabar, Gujarat, and the Persian Gulf for shipment to the Atlantic colonies and the Imperial capital. All types of remedies, from cheap

tamarind paste to expensive bezoar stones, were common substances in which the Jesuit brothers trafficked on a truly global scale, sending consignments of drugs from India and China to Africa, South America, and Europe. Moreover, the missionary orders relied on this trade for revenue that supported their other endeavors. The availability of Asian medicines in continental Portugal was largely in their hands for over one hundred fifty years.

In Lisbon, two of the city's most important pharmacies operated under Jesuit control. These were attached to the *Casa Professa de São Roque* and the *Colégio de Santo Antão*. Together, these two pharmacies functioned as the hub of a network of Jesuit *boticas* that extended throughout the Portuguese sea-borne empire. Without exaggeration, the Jesuits and, to a lesser extent, the Dominicans, helped to drive, direct, and sustain the global market in many of the exotic medicinal plants or animal-based drugs arriving in Europe from Asia, Africa, and South America, partly because of their purchasing power in this profitable trade, but more importantly because of their influence and pharmacological expertise at those points in the empire where these substances could be procured (Dias, "A Botica" 18, 21).

This arrangement existed deep into the reign of Dom José (1750-1777). After the suppression of the Jesuits by order of the Prime Minister Marquês de Pombal in 1759, the goods of the Jesuit colleges and their pharmacies situated across Portugal and the colonies became confiscated spoils of crown policy. On the continent, the University of Coimbra absorbed much of the Jesuits' holdings into the Faculty of Medicine. Most of the substantial nation-wide stock of Jesuit medicines, including their supply of opium, was sold at public auction (Dias, "A Botica" 18).

Another Lisbon monastic pharmacy of great importance and repute was located in the courtyard of the monastery of the Augustinian Order of *Santa Cruz do Coimbra*, better known to *Lisboetas* (residents of Lisbon) as the venerable *Mosteiro de São Vicente de Fora*. The monks of this order naturally were involved in the pharmacist's trade as producers and vendors of medicines: one of their preparations was a mercury-based "panacea" in pill form, which the monks produced on the premises and shipped in great quantities along with a printed sheet of dosage instructions to destinations all over Portugal and the colonies—its particular use was to combat syphilis (Coelho 845-846). They were best known, however, for their production of professional texts on matters of pharmacology and chemistry, which the monks wrote and published on an in-house press. During the first decade of the eighteenth century,

one of their number, Dom Caetano de Santo António, produced what would quickly become the most widely known, influential, and authoritative Portuguese “pharmacopoeia”—a manual of remedies and medicines for physicians, surgeons, and barbers (Basso 14; Neto 10-11). Dom Caetano’s text of 1704 was the first continental pharmacopoeia written in vernacular Portuguese. A later edition of this publication was the first medical handbook produced in Portugal to describe the therapeutic application of opium and other medicinal substances from India.¹³

Opium, incidentally, was not a controlled substance in the modern sense within the Portuguese sphere at any time prior to the early twentieth century. Apothecaries were just one legal source for the drug. Pharmacists sold opium paste and balls over-the-counter to the general public in Portugal and in towns in the colonies throughout the eighteenth century. As the patent medicine trade developed in the nineteenth century, prepared tinctures, syrups, and pills containing opium continued to be available with little official control. The relatively high price of opium, however, is the probable reason that kept it from being widely used or abused by the general population in continental Portugal.

Two extant pharmacy stock lists from the middle of the eighteenth century give us an idea of the relative value of Indian drugs in the Lisbon market. We are fortunate to have, for example, a record of the inventory of the pharmacy, or *botica*, of the *Colégio de Santo Antão*, which the Italian-born druggist Lorenzo Scanniglia oversaw and supplied from approximately 1727, when he received his license to practice in Portugal, to just before his death in 1759. This inventory was taken in 1749-1750. Because the *botica* of the *Colégio de Santo Antão* was one of the most important pharmacies in Lisbon and one of only two Jesuit pharmacies in the city, this inventory may be taken to be a fair indication of the relative volume, price, and importance of drugs coming into Portugal from the Far East at this time (Dias, “Inovação Técnica” 696-702). The other stock list, compiled in 1758, is from the famous *botica* at the Monastery of São Vicente da Fora. This important drug warehouse kept an assortment of traditional Indian medicinal substances in stock at any given time in the mid-eighteenth century.¹⁴

Medicines of note on these lists of vegetable and animal drugs from Asia include rhubarb, which was very expensive compared to other plant items. Rhubarb’s price per pound in 1749 (3525 *reis*) was third after the prized Indian medicine “flower of Benzoin” (17,000 *reis* per pound) and a rare type of Chinese apple, called *maçis* (4400 *reis* per pound).

Opium, priced at 3120 *reis* per pound, was the fourth most expensive item listed, while the curiously named “beans of Saint Ignatius” also brought a premium price of 2400 *reis* per pound. Beans of Saint Ignatius were an exotic, early prepared medicine: a pill or bolus, most varieties of which were manufactured in Macau and Goa by Jesuit missionary apothecaries for consumption in Europe. These pills often contained opium as an active ingredient, which helps to account for their price. Cinnamon and pepper, also considered medicinal substances by contemporaries, were priced at 1000 *reis* and 540 *reis* per pound respectively at the time of the inventory. Tamarind was one of the two cheapest items, listing at 160 *reis* per pound. Of thirty-eight plant items in the inventory that originated in the *Estado da Índia*, thirty were priced at 1000 *reis* per pound or below, with the average falling between 300 and 700 *reis* per pound (Dias “A Botica” 699). (To give an idea of the value of these sums, Inquisition functionaries, called *familiares*, when performing duties for the Holy Office, received a 500-*reis per diem* at the beginning of the eighteenth century, about twice the daily pay of a journeyman laborer in contemporary Portugal.¹⁵) In any case, most of these substances were well beyond the budget of any but the most extraordinary private citizen or popular healer (*curandeiro* or *saludador*).

Of course, opium trading did exist outside the framework of religious missionary orders, particularly after the suppression of the Jesuits in 1759 and the massive growth of the opium trade between Gujarat and China at the beginning of the nineteenth century. Portuguese army surgeons procured opium for their medicinal requirements; naval ships carried chests of medicines stocked with opium and other Indian medicines for each voyage; and labor overseers or slave drivers in the Atlantic and Indian Ocean spheres bought opium in quantity to give to their hard-suffering workers. In the *Estado da Índia*, it is probable that a government military facility like an army base or naval vessel, as well as private plantations or labor contractors, turned to sources other than the religious orders’ institutional pharmacies for bulk opium purchases. Wholesale merchants or port markets in Gujarat could easily have supplied large consignments of opium at an attractive price, but this commerce is largely undocumented. Fiscal documents in Portuguese India reveal, however, that the colonial government typically expended large sums annually to outfit state vessels with appropriate medicines against tropical disease. A chart of state revenues and expenditures for 1762, for example, records that the apothecary of the Hospital Militar in Goa distributed drugs that year worth 5287 *xerafins* to

the medicine chests of various military ships and vessels of the Portuguese fleet bound for other destinations in the maritime empire.¹⁶ Most of these medicines, of course, originated in India and were of indigenous provenance.

Export of Medicinal Commodities from India to Other Imperial Destinations, and Opium Use in Continental Portuguese Medical Practice

During the seventeenth and eighteenth centuries, some Indian medicinal stocks for Portuguese colonial apothecaries and pharmacies were gathered at Diu or Damão and shipped on to Goa, where the main stores of *drogas* were collected (Burnell 113-114). Often, consignments of drugs were supplied directly by Hindu merchants—wholesalers of medicinal plants—who procured bulk quantities of drugs for Portuguese medical facilities in the Indian colonies. For example, during the suppression of the Jesuit fraternal religious order in Goa in 1760, part of the value of their confiscated goods was awarded to Hindu merchant Suba Camotim Mamay; part of this payment covered consignments of medicinal plants destined for the Jesuits' pharmacy, hospital, and infirmaries.¹⁷ Further evidence of Hindu merchants providing regular deliveries of indigenous medicinal substances to Portuguese-run medical institutions can be found in the financial records of the *Convento do Nossa Senhora de Graça*. In 1798 and 1799, two Hindu pharmacists, Rama Xandra Camotim and Segunam Camotim, received very large cash sums for medicines and services rendered to the *Graça* convent hospital.¹⁸

From Goa, Indian medicinal substances were transshipped and widely distributed; coasting vessels carried consignments of the popular medicines to Portuguese-held ports along the Malabar Coast, as well as to Sri Lanka and destinations in eastern India. The Europe-bound ships of the annual Portuguese India fleet, the *Carreira da Índia*, carried cargos of opium and other Indian drugs to Mozambique, Brazil, and Lisbon. Meanwhile, Indian medicines travelled eastward in Portuguese-licensed vessels to Imperial colonies at Timor and Macau, among others.

For example, in 1682, after the Portuguese *Conselho Ultramarino* decided to found a hospital in Mozambique, in part as an aid station for the crews and passengers of the *Carreira da Índia* ships, a very large consignment of medicines originating from Europe, Brazil, and India was forwarded from Goa to stock the facility's pharmacy. Imperial medical authorities included a range of remedies containing opiates in this initial shipment.¹⁹ Colonial medical authorities made sure that the new Mozambique hospital would have a small stock of

the popular *pedras cordeais* in the pharmacy. Besides opiated painkillers, other Indian medicines shipped in this consignment include rhubarb leaves and pills; medical pastes and unguents prepared with tamarind or aloe; althea ointment; asafetida root; and the curiously named “Hindu Pearls” (*Pirullas Hindoos*), a prepared medicine apparently manufactured with ingredients of Indian origin, if not indeed copied from a traditional Malabar Coast bolus.²⁰

Over a century and a half later, in 1838, various Indian medicines, including opiates and healing balms, pastes and lotions, were being shipped to East Timor as part of a consignment of drugs requested for the government-administered Military and Public Hospital in Dili. Several of the medical preparations sent to Timor from Goa had equivalents in traditional Indian ayurvedic methods: an unguent made from the althea, pain balms including camphor and the roots and leaves of asafetida are examples of these.²¹ Hospitals, pharmacies, and infirmaries situated throughout the *Estado da Índia*, as well as medical facilities located in the Atlantic colonies, were ordering and consuming a steady supply of traditional Indian medicinal substances from at least the 1650s into the mid-nineteenth century. Portuguese reliance on medicinal opium, in fact, lasted well into the modern era; the narcotic was still available in raw form and in over-the-counter patent remedies in colonial pharmacies into the 1960s (Gracias 105-106).

Indian medicinal exports to Europe during the early phase of the empire seem to have been limited by relatively low demand, but this picked up in the eighteenth century. Most continental Portuguese curative preparations, both in popular healing lore and in academic pharmacological publications and practice, came from sources that were available in Europe (Araújo 20-21). Knowledge about South Asian curatives was not widespread at the popular or professional level in Portugal until after the publication in 1711 of Dom Caetano de Santo António's *Pharmacopea Lusitana Reformada*; such knowledge spread only gradually thereafter. In Portugal, folk healers and licensed physicians alike preferred to use locally grown plants or medicines from the European medical tradition almost exclusively, the effects with which they were most familiar. Despite the exotic allure and rumored efficacy of Asian drugs among elites, Portuguese physicians in the home country seem to have resorted to them only rarely, while popular *curandeiros* [folk healers] used them practically not at all (Araújo 20-21).

There were, of course, exceptions: opium, rhubarb, benzoin, *pedras cordiais* from Goa and Macau, and the like enjoyed a certain popularity but, salable

as these substances were, they constituted only a minor piece of the total pharmaceutical market's volume. Opium held a place in the Portuguese domestic market but, until the late eighteenth century, that place as a painkiller or recreational substance was small. Opium use, in the form of an alcoholic tincture of laudanum, increased during the peninsular campaigns of the Napoleonic Wars, but this was due largely to the drug's popularity among the regimental surgeons of Wellington's polyglot Anglo-Portuguese army.

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Because of continuing problems with the health of soldiers and colonial officials in the tropics deep into the nineteenth century, imperial authorities in Lisbon maintained their interest in discovering new indigenous remedies from India that could be of use in crown endeavors. In a royal directive dated 2 April 1798, the *Cirurgião-Môr* [chief surgeon] and other *médicos* of the Hospital Militar de Goa were given an opportunity to display their knowledge of indigenous medicine from Portuguese India. Queen Maria I, and the *Conselho Ultramarino*, seeking medicines to treat tropical diseases throughout the Portuguese maritime colonial network, commissioned the Hospital Militar's staff physicians and surgeons to write a description of all the useful medicinal plants found along the Malabar Coast and in the remaining Portuguese enclaves.

The following year, *Cirurgião-Môr* Dr. José Abriz and his colleagues produced a report, extending to nearly forty manuscript pages, in which they provided thorough descriptions of eleven important roots and plants then in use in the medical facilities of Goa, Damão, and Diu, as well as the east African colonial holdings.²² Following the order in which they appear in the text, these plants are: *Raiz de Cobra* [Snake Root]; *Calumba*; *Butua* (also known as *Pereira Brava*); *João Lopes Pinheiro*; *Pedra Quadrada*; *Casca de Raiz de Inhaca*; *Bangue*; *Cuia Cuia*; *Bataatinha*; *Contos do Espinhos*; and *Inhofancos* (or *Inhofancur*). The medical professionals in Goa included their report with the official correspondence of the *Estado da Índia* (the *Livros dos Monções do Reino*), sent to Lisbon aboard the annual government-sponsored vessel; their cover letter is dated 29 April 1799.²³

The 1799 Abriz report constitutes a follow-up to the document submitted in 1794 by the then-*Físico-môr* [chief physician] of the *Estado da Índia*, Ignácio Caetano Afonso, entitled *Discripçoens e Virtudes das Raizes Medicinaes* [*Descriptions and Virtues of Medicinal Roots*]. Afonso, a native Goan Christian

whose medical training consisted of a mixture of European and indigenous healing techniques, had detailed five medicinal roots found in the Indian Ocean basin that he thought would be of use to Portuguese colonial installations in the tropics.²⁴ (Most of these roots were in fact of African origin but by the eighteenth century could be found growing in western India.) Afonso's report had clearly sparked some interest among colonial officials in Lisbon. However, it is likely that the prudent members of the *Conselho Ultramar* wanted the benefit of a second opinion from a source trained wholly in scientific Western medicine; by 1799, a European-born, University-of-Coimbra-trained chief surgeon had been installed in Goa at the Hospital Militar.

The *cirurgião-môr* Abriz and his colleagues, however, were apparently convinced of their Indian-born predecessor's competence; all of the medicines included in the 1794 Afonso report found an enthusiastic endorsement in the later report issued by the European-led medical commission. (Of course, the case could also be that Abriz, like many Portuguese colonial administrators of this period, was simply indolent, and copied Afonso's work because he couldn't be bothered to do his own research.) The plants and roots chosen for inclusion in the 1799 report are also notable in that, although they had long been in use as ingredients for remedies along the western coast of India, most of them came originally from east Africa (at least, according to contemporary Portuguese understanding of their botanical provenance). The Abriz report of 1799 thus consciously disseminated information about remedies of the greater Indian Ocean basin, rather than just the Indian subcontinent. Here are truncated entries for each healing plant as related by the 1799 Abriz report:

Raiz de Cobra [Snake Root]:

[...] a plant that grows in the manner of a vine; it grows in mountains, and is found in abundance in Goa [...]. It comes from Africa, where they make general use of it. [...] The blacks use it for animal and insect bites [...] there it is called "*Gangar*" [...]. Its pharmaceutical virtues help respiration, and by constant observation is an admirable and a most efficacious remedy, specifically against the venom of cobras, all qualities of insects & venomous animals, being administered internally in the dose of one *oitava* [eighth pint?] more or less, dissolved in water from a spring, and on the exterior, applied to [the area] around the bitten part in the form of a liniment, introducing more into the wound, by means of an incision, the work done of course in this case to purge the virulent serum from that wound [...].²⁵

Calumba:

A root [...] that usually clings to the trunks of trees [...] is similar to the root of Manioc of [South] America. There are two species of it [...] yellow and white, of which the white is better. Its virtue is as a fever reducer, stomach calming agent, carminative, and anti-hysteria medication [...] taken in liniment or infusion. One is applied in powder in a dose of 10 to 20 grains. It is administered for intermittent fevers, indigestion, those afflicted with hysteria, colic and flatulents. It is found in the river Senna, and in some parts of Macua; we are told it is in Damão where *certain priests* [the discredited Jesuits; italics added] took it, and made plantations.²⁶

Butua (also known as *Parreira Brava*):

There are three species of it, one of which is called *Butua*, the other two *Parreiras*. The *Butua* is a vine [...] with broad rounded leaves and fruits like bunches of grapes. It is found in diverse places in this country [Goa], one of which is certain to have come from Africa. Its virtue is as a solvent or anti-coagulant, aperitif and diuretic, administered internally in contusions, puncture wounds, lymphatic tumors, and externally as a topical in liniment form or fomentation. *Parreira Brava* exists in two qualities, one white and one red [...] and is distinguished by its yam [root-potato]. Its virtue is as an expectorant, solvent, and in incidents of wounds or injuries. Administered to inflammations, cataracts, rabies, physical problems from excess drinking and asthma attacks. Given internally, it is cooked and sweetened with sugar or honey [...] externally it is applied in the same way as *Butua*; the dose of one or the other is of one *oitava* [eighth pint] up to two *oitavas*, more or less [...].²⁷

João Lopes Pinheiro:

This root comes from Africa, and in Goa there is an abundance of it. It is from a tree, very tall, and full of thorns; its leaves are thin and small; it produces seed [...] which in the idiom of this country [Konkani] is commonly called *tefoláns* [...]. Its virtue is as an anti-fever medicine, carminative, as applied in dentistry, dissolver of cold tumors, much valued for neurotic pains and ailments, and against the venom of cobras. Its dose is the same as *Calumba*, and its counter-indicatives.²⁸

Pedra Quadrada [Quartered Stone]:

[...] black or brown and iron-like, it is very resilient and hard. You find these stones in Mozambique and in Minas Gerais of Brazil, [...] as *matéria médica*, it is used to check or curb an illness, as an astringent of [skin] obstructions, against

glimpses or glances [evil eye?], immoderate fluxes of blood; and general [bodily] reduction [wasting illness?] [...] in the form of pills in the dose of one scruple up to half an *oitava*.

Casca de Raiz de Inhaca [Husk or bark of the Inhaca root]:

This bark or husk is from the tree or bush that is unknown in Goa, but some doctors affirm that it exists in Mozambique and all the coast of Africa. Its virtue is as a soporific, administered for colds and fevers that come from fatigue; or “venereal excesses,” which in Mozambique are commonly called *Inhacas*. Its dose is half an *oitava* up to one *oitava*. Its side effects are the same that all soporifics have—heat flashes and hot fevers.²⁹

Bangue [Hashish]:

It is a shrub similar to hemp of Europe and is the height, more or less, of a man. It is [...] found in Goa in diverse places as well as in Africa [...] and other parts. The vegetation is narcotic, very acrid and pungent, and sulfuric; it has deleterious or venomous qualities, from the leaves, of which the Moors and Blacks make the same use, as tobacco to smoke [...] and which they introduce into sweets and spirituous drinks. It is not known in what dose, but it causes the action of the spirit to be enlivened and sharpened, like wine. Some practitioners advise that one should put it as a lotion in the hair of women who are old or nervous, to guard against hysterical accidents and apoplectic fits.³⁰

Cuia Cuia:

It is a root, solid and [...] tannic. Applied for bloody flux, or dysentery with bloody discharge, dissolved in a small portion of water, or cooked; the plant once cooled is said to be very efficacious, and better than manioc.³¹

Batatinha:

[...] commonly called *minonga*, [it] grows in abundance in the Rivers of Senna, Quelimane and other parts of Africa, in places where it is sandy and humid [...] its leaves when they are green give a milk [...] which the Blacks drink to “invigorate their potency” [...]. Its virtue is as an anti-fever [medicine] [...] and we confirm that it has the same qualities, and is administered in almost all cases in which one gives *quina* [quinine, or Jesuit's Bark], and in the same dose given internally, the interior being “irrigated” with vinegar, and applied topically in the form of a liniment against tumors, to resolve inflammations, punctures, sore throat, and especially in the hot season, when it is customary to carry the plant hanging in the form of an amulet.³²

Contos do Espinhos:

The fruit of a tree [...] found in many parts of the River Senna [...]. It is worn around the neck on a cord to ward off the “false heats” [seasonal monsoon fevers?].³³

Inhofancos (or Inhofancur):

It is a species of cone that comes from a shrub [...] found in the lands of Manicca, and its virtues are as a perspiratory, diuretic, antifebrin, and antispasmodic; it is applied for rabies [bites from animals], intermittent fevers, and hypochondria. It has an agreeable taste; it is taken in the form of a tea, and many boil it mixed with tea of China, in a quantity comparable with ordinary tea. It is not known to produce bad effects; its singular qualities are well known [...]. The leaves keep a long time. Some use its water for an ordinary drink.³⁴

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Colonial administrators in Portugal maintained their interest in potentially useful and commercially exploitable South Asian indigenous remedies into the nineteenth century. As late as 1830, the new governing charter of the Hospital Militar de Goa stipulated that it was the responsibility of the physicians and surgeons employed there to seek out new medical preparations from indigenous sources, investigate their qualities, and report any promising findings to government authorities in the metropole. The medical staff in Portuguese India was charged with remitting detailed information about “new attempts and discoveries for any remedy or curative whatsoever,” and instructed to report specifically on “the preparation, dose, application, and in which cases and circumstances [the medicine] is found useful.”³⁵

The Faculty of the Hospital will experiment with all new medicaments and curatives in those cases where they appear to give good indications, after having consulted about this with the Chiefs of the Faculty [...] and write daily reports concerning these illnesses, in which they designate with the most exacting truth, and love of science, all of the circumstances in which the patient was found, to whom this or that remedy was applied, and the effects this produced [...]. These diaries should be submitted to the Chief Physician and Chief Surgeon respectively [...] for the ends declared.³⁶

The hospital regulations further stipulated that the chief physician and surgeon were to report to Lisbon about the commercial prospects for any new

indigenous drugs they discovered, as well as on the “advantages that may be hoped [from the drug] for the alleviation of humanity.”³⁷

*

Portuguese colonial expansion in Asia during the sixteenth and seventeenth centuries had a profoundly important scientific dimension, the impact of which far outlasted the economic ascendancy of the eastern empire. Portuguese exploration added extensively to the European understanding of global navigation and geography, but their contribution to the field of pharmacological botany was no less significant. In the Asian colonies, Portuguese healers encountered a radically different sphere of natural knowledge, one that they would continue to explore, exploit, expropriate, and export for more than three centuries. In an unmatched feat of scientific dissemination, Portuguese colonial officials spread Indian drugs and information about South Asian healing methods to European territories on four continents. Indian medicine played a significant role in the state-sponsored health care institutions of the Portuguese colonies. Portuguese colonial agents undertook this activity consciously for scientific and commercial ends, as well as for practical ends, to facilitate and further Portuguese imperial ambitions. Indian ayurvedic medicinal preparations and healing techniques thus became widely known in Portuguese-controlled enclaves in the Atlantic and Pacific Oceans, far from their indigenous roots, and were deeply inculcated into the lexicon of tropical medicine in the Lusophone colonies.

Notes

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² Bibliothèque nationale de France, Department of Manuscripts, Fonds Portugais No. 59, *Experiencias das hervas orientaes que Sua Magestade mandou fazer ao vizorey Mathias de Albuquerque, anno de 1596*, ff. 29-77v.

³ Bibliothèque nationale de France, Department of Manuscripts, Fonds Portugais No. 59, *Breve compendio de varias receitas de medicina*, ff. 2-79v.

⁴ Bibliothèque nationale de France, Department of Manuscripts, Fonds Portugais No. 59, *Breve compendio de varias receitas de medicina*, ff. 79-155 (Chinese text on ff. 151v-152; French text on ff. 124-127v.)

⁵ Historical Archive of Goa (HAG) 1429, *Regimentos e Instruções* (1727-1737), f. 229.

⁶ HAG 1436, *Regimentos e Instruções* (1771-1774), f. 11r/v.

⁷ Central Library of Panaji, Goa; Manuscripts No. 18: *Notícias Particular do Comércio da Índia* (dated 13 July 1772 at the Court of Pune, by Friar Leandro), ff. 2-58.

⁸ Central Library of Panaji, Goa; Manuscripts No. 18: *Notícias Particular do Comércio da Índia* (dated 13 July 1772 at the Court of Pune, by Friar Leandro), ff. 27-36.

⁹ Central Library of Panaji, Goa; Manuscripts No. 18: *Notícias Particular do Comércio da Índia* (dated 13 July 1772 at the Court of Pune, by Friar Leandro), f. 28.

¹⁰ Central Library of Panaji, Goa; Manuscripts No. 18: *Notícias Particular do Comércio da Índia* (dated 13 July 1772 at the Court of Pune, by Friar Leandro), f. 27.

¹¹ Central Library of Panaji, Goa; Manuscripts No. 18: *Notícias Particular do Comércio da Índia* (dated 13 July 1772 at the Court of Pune, by Friar Leandro), f. 32.

¹² *Representação da corporação dos boticários de Lisboa pedindo o encerramento das boticas dos conventos* (ANTT, Ministério do Reino, Maço 469, no date [mid-eighteenth century]); qtd. in Dias, "Inovação Técnica" 638-639. See also Dias, "A Botica" 20.

¹³ Santo António *Pharmacopea Lusitana*; and Santo António *Pharmacopea Lusitana Reformada*; Neto 10-11.

¹⁴ *Lista da Botica de São Roque* (Arquivo Histórico do Tribunal de Contas, *Junta da Inconfidência*, nr. 112, ff. 58-73), qtd. in Dias, "A Botica" 626-633.

¹⁵ *Regimento dos Familiares do Santo Ofício* (Lisbon: Officina de Miguel Manescal, 1694); British Library Manuscripts Room, Add. 20: 953, ff. 173-174.

¹⁶ HAG Monções do Reino 135B (1753-1763), f. 489v.

¹⁷ HAG 1736, ff. 9v-12r.

¹⁸ HAG 8031, ff. 4r/v.

¹⁹ HAG Monções do Reino 46A (1681-1682), ff. 96r-97v.

²⁰ HAG Monções do Reino 46A (1681-1682), ff. 96r-97v.

²¹ HAG 1346 ("Relação dos Medicamentos que fazem preciso para o Hospital Publico Militar dos Ilhas de Soldar e Timor"), f. 183.

²² HAG Monções do Reino 178B (1798-1799), ff. 644-664.

²³ HAG Monções do Reino 178B (1798-1799), f. 644.

²⁴ HAG Monções de Reino 175, ff. 219-230.

²⁵ HAG Monções do Reino 178B (1798-1799), f. 645.

²⁶ HAG Monções do Reino 178B (1798-1799), f. 645v.

²⁷ HAG Monções do Reino 178B (1798-1799), ff. 645v-646.

²⁸ HAG Monções do Reino 178B (1798-1799), f. 646.

²⁹ HAG Monções do Reino 178B (1798-1799), f. 646v.

³⁰ HAG Monções do Reino 178B (1798-1799), f. 647.

³¹ HAG Monções do Reino 178B (1798-1799), f. 647.

³² HAG Monções do Reino 178B (1798-1799), f. 647v.

³³ HAG Monções do Reino 178B (1798-1799), f. 647v.

³⁴ HAG Monções do Reino 178B (1798-1799), f. 648.

³⁵ HAG Nr. 646; *Regulamento para o bom governo do Real Hospital Militar de Goa e Botica Annexe*, 1830; Title 4, Article 7; ff. 28-29.

³⁶ HAG Nr. 646; *Regulamento para o bom governo do Real Hospital Militar de Goa e Botica*

Annexa, 1830; Title 4, Article 8; ff. 32-33.

³⁷ HAG Nr. 646; *Regulamento para o bom governo do Real Hospital Militar de Goa e Botica Annexa*, 1830; Title 4, Article 8; f. 29.

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