CHAPTER 1

Surgeons, Fakirs, Merchants, and Craftsmen: Making L'Empereur's *Jardin* in Early Modern South Asia

Introduction

In recent years there has been increasing interest in the strategies employed by Europeans for gathering natural-historical, ethnographic, and geographical knowledge beyond the confines of the metropolis in the context of European expansion. Academic attention has focused in two main directions. One examines the specificity of these modes of 'field' inquiry in contrast to the more common focus in science studies on knowledge making in the controlled setting of the laboratory.[1] The other looks at the genre of 'instructions to travellers'—often written by sedentary men of science in Europe—aimed at teaching travellers what to observe in foreign lands, how to regulate and standardize their gestures and techniques when collecting the requisite objects, and, finally, how to report on them.[2]

[1] See Henrika Kuklick and Robert E. Kohler, 'Introduction', in idem, eds, *Science in the Field*, *Osiris* (2nd series), vol. 11 (Chicago & London: University of Chicago Press, 1996), pp. 1–14.

[2] See Joan-Pau Rubiés, 'Instructions for Travellers: Teaching the Eye to See', *History and Anthropology*, vol. 9 (1996), pp. 139–90; Marie-Noëlle Bourguet, 'La collecte du monde: voyage et histoire naturelle (fin XVIIème siècle—début XIXème siècle)', in Claude Blanckaert, Claudine Cohen, Pietro Corsi and Jean-Louis Fischer, eds, *Le Muséum au premier siècle de son histoire* (Paris: Muséum National d'Histoire Naturelle, 1997), pp. 163–96; and John Law, 'On the Methods of Long-Distance Control: Vessels, Navigation and the Portuguese Route to India', in idem, ed., *Power, Action and Belief: A New Sociology of Knowledge?* (London: Routledge & Kegan Paul, 1986), pp. 234–63.

Although both approaches have opened a number of new and important questions for the history of science, each is riddled with serious difficulties. Thus, by opposing the heterogeneous space of the field sciences with the more uniform civilities of the laboratory sciences, the former approach fails to examine the relationship between the two spaces of knowledge making, between those 'out there' and their sedentary colleagues who often played a crucial role in validating knowledge claims made in the field. And, by focusing exclusively on the corporeal and labelling techniques that metropolitan savants recommended to workaday travellers (usually seamen, ships' surgeons or merchants, and, sometimes, missionaries), the latter set of studies suggest that it is enough to scrupulously follow instructions in order to gain knowledge of the outside world. They thereby imply that the sought-after natural-historical objects and knowledge were directly accessible to the travellers, and that the whole project of collecting nature was akin to present-day space engineers programming planetary probes in order to retrieve relevant information from hostile environments. But the crucial difference between space probes and early-modern travellers is that the latter mainly visited populated lands and had to negotiate with indigenous peoples to find out about, and obtain, objects that were often accessible only through their mediation.

Many European men of science were well aware of this aspect, as even a cursory reading of their instructions makes clear. Robert Boyle's (1627–91) *General Heads for the Natural History of a Country* (1692), which he advertised as 'the only sure Foundation of Natural Philosophy', is a classic of the genre. His instructions range from hydrographical and topographical measurement, the reckoning of latitude and longitude, 'Specifick Gravity of the Air', 'Weights of the several Waters', recording astronomical phenomena, climate, and 'Soyls . . . Minerals, Vegetables or Animals' of the places visited, to the arts, mining and metal extraction techniques, laws, agriculture, economy, and medicine of their respective inhabitants—

> both Natives and Strangers, that have settled there; particularly their Stature, Shape, Features, Strength, Ingenuity, Dyet, Inclination, that seem not due to Education. As to their Women, their Fruitfulness or Barrenness, their easie or hard Labour, with their exercises and Dyet; the Diseases both

> Men and Women are subject to, peculiar to themselves, compared with their Dyet, Air *&c*. that do influence them.

They also included specific 'Enquiries about Traditions, concerning all particular things relating to [each] Country, as either peculiar to it, or at least uncommon elsewhere.' These countries included 'Turky', Poland, Hungary and 'Transilvania', Egypt, 'Guiny', Persia, 'Suratte, *&c*.' (which included the Indian subcontinent, Southeast Asia, China, Japan and the Philippines), Virginia, Bermudas, 'Guaiana', 'Brasil' and the 'Antisles (or Caribe Islands)'. In particular, Boyle directs travellers to 'enquire' into the 'Plants, Trees, Fruits, *&c*. with the Peculiarities observable in them . . . and what Soyls they thrive best in. What Animals, Terrestrial or Volatile, or Insects of all sorts they [the inhabitants] produce, and to what Use applyed by [them], as to Meat, Physick, Surgery, or Dying, *&c*.'[3]

As this passage implies, the role of the traveller was precisely to report on the social—and economic—significance of natural-historical objects, especially of flora and fauna, bringing to light their anchorage in the human cultures that surrounded them. The acquisition of this knowledge—hardly possible without the active participation of indigenous collaborators—was seen as an inevitable first step towards the commoditization of these objects within the regional and global economies that the Europeans sought to enter and reconfigure. Because of its strategic importance, it must be mentioned that this type of information was itself highly prized merchandise.[4]

[3] Robert Boyle, *General Heads for the Natural History of a Country, Great or Small, Drawn out for the Use of Travellers and Navigators* (London: J. Taylor, 1692), quotes from pp. 1, 8, 9, 13. That knowledge is to be gained through 'enquiry' is explicitly stated in the same section, pp. 11–12. See also Francis Bacon, 'Of Travel (1597)', in idem, *The Works of Francis Bacon*, ed., James Spedding, Robert Leslie Ellis and Douglas Denon Heath, 14 volumes (London: Longman & Co., 1861), pp. vi, 417–18; John Woodward, *Brief Instructions for the Making of Observations and Collections, in order for the Promotion of Natural History in all Parts of the World* (London, 1696).

[4] Benjamin Schmidt, 'Inventing Exoticism: The Project of Dutch Geography and the Marketing of the World', in Pamela H. Smith and Paula Findlen, eds, *Merchants and Marvels: Commerce, Science, and Art in Early Modern Europe* (New York & London: Routledge, 2002), pp. 347–69.

To be sure, the interactive nature of knowledge gathering outside the metropolis has not escaped the notice of at least some historians, as attested to by recent research on the role of intermediaries in the construction of natural knowledge, although mainly in the context of the New World.[5] Little attention has, however, been focused on the other major contact zone—the Indian Ocean.

For the latter area, specific approaches and methods need to be developed. Despite many similarities, European encounters with the West and the East present significant differences, especially in the case of knowledge formation. Attracted to the East initially by the lucrative spice and luxury-commodity trade, Europeans discovered a world that was, all said and done, familiar to them, one already dominated by trade and the presence of Muslims, their perennial, yet well-known, rivals. However, it was also a world in which they formed but one very small commercial group among many long-established trading communities of different racial, religious, and regional origins, who constituted an intricate and dynamic world of commerce—based largely on botanical products—extending across the Indian Ocean.[6] European survival in the region thus depended on the development of an ongoing and durable relationship between their merchants, missionaries, and travellers, and various regional agents—rulers, merchants, bankers and interpreters, but also skilled workmen and savants. For in the Indian Ocean world, specialized knowledge, particularly relating to botany, medicine, and alchemy, was already formalized and circulated from the Arabian peninsula to China within constituted specialized communities, each with its own civility. And early-modern European

[5] See Jesús Bustamente García, 'Francisco Hernández, Plinio del Nuevo Mundo: Tradición clásica, teoría nominal y sistema terminológico indígena en una obra renacentista', in Berta Ares Queija and Serge Gruzinski, eds, *Entre dos mundos: Fronteras culturales y agentes mediadores* (Seville: Escuela de Estudios Hispano-Americanos, 1997), pp. 243–68; James H. Merrell, *Into the American Woods: Negotiators on the Pennsylvania Frontier* (New York: W.W. Norton, 1999); Antonio Barrera, 'Local Herbs, Global Medicines: Commerce, Knowledge, and Commodities in Spanish America', in Smith and Findlen, eds, *op. cit.*, pp. 163–81.

[6] See Denys Lombard and Jean Aubin, eds, *Asian Merchants and Businessmen in the Indian Ocean and the China Sea* (Delhi: Oxford University Press, 2000); and Ashin Das Gupta, *The World of the Indian Ocean Merchant 1500–1800* (Delhi: Oxford University Press, 2001).

physicians, surgeons, and, later, naturalists in the region readily acknowledged this fact.

This has led at least one scholar to assert that early-modern European botanizing in South Asia consisted essentially of compiling Middle Eastern and South Asian ethno-botanical knowledge, 'organized on essentially non-European precepts'.[7] However enticing—and refreshing *vis-à-vis* the received notion of botany being a European preserve—this interpretation begs many important questions.[8] What, for a start, were 'European' and 'non-European' precepts of knowledge in the early-modern world? How did Europeans and South Asians develop working relationships in knowledge-making enterprises? What was the nature of the wider material, economic, and symbolic transactions between indigenes and Europeans within which these knowledge-making encounters took place? How did these relate to the manufacturing and trading economies of the region? In what language(s) did they communicate? Was the knowledge that emerged a mere compilation of local knowledges? What was the relationship between this knowledge, its producers on the one hand, and metropolitan European savants and academies on the other? Finally, were there significant differences between the various European nations present in the region in their relationship towards foreign knowledge practices?

Curiously, an unknown manuscript herbal held at the Muséum National d'Histoire Naturelle in Paris, and related documents scattered among various French archives help shed new and valuable light on these questions.

From a Forgotten Codex in a Paris Archive . . .

Under the title *Ellemans botanique des plante du Jardin de Lorixa leur vertu et quallite, tans conus que celle qui ne le sont pas avec leur fleur fruis et grainne traduit de louria an frances* (Botanical Elements of the Plants

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

[8] For the traditional perspective, see Isaac Henry Burkill, *Chapters on the History of Botany in India* (Calcutta: Botanical Survey of India, 1965); and Ray Desmond, *The European Discovery of the Indian Flora* (Oxford: Oxford University Press for the Royal Botanic Gardens, 1992).

of the Flora of Orixa, Their Virtues and Qualities, Both Known and Unknown, with Their Flowers, Fruits, and Seeds, Translated from the Oriya into French) the Muséum National d'Histoire Naturelle's library in Paris holds a fourteen-volume folio herbal, twelve of which contain 725 double-folio paintings of 722 plants species. The first two volumes contain a description, in French, of each of these plants with an index of their vernacular names transcribed in the Roman script and a classification according to their medical and, sometimes, economic, uses.[9] In addition, the first volume of the manuscript contains a 'Preface', an '*Avis au lecteur*' (Note to the Reader), and an intriguing frontispiece depicting five human figures, a potted tree in the foreground, and a Greco-Roman ruin in the background. The human figures are divided into two groups—three on the left, comprising an artist painting the tree, a man sitting next to him and a woman carrying plants in a basket on her head, and two on the right: an ascetic holding a manuscript, and a European standing behind him. The style of the frontispiece and the human figures it depicts, as well as that of the plant paintings, leave no doubt as to the South Asian origins of the herbal.

But the library's manuscript catalogue gives only two meagre bits of information: its author is a certain L'Empereur—in all probability the European in the frontispiece—and it dates from the eighteenth century. If the catalogue is laconic, the manuscript is more forthcoming. The title refers to a specific location in the Indian subcontinent: *Jardin de Lorixa* means 'Flora of Orixa' (the common eighteenth-century spelling for present-day Orissa). It also claims that the work is a transla-tion from the Oriya into French. The volumes yield further clues. Their similarity to accounting ledgers, the paintings, the French-watermarked paper, and Indian parchment binding lead one to surmise that the work was executed in a European trading settlement with the requisite infrastructure, indigenous craftsmen, and other specialized communities.

From the 'Preface' and the 'Note to the Reader', we learn that their author, although not a savant, was probably trained in medicine.

[9] Muséum National d'Histoire Naturelle (hereafter MNHN), Central Library, Manuscripts collection, Mss. 1915, 1916, 1916bis, 1916ter, and 1917 to 1926: referred to hereafter as *Jardin de Lorixa.*

Fig. 1: The frontispiece of the *Jardin de Lorixa*. © Bibliothèque Centrale, Muséum National d'Histoire Naturelle, Paris.

L'Empereur modestly states that 'it was not with the ambition of rendering it perfect' that he commissioned the work: 'I only thought of making a start and leaving the glory of finishing it to whoever would like to take it up.' He concludes, 'I would be happy if, through my effort and expenditure, some poor invalid finds relief—that is the only

aim I had in undertaking this botanical treatise'—statements obviously directed to appeal to Catholic missionary sentiment.[10]

Fortunately, both trade and religious leads prove fruitful: following them helps unearth a substantial correspondence in various collections of commercial, scientific, and religious archives spread across France.[11] Among the many stories these documents tell, the most remarkable is the one concerning the conception, making, arrival in France, and ultimate fate of the *Jardin de Lorixa*. Briefly, we learn that it was started in Orissa in the late 1690s, completed in Bengal and shipped to Paris in 1725. But to fully appreciate the story a few words about the French presence in South Asia in the seventeenth and eighteenth centuries are necesssary.

. . . to Eastern India in the Seventeenth Century

Formally arriving only in 1664, with the foundation of the Compagnie des Indes Orientales, the French were latecomers to Asia. Indeed, they were the last of the major European powers to enter the Indian Ocean trading world, over half a century after the Dutch and the English, and more than 150 years after the Portuguese. However, unlike other European companies, the Compagnie des Indes was set up by royal edict, with capital raised from the royal family, courtiers, and financiers, and only reluctantly from France's merchant communities. This factor was to play a crucial role in all domains, including that of knowledge making and legitimization.[12]

The Indian subcontinent being the pivot of Asian maritime trade, and inter-European rivalry the mainspring of its dynamism, the French Company's purpose in finding a foothold there was to obtain those goods which were already being supplied to Europe by the Dutch

[10] MNHN, Ms. 1915: 'Preface', f. IIIv. This passage and all following have been translated by the present author.

[11] The Archives Nationales, Paris (AN); the Centre des Archives d'Outre-Mer, Aix-en-Provence (CAOM); the archives of the Laboratoire de Phanérogamie (LP), MNHN; the archives of the Missions Étrangères de Paris, Paris (MEP); and the archives of the Académie des Sciences, Paris (AS).

[12] For a comprehensive history of the French in Asia, see Philippe Haudrère, *La Compagnie française des Indes au XVIIIe siècle: 1719–1795*, 4 volumes (Paris: Librairie de l'Inde, 1989).

and the English. Textiles, pepper, coffee, saltpetre and a range of items covered by the term *drogues* formed the bulk of the cargoes bound for France, occasionally varied by wild animals—such as rhinoceroses for the royal menagerie—precious stones, books, and works of art. In order to obtain these commodities the French settled in close proximity to other Europeans, initially on the west coast in Surat, then on the east coast in Pondicherry, and finally in Chandernagore in Bengal, close to the important Dutch and English townships of Chinsura and Calcutta. As these settlements were on the Hooghly, the main but hazardous distributary of the Ganges, the Europeans set up lodges in the 1630s at the mouth of the great river, in Balasore in Orissa, in order to house pilots to guide their ships upstream to their trading centres. It was there, soon after the French established themselves in 1686, that L'Empereur found employment as a surgeon to the Compagnie des Indes.[13]

The Origins of the *Jardin de Lorixa*

Nicolas L'Empereur was born in Normandy around 1660. His writings and correspondence suggest that he received a reasonable elementary education. There is no record showing that he trained in any medical or surgical academy in France. Instead, he must in all probability have enrolled as a surgeon's apprentice on an East Indiaman—a common way of entering the profession until the end of the eighteenth century.[14] At the end of a ten-year apprenticeship, around 1688, he finally earned the title of Surgeon Major and settled down to a sedentary life. Unlike most of his fellow apprentices who went back to the French provinces, however, L'Empereur sought to make his living in the employ of the Compagnie des Indes and was posted at Balasore.

Here a decade later L'Empereur developed his plan for the herbal, first, because the herbs and medicines Europeans normally carried with them deteriorated at sea and lost their efficacy by the time they arrived in India. Second, Europeans met with a multitude of hitherto

[13] CAOM, Colonies, Série C^2 115, f. 358.

[14] Claude Chaligne, 'Chirurgiens de la Compagnie des Indes. Histoire du service de santé de la Compagnie, 1664–1793', unpublished doctoral dissertation, Faculté de Medecine, Université de Paris V, 1961, pp. 42–6.

unknown diseases in these distant, tropical climes. Third, the number of medicinal plants, traditionally known to Europeans was relatively small, leading them to look for new remedies overseas.[15] It is important to note that maintaining health at sea was a major problem for Europeans until as late as the nineteenth century. Indeed, out of the 120,000 Frenchmen who sailed to the East between 1664 and 1789, whether as ordinary sailors or important officials, 35,000 died during the voyage.[16] In 1698, for instance, the very year that L'Empereur conceived of his scheme, a French naval squadron was ravaged by disease in the Bay of Bengal, losing over 600 men within days, including almost all its surgeons and medics.[17] L'Empereur reported on this catastrophe to his friend Gabriel Delavigne (1657–1710), who had returned to Paris from Asia the previous year to head the powerful Société des Missions Étrangères de Paris, a Catholic order set up by the French crown in 1664 in order to proselytize Asians. He went on to describe his plan to buy 'all the books on medicine that the people here have and find out how they use them. I plan to translate these into French so that we know all the cures, great and small, that are as yet unknown to Europeans. We will thereby be able to constitute a library of medical works for India as well as a pharmacy.'[18] The latter was all the more important because 'Indians usually compose their remedies themselves as and when they need them. There are no druggists because it is not worth their while except in Surat in Gujarat where one finds drugs imported by sea from far and wide.'[19] A couple of years later, he elaborated his scheme: 'This work will be of considerable size and, once printed, nothing [of Indian medicine] will be left unknown to the European surgeon.'[20]

[15] MNHN, Ms. 1915: 'Preface', f. IIIr.

[16] Chaligne, *op. cit.*, Dedication and p. 85. See also John Joyce Keevil, Charles Christopher Lloyd and Jack Leonard Sagar Coulter, *Medicine and the Navy, 1200–1900*, 4 volumes (Edinburgh & London: E. & S. Livingstone, 1957–63), vol. 2, pp. 1649–1714.

[17] Anne Kroell, 'Une escadre décimée par la maladie dans le Golfe du Bengale en 1698', *Chronique d'histoire maritime*, vol. 16 (1987), pp. 24–35.

[18] MEP, V 959, f. 153: L'Empereur to Delavigne, 20 January 1699.

[19] MNHN, Ms. 1915, 'Avis au lecteur', ff. IVr.

[20] MEP, V 990, f. 533: L'Empereur to Delavigne, 6 January 1701.

L'Empereur was, of course, not the first European to conceive such a plan. Already, during the sixteenth century, a number of Portuguese had begun gathering material on Asian natural history for similar reasons. The best known of these were Garcia da Orta (*c.*1500–*c.*1568) and Cristovão da Costa (or Christoval Acosta) (*c.*1515–*c.*1592) both of whom had spent many years on the Malabar coast. It is significant that the first non-religious book to be published in the Portuguese colony of Goa was da Orta's *Coloquios dos simples e drogas . . . da India . . .* in 1563—so strategically important was Asian botanical knowledge for Europeans.[21] It was almost immediately translated into Latin (1567) by Charles de l'Escluse (Carolus Clusius), perhaps the most eminent botanist of the sixteenth century and founder of the Leiden botanical garden.

Almost immediately upon establishing themselves in the Indian Ocean, the Dutch Verenigde Oost-Indische Compagnie (VOC) had set up in Batavia (present-day Jakarta) a surgeon's shop in the 1610s, followed by a proto-botanical garden to grow medicinal plants brought from various parts of South East Asia. In the 1670s, the Dutch Commander of Malabar, Hendrik Adriaan Van Reede tot Drakenstein (1636–91), had a gigantic work commissioned on the flora of this region.[22] Its pen-and-ink-wash drawings of some 720 species were accompanied by a detailed description of each. The herbal was published, partly posthumously, under the title of *Hortus Indicus Malabaricus* in twelve folio volumes in Amsterdam between 1678 and 1693 and was soon to become the standard reference work for the flora of south-western India. Indeed, Van Reede's work, and that of Paul Hermann (1646–95)—another Dutchman—on Ceylon, were to form

[21] Garcia da Orta, *Coloquios dos simples e drogas he cousas mediçinais da India e assi d'algunas frutas achadas nella onde se tratam algunas cousas tocantes a mediçina pratica e outras cousas boas pera saber compostos pello Dor. Garcia Dorta* (Goa, 1563); and Christoval Acosta, *Tractado de las drogas y medicinas de las Indias Orientales, con sus plantas debuxadas al bivo* (Burgos, 1578).

[22] Van Reede's family name has been variously spelt. I adopt the form used in Heniger's authoritative biography: Johannes Heniger, *Hendrik Adriaan Van Reede tot Drakenstein (1636–1691) and* Hortus Malabaricus: *A Contribution to the History of Dutch Colonial Botany* (Rotterdam & Boston: A.A. Balkema, 1986).

Linnaeus's main sources for the flora of Asia.[23] Mention must also be made of another VOC medic, Georg Eberhard Rumpf or Rumphius (1627–1702), who spent a large part of his life botanizing in the Molucca Islands, gaining renown as *Plinus Indicus.* The Dutch used their knowledge of the tropical flora of Asia to transfer plants to strategic stations in the region, like the Cape of Good Hope, Batavia, and Ceylon, in order to provide a distributed stock of medicaments, fresh vegetables, timber for ship-building and repair, and commercial crops like the areca palm for the regional market.[24]

The English, too, were busy collecting Asian plants and sending them back to London with whatever details they could gather of their therapeutic and other properties, sometimes even in local languages.[25] By the mid-seventeenth century both the Dutch and the English Companies had supplemented Asian luxury goods and spices with a vast range of exotic plants for sale on European medicinal markets.[26]

Dutch and English presence in Balasore, and perennial inter-European rivalry, played no small role in spurring L'Empereur to

[23] Paul Hermann's Herbarium is now held at the Natural History Museum, London. For the VOC's interest in scientific knowledge, see Johan Leonard Blussé and Ilonka Ooms, eds, *Kennis en Compagnie: De Vereigde Oost-Indische Compagnie en de moderne Wetenshap* (Amsterdam: Balans, 2002). More generally, see Kapil Raj, 'Eighteenth-Century Pacific Voyages of Discovery, "Big Science", and the Shaping of an European Scientific and Technological Culture', *History and Technology*, vol. 17, no. 2 (2000), pp. 79–98.

[24] See Peter Boomgaard, 'The VOC Trade in Forest Products in the Seventeenth Century', in Richard Grove, Vinita Damodaran and Satpal Sangwan, eds, *Nature and the Orient: The Environmental History of South and Southeast Asia* (Delhi: Oxford University Press, 1998), pp. 375–95.

[25] See Samuel Browne, 'An Account of Part of a Collection of Curious Plants and Drugs, lately given to the Royal Society by the East India Company', *Philosophical Transactions of the Royal Society*, vols 20, 22, 23 (1700–1), pp. 313–35, 579–94, 699–721, 843–58, 933–46, 1007–22, 1055–65, 1251–65, 1450–60; another surgeon, Edward Bulkley (1651–1714), sent home at least five volumes of dried plants, fruits, and drugs, with their local names sometimes transcribed in local characters. These are preserved in the Sloan Herbarium, Natural History Museum, London.

[26] See Harold J. Cook, 'Physicians and Natural History', in Nicholas Jardine, James A. Secord, and Emma C. Spary, eds, *Cultures of Natural History* (Cambridge: Cambridge University Press, 1996), pp. 91–105, especially p. 95.

embark on his ambitious project. 'While we [the French] . . . are the poorest', he complained to Delavigne, 'the English flourish through their trade everywhere.'[27] In 1706 L'Empereur moved as senior surgeon to Chandernagore in Bengal, the most important French settlement in South Asia at the time. He was now at the nerve centre of European activity in eastern India and could report on it closely. 'The English send a large quantity of calumba wood to England each year', he writes to Antoine de Jussieu (1686–1758), professor at the Jardin du Roi in Paris, 'as they have taken the trouble to test it and spare no means to obtain all that is curious.' Or again: 'The Dutch buy 300 pounds of *redovar* [Telugu for spurge wort] each year, which they ship to Batavia for their own use, as well as to Europe.'[28]

While it was relatively easy to report on rivals' exports, knowledge of the properties and uses of these botanical products was difficult to obtain from fellow Europeans, who did everything in their power to keep it secret or to mislead the others. Thus, John Ovington (1653–1731), an English chaplain at Surat in the 1690s, was sceptical about the Dutch account of the propagation of nutmeg. 'They relate a passage somewhat strange and surprising concerning the nature of the nutmeg-tree', he writes,

> that it is never planted, and if it be it never thrives; but such of them as fructify and arrive at perfection, arise from a ripe nutmeg swallowed whole by a certain bird in those islands, which disgorges it again without digesting it, and this falling to the ground with that slimy matter it brought along with it, takes root and grows a useful tree: But this may be a subtle contrived story of the Dutch, to keep men from endeavouring to transplant them.[29]

Each nation spared no efforts to spy on the others. The Jesuit, Guy Tachard (1651–1712), Louis XIV's savant-ambassador to Siam in the 1680s, met Van Reede (who was at the time investigating the dysfunctions of the VOC in the Indian Ocean) several times during his fifteen-day halt at the Cape of Good Hope in June 1685. Tachard wrote a long

[27] MEP, V 958, f. 207: L'Empereur to Delavigne, 4 December 1702.

[28] MNHN, LP, GGA/52766/1: L'Empereur to Antoine de Jussieu, 25 December 1729.

[29] John Ovington, *A Voyage to Suratt in the Year 1689* (London: Oxford University Press, 1929, originally published 1696), p. 99.

report on the latter's progress in preparing a *Hortus Africus* (*sic*) along the lines of his *Hortus Malabaricus*. He even managed to entice one of Van Reede's draftsmen, Hendrik Claudius, to hand him the report of an expedition into the interior of South Africa, a map, and some drawings of plants and animals made in the process. Back in France, he lost no time in publishing the material in his own memoirs.[30] The indiscretion cost Claudius his job, disgrace, and banishment from the Cape colony.[31]

Ultimately, in order to garner natural knowledge, Europeans had to work their way into specialized local networks. Thus, Garcia da Orta who, besides practising medicine, was also a trader—chiefly in *materia medica* and jewels—and shipowner, depended chiefly on his Asian medical and trading partners for his knowledge, and on a vast network of paid correspondents and agents who sent him plants and seeds from all over Asia.[32] And it was as commander of the Dutch possessions in Malabar that Van Reede, who was not instructed in medicine or botany, used his relations with the Raja of Cochin and his institutional authority to mobilize the various human resources of the colony to make the *Hortus Malabaricus*.

Making the *Jardin de Lorixa*

In his 'Note to the Reader', L'Empereur explains how he obtained his botanical knowledge:

> There are fakirs who travel all their lives and many have a lot of wisdom. However, it is difficult to get them to share any of it, unless you know them intimately and offer them alms. Otherwise, . . . they inform you coldly that they are not interested in money. But I have been friendly with two of

[30] Guy Tachard, *Voyage au Siam, des peres Jesuites, envoyez par le roy aux Indes et à la Chine. Avec leurs observations astronomiques, et leurs remarques de Physique, de Géographie, d'Hydrographie, d'Histoire* (Paris, 1686), pp. 87–112.

[31] Mary Gunn and Lesley Edward Wostall Codd, *Botanical Exploration of Southern Africa* (Cape Town: Botanical Research Institute/A.A. Balkema, 1981), p. 118.

[32] Augusto da Silva Carvalho, 'Garcia d'Orta. Comemoração do quarto centenário da sua partida para a India em 12 de Março de 1534', *Revista da Universidade de Coimbra*, vol. 12, no. 1 (1934), pp. 61–246, particularly pp. 103, 126. See also Charles Ralph Boxer, *Two Pioneers of Tropical Medicine: Garcia*

them for twelve or fifteen years and through them I meet other passing fakirs. Whenever I find a simple, they instruct me about its properties and uses.[33]

In a letter, he gives further details: 'The fakirs who have the best remedies come every winter to bathe in the Ganges. By giving them something and speaking to them in [Hindustani], directly without interpreters, they let you into their secrets. It was a fakir who thus taught me the great remedy for epilepsy.'[34]

In addition to his duties as surgeon major and member of the Council of Chandernagore, L'Empereur set himself up in private trade, selling uncut emeralds from South America bought for him in Europe, became part-owner of a small ship and bought and sold property for profit.[35] His daily experience with locally available simples convinced him of their efficacy and he began purchasing indigenous books on medicine through his peripatetic friends.[36] These works, which he informs us 'are very difficult to obtain',[37] circulated most commonly in the form of palm-leaf manuscripts in the various vernaculars of the subcontinent, from the Dravidian languages of the South to the Sanskrit-based ones of the North. Judging from the plant names in the *Jardin de Lorixa*, some, like *china malli* (small jasmine), are clearly in Tamil. But L'Empereur seems not to be aware of this linguistic diversity, considering all his material to be in Oriya which, he declares, he translated into French.[38] The process was, however, more complex. By his own admission, L'Empereur did not know Oriya: he got everything translated into Hindustani, the main language of intercourse between Europeans and South Asians in the region. It was this that he himself

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d'Orta and Nicolás Monardes (London: The Hispanic Luso-Brazilian Councils, 1963).

[33] MNHN, Ms. 1915: 'Avis au lecteur', ff. IVv–Vr.

[34] CAOM, F^5 19: L'Empereur to the Abbé Raguet, 20 January 1727.

[35] MEP, V 990, ff. 533, 539: L'Empereur to Delavigne, 6 January and 29 January 1701, respectively; and CAOM, Inde, Notariat de Chandernagore, O 2: Power of Attorney, dated 7 September 1712.

[36] MEP, V 957, f. 153 and V 990, f. 533: L'Empereur to Delavigne, 20 January 1699 and 6 January 1701, respectively.

[37] MNHN, Ms. 1915: 'Avis au Lecteur', IVr.

[38] MNHN, Ms. 1915: Title page and Index.

then undertook to translate into French—'a tedious task', he writes, 'except for me since I speak Hindustani.'[39]

Yet not all the descriptions came from written texts. As mentioned earlier, L'Empereur also acquired medicinal plants, identifying them with the help of his ascetic friends. He had employed a number of gardeners whom he sent at considerable cost to the mountains and forests, sometimes more than 300 miles away, to bring back plants of medicinal and economic interest.[40] In time, he also established trade links with merchants as far away as Nepal, who would send him valuable plants. Some of these were unknown to the fakirs, leading him to start experimenting on local patients with compounds he himself produced. 'Monsieur Noguest [a French missionary suffering from leprosy] did not want to take the remedy that I wanted to give him', he complains to Delavigne. 'I had sent it to him after having successfully tried it out on a man from the country festered with ulcers. Indeed, I have treated a number of others to observe the different effects of this remedy.'[41]

L'Empereur organized his descriptions in a standardized format, starting with a physical description of each plant, its roots, flower, fruit, and seed, its habitat, and finally its properties and uses. But not all the plants were medicinal. Some were dyes, others aromatics, while a few had no apparent use at all. Some were even exotic—like the papaya, chili, custard apple and potato—introduced from South America in the sixteenth century by the Portuguese. However, L'Empereur, like other Europeans, did not distinguish between local and exotic varieties: he gives the distinct impression that they form part of the region's traditional flora. This is certainly not because they were not aware of plant transfer, as they themselves were involved in moving flora around the Indian Ocean—if not from the Americas to Asia. Instead, their purpose was to catalogue the *indigenous uses* of the plants in each region. The fact that within a century these new additions to the local fauna had already found therapeutic and economic uses is an

[39] MEP, V 990, f. 533: L'Empereur to Delavigne, 6 January 1701.

[40] MNHN, LP, GGA/52766/1: L'Empereur to Antoine de Jussieu, 25 December 1729.

[41] MEP, V 957, f. 153: L'Empereur to Delavigne, 20 January 1699.

interesting indication of the dynamism of the region's own specialized communities.

While collecting medical texts and plants, L'Empereur also set about employing local artists to draw and paint each plant, with its flowers and fruits, and a cross-sectional representation of the seeds at the bottom. Chandernagore being a major trading port, tens of thousands of Asian merchants, interpreters, bankers, and craftsmen worked for the European export market.[42] Many were painters who earned their livelihood executing floral designs on the painted cloth that formed one of the main Indian exports to Europe. L'Empereur thus found it 'easy to get natives to draw the plants. The paper and other materials cost a lot more.'[43] The 725 paintings on double folio sheets, pasted on separate slips, were finally bound into twelve volumes.

As the above account suggests, the *Jardin de Lorixa* is not a translation of indigenous texts in a purely linguistic sense. Furthermore, it differs from Indian palm-leaf *materia medica* in that the latter do not describe the plants, but enumerate their properties and uses and, above all, contain no illustrations. There was, of course, an established tradition, since the late sixteenth century, of illustrating natural history memoirs and albums for the South Asian nobility. The floral borders and stylized plant representations from these very soon found their way into a number of pictorial arts, from cloth printing and wall paintings to illustrations of popular tales and religious epics, but not into medical practitioners' *vade mecum*s.[44]

The typically Indian style of the paintings and L'Empereur's own claims to having simply translated Oriya works notwithstanding, the

[42] See Monique Dussolin, 'Etude d'un groupe social: les Européens à Chandernagor, 1ère moitié du XVIIIe siècle', unpublished dissertation maîtrise, Université de Paris VII, 1971, pp. 60–90, especially pp. 67–8.

[43] MNHN, LP: GGA/52766/1: L'Empereur to Antoine de Jussieu, 25 December 1729.

[44] For further details on illustrated palm-leaf manuscripts, see Jeremiah P. Losty, *Krishna. A Hindu Vision of God: Scenes from the Life of Krishna Illustrated in Orissan and Other Eastern Indian Manuscripts in the British Library* (London: The British Library, 1980); and John Guy, *Palm-Leaf and Paper: Illustrated Manuscripts of India and Southeast Asia* (Melbourne: National Gallery of Victoria, 1982).

Jardin is also a recognizably European botanical work in its general organization and presentation: it is a hybrid work containing a number of disparate elements reconfigured into a new homogeneity. Of course, L'Empereur was no medical neophyte and knew the conventions of European medico-botanical treatises, but, as remarked upon earlier, there was a substantial corpus of such works that had been produced in Asia and it would be interesting to examine the relationship of the *Jardin* with this corpus.

The *Jardin de Lorixa* and the *Hortus Malabaricus*

The most obvious candidate is Van Reede's renowned *Hortus Malabaricus*, the last volume of which appeared just a few years before L'Empereur embarked on his own scheme. In addition to their remarkably similar formats and number of plant descriptions, they bear an uncanny resemblance in a number of other ways.

The first similarity concerns the heterogeneity of the agents involved in their construction. Like L'Empereur, Van Reede employed several different specialists—a council of at least four physicians from the Malabar coast to supervise the collection of plants, help identify them and provide information on their medicinal uses, local arboriculturists and gardeners, a Luso-Indian translator, and a team of Dutch draftsmen. In the Preface to Volume 3 of the *Hortus Malabaricus*, a volume dedicated to the Raja of Cochin, he describes the construction of his herbal:

> By my orders, Brahmin and other physicians made lists of the best known and most frequently occurring plants in their languages. On this basis, others classified the plants according to the season in which they attracted notice for their leaves or flowers or fruit. This seasonal catalogue was then given to experts in plants, who were entrusted, in groups of three, with the collection of the plants with their leaves, flowers, and fruit, for which they even climbed the highest tops of trees. Three or four draftsmen, who stayed with me in a convenient place, would accurately depict the living plants as the collectors brought them. To these pictures a description was added, nearly always in my presence.[45]

[45] Van Reede, *Hortus Indicus Malabaricus*, vol. 3 (1682), p. viii.

The descriptions were then translated from the numerous local languages and dialects into Portuguese by a Luso-Indian interpreter, Emanuel Carneiro, and finally rendered into Latin, the language in which the work was ultimately published.[46] In Holland the descriptions were appended to engravings derived from the original ink-and-wash drawings of the plants and published in twelve volumes between 1678 and 1693. In order to lend credibility to the whole work, Van Reede included declarations engraved in their original scripts from each of the principal indigenous physicians and the Luso-Indian translator, testifying to the veracity of their respective contributions.

The *Hortus Malabaricus* also contains two other engravings executed in Holland: Van Reede's portrait and a frontispiece. This portrays a vast tropical garden, in the centre of which stands an ornamental summer house with two caryatids bearing an entablature whose tympanum is inscribed with the title of the work. In the foreground, beneath an arched pergola, sits the (apocryphal) goddess of Indian botany, holding a rake with a pruning knife at her feet, while four kneeling Malayali cherubs on the left offer her a potted tree.

At first sight, this engraving looks very different from the painted frontispiece of the *Jardin de Lorixa*. Any similarity seems to stop at the way the plants and human groups are placed in both: the central potted tree, the Malayali cherubs/group of artists, the goddess of botany/fakir, all under a pergola/an arch made by two flowering trees, a classical summer house/Greco-Roman ruin. However, on turning to the woman carrying plants in a basket on her head, we discover that she is a replica of the left caryatid of the summer house in the *Hortus Malabaricus*. L'Empereur's artists clearly had access to this work, but they tell a very different story from the allegory imagined by the Dutch engravers sitting in faraway Holland. In the same way as the caryatid carrying a sheaf of corn is brought to life as a real woman carrying in the plants to be painted and described, so too do all the other figures of the *Hortus* take on a real existence as the different actors involved in the making of the *Jardin*. The kneeling Malayali cherubs are metamorphosed into artists; the goddess into a fakir wielding his palm-leaf manuscripts instead of a rake and a pruning knife; the pergola into

[46] For more details on the making of the *Hortus Malabaricus*, see Heniger, *op. cit.*, pp. 144–51.

Fig. 2: The frontispiece of van Reede's *Hortus Malabaricus.*

an arch formed by flowering trees, inspired from traditional Indian paintings and embroidery; and the ornamental summer house into a Greco-Roman ruin. The central tree is now planted in a Chinese pot—a witness to the lively intra-Asian trade—and serves to demarcate the different groups, the manual workers to the left and the 'cerebrals' to the right. Thus, L'Empereur, as the patron, finds himself in front of the ruin, just above the Brahmin.

A close examination of the *Hortus* further confirms that it provided the template for European botanical conventions. For it is important to note that while painting floral motifs was the main livelihood of Indian artists, their painted calicoes did not, and were not meant to, respect any botanical conventions. These required, for instance, that seeds be shown apart, whole and laterally dissected. Flowers were also to be shown separately and roots were to appear with the plant. Not only do the paintings in the *Jardin* respect these conventions, some of them are more or less directly inspired by the engravings of the *Hortus Malabaricus*: as, for example, the banana, the papaya and the

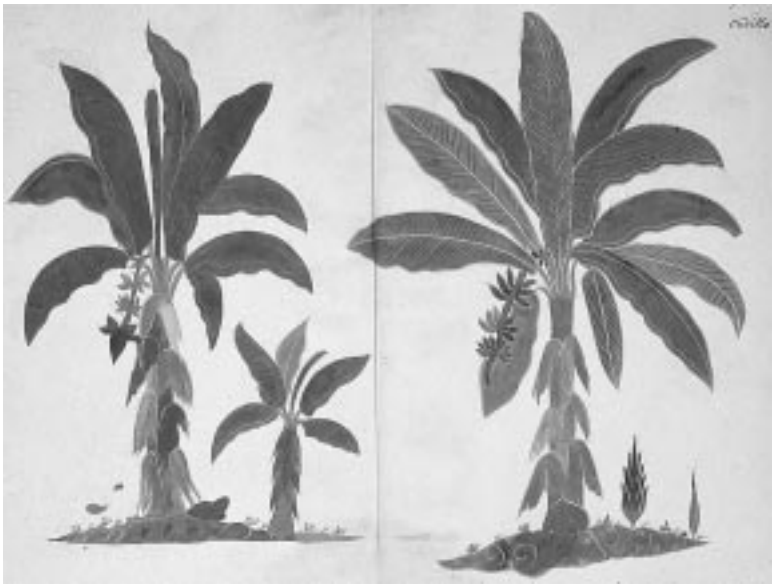

Fig. 3: The banana tree in the *Jardin de Lorixa.* © Bibliothèque Centrale, Muséum National d'Histoire Naturelle, Paris.

jackfruit.[47] This, however, does not mean that L'Empereur's artists mecha-nically copied the illustrations from the printed book: the very fact that they coloured their illustrations, getting the colours of all parts right each time—the *Hortus Malabaricus* was in black and white—removes all doubt on the matter. Indeed, the artist's hand knew how to render the variety and subtlety of these colours and to convert the engraver's hatching into colour variations. Besides, many like *Strychnos Nux Vomica* are very differently represented in the two works.[48] Moreover, the vast majority of the plants described respectively in the two works are different, given that they referred to two regions of different climes and over a thousand miles apart. Once the local artists had understood what was wanted of them, they could follow the drift without having to directly copy from a 'pattern-book'.

Fig. 4: The banana tree in the *Hortus Malabaricus*.
© Bibliothèque Centrale, Muséum National d'Histoire Naturelle, Paris.

[47] Cf. *Jardin de Lorixa*, vol. 3 (MNHN, Ms. 1917), plates 18, 19, 20, 21 and 22; *Hortus Malabaricus*, vol. 1, figures 12, 13, 14 and 15; vol. 3, figures 26, 27 and 28.

[48] Cf. *Jardin de Lorixa*, vol. 4 (MNHN, Ms. 1918), plate 9, and *Hortus Malabaricus*, vol. 1, figure 37.

Fig. 5: *Nux vomica* as represented in the *Jardin de Lorixa.*

This conforms to what is al-ready commonly known of the capacity of Indian weavers and painters to execute floral patterns shown them by their foreign clientele into the chintzes and palampores that formed the staple export of Bengal and the Coromandel coast in the period.[49]

[49] On the circulation of floral and scenic patterns between Europe and India, and their incorporation into Indian cloth painting, see M.K. Brett, 'Indian Painted and Dyed Cottons for the European Market', in Pratapaditya Pal, ed., *Aspects of Indian Art* (Leiden: E.J. Brill, 1972), pp. 167–71.

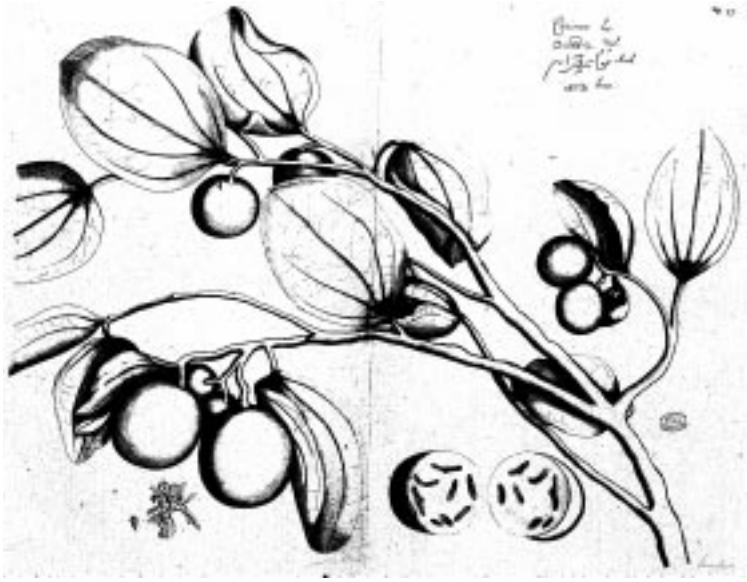

Fig. 6: Van Reede's representation of *Nux vomica.*

In this respect, it is interesting to note the similarity between the versatility of these artists and the engravers working for European publishing houses.

The verbal descriptions in the two herbals only loosely resemble each other in that they systematically describe the different parts of the plant, its flowers, fruit, seeds and roots, its habitus and habitat, before giving their properties and uses—by then a well established convention in European botany. L'Empereur, however, systematically gives the dimensions of each plant in feet and inches and his account of the properties and uses is markedly different from that of Van Reede. But the latter transcribes the local names of the plants in the Roman script and also gives both the Malayalam names, in the Aryaezuthu and Arabic scripts, and the Konkani names in Nagari; L'Empereur, as noted earlier, only records the local names he gathers (mostly, but not always, in Oriya) in the Latin script. And while the Frenchman borrows a hot/cold characterization of the plants from South Asian medical traditions, Van Reede evokes their effects on bodily humours.

Fig. 7: Early-eighteenth-century painted tent panel from eastern India with a floral pattern similar to the painted bedspreads that formed the staple export of the region to Europe.

Neither herbal gives the exact composition of remedies, stopping at a description of the uses to which the respective indigenous populations put the different parts of each plant. L'Empereur explicitly states that he 'do[es] not describe the dosage because they [Indian physicians] do not weigh the drugs. Only experience can teach one how to administer the medicines.'[50] Furthermore, while L'Empereur is a professional surgeon, Van Reede is a medical neophyte. Finally, while one uses French, obviously for his compatriots, the other publishes his work in Latin, the lingua franca of Europe's savant elites but a language Van Reede himself does not master!

L'Empereur's *Jardin* Comes to Paris . . .

L'Empereur was confident of being suitably rewarded for his entrepreneurship. Already, in 1698, he had sent samples of his work to Paris with Delavigne, hoping he would find a suitable patron. The latter did not succeed in making much headway and, by 1701, L'Empereur's impatience was palpable. 'No one shall have my work unless I make a suitable profit from it', he wrote to Delavigne, informing him that he had started looking for alternative patronage: he was sending some samples of his work to a (mysterious) 'Monsieur Petit' in London and to his brother's friend in Dol, a retired canon who had once been tutor to the sons of Guy-Crescent Fagon (1638–1718), Louis XIV's personal physician and the head of the Jardin du Roi in Paris.[51] L'Empereur's indefatigable efforts did at some stage pay off. In 1719, through the good offices of the influential Abbé Jean-Paul Bignon (1662–1743), a member of the Académie des Sciences, editor of the *Journal des Savants*, and the King's librarian, L'Empereur received two gold medals, 'one of Louis XIV and the other of the Regent', as a token of royal patronage for the project and 'a promise to be suitably rewarded upon completing the work.'[52]

The flora was finally completed in 1725, and L'Empereur shipped it to the Académie des Sciences in Paris along with a wonder remedy for epilepsy. He was now 65 and eagerly looked forward to retiring on a sizeable reward. L'Empereur had lost his job with the Compagnie des

[50] MNHN, Ms. 1915: 'Avis au lecteur', f. IVv.

[51] MEP, V 990, f. 539: L'Empereur to Delavigne, 29 January 1701.

[52] CAOM, F^{5}A 19, ff. 83r–84v: L'Empereur to Abbé Raguet, 20 January 1727.

Indes, and had spent his every last penny on this gigantic work—so much so that he was reduced to bankruptcy and begging.[53] The volumes and remedy reached safely and were handed over for expert examination to Antoine de Jussieu, a member of the Académie, professor of botany at the Jardin du Roi, and the Compagnie des Indes's botanical expert. L'Empereur, however, received no acknowledgement, let alone material advantage. After a couple of unanswered letters to Jussieu,[54] he began complaining about the latter's behaviour to the directors of the Compagnie and to his numerous correspondents in Parisian high society—among others, Charles-François de Cisternay Du Fay (1698–1739) who was head of the Académie des Sciences and of the Jardin du Roi (1732–9), the Comte de Maurepas who was minister of the navy, the Abbé Bignon, and the Abbé Gilles-Bernard Raguet (1668–1748), ecclesiastical director of the Compagnie des Indes as well as Louis XV's personal confessor and geography teacher.[55] In 1733, the Compagnie reinstated L'Empereur as visitor of its godowns in Chandernagore, but, in spite of a number of intercessions on his behalf, Jussieu stubbornly refused to pay him his due, although he did admit that the various remedies were indeed effective.[56]

Nicolas L'Empereur died in anonymity in Chandernagore on 13 February 1742, aged 80, cared for to the last by his Bengali doctor, to whom he left part of his meagre savings.[57]

[53] CAOM, Colonies, C^2 74, ff. 45r–50v; also CAOM, F^5A 19, ff. 135r–137r: Pierre Christophe Lenoir to Abbé Raguet, 25 September 1728.

[54] Only a few of these letters have survived. See MNHN, LP, GGA/52766/1 & 2: L'Empereur to Jussieu, 25 December 1729 and 25 November 1733, respectively; and AS, Dossier Antoine de Jussieu, 'Extraits de la correspondance d'Antoine de Jussieu', f. 22.

[55] See CAOM, C^2 285, ff. 11r–12r: L'Empereur to the Directors of the Compagnie des Indes, 25 January 1737; F^5 19, ff. 83r–84v, 116r–117v, 140r–142v, 169r–171r, 161r–162r and 179r–180r: four letters from L'Empereur to the Abbé Raguet and two from Raguet to L'Empereur.

[56] CAOM, Inde, A102, pp.150–2: Letter, dated 21 January 1733, from the Directors of the Compagnie des Indes to the Chandernagore Council; F^5 19, ff. 179r–180v: Abbé Raguet to L'Empereur, 20 November 1730; and AN, Marine, B^2 307, f. 465r–v: Maurepas to Du Fay, 16 March 1739.

[57] CAOM, Inde, Notariat de Chandernagor, O 17 (1742) N° 39/13^e, unpaginated: declaration, dated 13 February 1742, by Nicolas L'Empereur of his debts before his death.

. . . and Gets Anonymized in the *Jardin du Roi*

Why the *Jardin de Lorixa* should have suffered a fate so different from that of the *Hortus Malabaricus* cannot be explained in terms of its contents or structure. Exotic herbals and pharmacopoeias were highly coveted as much for their use to naturalists and medics as for their commercial potential. By the eighteenth century, illustrated herbals had also made their place as prized items on the European art market. Personal animosity on the part of Jussieu, as L'Empereur seems to suggest, cannot entirely explain the *Jardin*'s failure.[58] A definitive answer to this intriguing question must await the discovery of Jussieu's full report on the *Jardin*. For the moment, one can only speculate in the light of circumstantial evidence.

At any rate, we can be certain that it was not out of disinterest for Asian flora that Jussieu was unmoved by the *Jardin de Lorixa*, for, as the botanical expert to the Compagnie des Indes, he was well aware of the Dutch monopoly over the European drug market, a monopoly which, by his own admission, 'they acquired by gaining a thorough knowledge of the natural history and uses of drugs in the lands they visit.' Consequently, if the French hoped to carve out a place on the drug market, they had to encourage the Compagnie's servants overseas to collect useful plants, 'send them for expertise to Paris', and eventually 'transplant the most useful of them in our newly founded colonies.'[59] Jussieu maintained a regular correspondence with Frenchmen in the East and even secretly sent a certain Jean-Claude Barbé (born *c.*1700) to botanize in Chandernagore in 1725! (Upon the latter's sudden death in 1729, L'Empereur rummaged through his affairs and was furious to discover Jussieu's duplicity.[60])

However, Jussieu seems to have thought that knowledge outside of Europe could be gained without expense and was not embedded in the larger economy. L'Empereur did not lose the opportunity to point out to him the folly of this assumption :

[58] CAOM, C^2 285, ff. 11r–12r: L'Empereur to the Directors of the Compagnie des Indes, 25 January 1737.

[59] MNHN, Jussieu manuscripts, Ms. 284: 'Mémoire pour Messieurs de la Compagnie des Indes', undated.

[60] MNHN, LP, GGA/52766/1: L'Empereur to Antoine de Jussieu, 25 December 1729, *Post scriptum*.

> With 1200 *livres*, a botanist cannot do much considering that food, clothing, wine at 30 *sous* a bottle, the local doctor, housing, servants, interpreters and other domestics, and presents cost a lot more. Moreover, your botanists come during the monsoons, the worst time to botanize. Besides, they have to learn the language and buy books from the natives.[61]

Nor was he the only one to remind Jussieu that, as in Europe, knowledge even in these remote parts was part of the larger economy: Barbé, too, wrote to let him know of the snares of botanizing in Asia: 'You asked me for the Indian spikenard, for cinnamon, cloves, and nutmeg. I assure you that although we might be closer to Ceylon and the Molucca Islands, these trees are as unknown, if not more, to us here as they are to you. It is not easy to acquire them because they are the jealously guarded prerogative of the Dutch.' And, in reply to a request from Jussieu for plants from South India, Pierre Christophe Lenoir, Governor of Pondicherry, wrote back explaining to him the intricacies of knowledge gathering and the need for local guidance.[62] The Asian world was as commercially organized and segmented as the European one. Jussieu, being ignorant of this, was not to make much headway in collecting nature at a distance in the East.

However, one of Jussieu's writings does throw direct light on his assessment of L'Empereur's herbal. '*Des avantages que nous pouvons tirer d'un commerce littéraire avec les botanistes etrangers*', a manuscript note most probably written in 1732, provides an interesting insight into Antoine de Jussieu's notion of the botanical enterprise. 'It is neither simple curiosity', he states,

> nor the desire to adorn one's garden with exotic and hitherto unknown plants that are the main reasons for corresponding with botanists abroad—no, if botany is to have any place in the progress of medicine and other arts, then it must be to establish comparisons between European flora and those sent by correspondents abroad. It is only thus that one can identify plants of the same type, know their uses in medicine and the arts, and finally improve the quality of the European flora.

According to Jussieu, it is this correspondence that helped establish that the Ipecacuanha was none other than the common violet, that the

[61] MNHN, LP, GGA/52766/1: L'Empereur to Jussieu, 25 December 1729.

[62] AS, 'Extraits de la correspondance d'Antoine de Jussieu', ff. 23, 24: letters from Barbé (27 December 1728) and Lenoir (10 January 1729).

'scammony is the turbith, these purgatives so much in use are nothing but imported bindweeds, and the plants from which Japanese paper is made are merely a species of white mulberry and althaea.'

Jussieu then goes on to give five practical examples to show the utility of such correspondence—the second being none other than that of Nicolas L'Empereur:

> The second letter, dated 20 January 1729, is from Mr L'Empereur, formerly surgeon at Chandernagore in the kingdom of Bengal. It contains a number of observations on the plants of that country drawn and painted by him in 12 folio volumes that he sent to the Academy and that are now with me. The observations are mainly on the uses in Bengal of most of the plants described in this collection, which is almost a corpus of medicine in this distant kingdom.
>
> However, an examination of the plants has led me to remark that most of those that grow there naturally and are, so to speak, wild, are to be found here among our vegetables which are cultivated and have thus developed a different taste.[63]

Surprisingly, Jussieu and L'Empereur concur on the performativity of botany, but what they mean by it is very different. For the former, knowledge of foreign flora was of interest only inasmuch as it helped compare foreign plants with local ones and thus establish concordances between them in order for France to find import substitutes and protect both its markets and powerful professional groups from Dutch competition. This was certainly not L'Empereur's purpose. His was a scheme, inspired from the Dutch model in the Indian Ocean, of gaining knowledge of regional pharmacopoeias in order to commodify them. At any rate, it was Jussieu who, as a senior civil servant and savant-expert in the network of French royal institutions, had the last word. He thus sounded the knell of the *Jardin de Lorixa*. Exiled from the world of certified knowledge, it lay in his personal library at the Jardin du Roi, before ending up as an anonymous, exotic curiosity in the Muséum's library in the course of the nineteenth century.

Conclusion

The L'Empereur corpus, as also the works of other Europeans in Asia, all throw considerable light on the triangular relationship between

[63] MNHN, Jussieu manuscripts, Ms. 1116, undated.

Europeans at large, their indigenous interlocutors, and their armchair metropolitan colleagues. These also bring out the relationship between knowledge practices and the broader economic and political context, and help illustrate some of the principal themes of this book.

Early-modern South Asia and the Indian Ocean turn out to be spaces in which knowledge was intellectually and socially constituted prior to European contact. The knowledge that circulated there was not some form of popular knowledge but the prerogative of discrete, well-defined groups. This was clearly acknowledged by Europeans both outside and inside Europe. L'Empereur's enterprise, as much as that of Van Reede and da Orta, thus consisted not in gathering information held by undifferentiated, autochthonous groups, but in *reconfiguring* and *constructing* knowledge, skills and specialized practices—for the regional, as much as for the European, knowledge markets.

Using the market metaphor here is not out of place: it is used by the actors themselves—L'Empereur himself refers to trade and profit as does Jussieu ('literary trade', for example). It brings to the fore the material and economic dimensions of knowledge formation and circulation. Science has so far been commonly presented as a special 'symbolic' economy distinct from other dimensions of human intercourse. Instead of freely circulating in an idyllic and seamless republic of letters, science in Europe, when observed from the vantage point of the Indian Ocean, moved in fragmented and bounded spaces conditioned by national political and economic interests, spaces shaped by different régimes of performativity within which alone can the meaningfulness of knowledge be determined.[64] L'Empereur's example and the others evoked here argue for an understanding of early-modern science as part of the market economy that partakes of the larger political economies of burgeoning nation-states, of early-modern mercantilism, and of nascent European colonialism.[65] It is only by considering

[64] Pierre Bourdieu, 'The Specificity of the Scientific Field and the Social Conditions of the Progress of Reason', *Social Science Information*, vol. 14, no. 6 (1975), pp. 19–47; Lorraine Daston, 'The Ideal and Reality of the Republic of Letters in the Enlightenment', *Science in Context*, vol. 4, no. 2 (1991), pp. 367–86. For the relationship between science, technology and the market, see Michel Callon, ed., *The Laws of the Market* (Oxford: Blackwell, 1998); and Dominique Pestre, *Science, argent et politique: Un essai d'interprétation* (Paris: INRA, 2003).

[65] This adds a material-economic dimension to Lorraine Daston's rather

it thus that we can begin to clarify the complex nexus between knowledge and power.

In addition, even more than L'Empereur's experience, that of da Orta, da Costa, Van Reede, Hermann, and Rumphius plead for studying knowledge construction in the Asian context not as an extension of its construction within Europe but as a phenomenon in its own right. Their experience brings to light the fact that these men gained their credibility not in providing information to European armchair savants, but by making and circulating knowledge through negotiations with local Asian groups. Each of them either published their work in Asia, as in the case of da Orta, or else, as in the case of Van Reede, Hermann, and Rumphius, made their name by circulating it in manuscript form within the Indian Ocean world, mainly through Batavia, without appealing to European metropolitan authority. Indeed, as Rumphius noted in the preface to his most major work, the *Herbarium Amboinense* (made between 1663 and 1697), he undertook it for the 'use and service to those who live in the East-Indies', a work that was not published in printed form in Europe until the mid-eighteenth century.[66]

The change in historiographical perspective attempted here thus makes it possible to begin to look at the site of knowledge production itself and ask what the dynamics of knowledge making sets in motion there. As we have seen, the translation from South Asian vernaculars to a European language was only one of the many translations that L'Empereur's enterprise involved. Indeed, L'Empereur's exercise was one that consisted in translating a motley of medical, religious, econo-

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abstract list of moral-cultural values of science that she thinks ought to be closely examined by science studies in her 'The Moral Economy of Science', in Arnold Thackray, ed., *Constructing Knowledge in the History of Science*, *Osiris* (2nd series), vol. 10 (Chicago: University of Chicago Press, 1995), pp. 2–26.

[66] Georg Eberhard Rumpf, *Herbarium amboinense: plurimas conplectens arbores, frutices, herbas, plantas terrestres & aquaticas, quae in Amboina et adjacentibus reperiuntur insulis . . . Omnia . . . belgice conscripsit Georg. Everhard Rumphius . . . Nunc primum in lucem edidit, & in latinum sermonem vertit Joannes Burmannus . . . qui varia adjecit synonyma, suasque observationes . . .*, 6 volumes (Amsterdam, 1741–50). The citation is from in E.M. Beekman's Introduction to Georgius Everhardus Rumphius, *The Ambonese Curiosity Cabinet* (New Haven & London: Yale University Press, 1999), p. lxxxi.

mic, social, and cultural skills and practices through a series of complex and contingent negotiations into a single work that obeyed no single pre-set idiom.[67] And, if L'Empereur failed to make it at the far end of the chain—in France—he did succeed at the near end, in South Asia, in pulling together and maintaining a complex network of savants, merchants, missionaries, and craftsmen. Indeed, his enterprise, like that of other Europeans, was to have a long-term effect on the local communities with which they interacted. Indigenous painters were to find natural history drawing and painting an increasingly lucrative business for the European market throughout the eighteenth century and were to start specializing in this art form. At first they did this on an individual basis, but with the British colonization of Bengal and the Coromandel coast a few decades later, a whole institutional space was to open up with the founding of botanical gardens and the various natural historical and geographical surveys. Indian painters and draftsmen were now employed on a massive scale in these colonial institutions for executing maps, landscapes, and some of the great herbals of the late eighteenth and early nineteenth centuries.[68] Likewise, European naturalists were to start finding employment in South Asian princely courts to set up botanical and medicinal gardens.[69] Finally, this intercultural interaction certainly had long-term effects on the dynamics of medical and botanical practices in the region itself. Although difficult to apprehend, these would certainly repay working out and would be a valuable contribution to the history of Indian medicine.

[67] Translation in this sense bears a definite resemblance to its use in present-day actor-network theory. See Michel Callon, 'Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St. Brieuc Bay', in John Law, ed., *Power, Action and Belief: A New Sociology of Knowledge?* (London: Routledge and Kegan Paul, 1986), pp. 196–233.

[68] See 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*, 3 volumes (London, 1795–1820); and Henry J. Noltie, *Indian Botanical Drawings 1793–1868 from the Royal Botanic Garden* (Edinburgh: Royal Botanic Garden, 1999).

[69] For instance, Johann Gerhard Koenig (1728–85), a student of Linnaeus, made his name as a botanist in the service of the Nawab of Arcot in South India, before being employed by the EIC.