Introduction

A Singular Remedy

What commerce [...] for the people that are the sole proprietors of the most powerful remedy that medicine possesses to restore the health of mankind in the four corners of the Earth.

– Francisco José de Caldas, Memoria sobre el estado de las quinas, 1809.

By the late 1700s and early 1800s, cinchona bark was, to many, ‘the most important, and the most usual remedy that medicine possessed’.¹

Though of limited repertoire – cinchona trees prospered only on the precipitous eastern slopes of the Andes at the time, in the Spanish American Viceregalities of Peru and New Granada – and comparatively recent acceptance into Old World materia medica, the bark had, by the turn of the eighteenth century, woven itself into the texture of everyday medical practice in a wide range of societies within, or tied to, the Atlantic World. It was everywhere attributed ‘wonderful’,² ‘singular’,³ even ‘divine’⁴ medicinal virtues, the knowledge of which, so it was said, had come to mankind from its simplest, and humblest, specimens, ‘wild Indians’⁵ close to nature and privy to its most coveted secrets.

Bittersweet ‘febrifugal lemonades’ and bottled wines of the bark sat on the shelves of Lima apothecaries, the counters of Cantonese market

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¹ Luis de Rieux, ‘Carta a Miguel Cayetano de Soler,’ Archivo General de Indias, Indiferente 1557, Aranjuez, 1800-05-14, 346 v.
⁴ Simon André Tissot, Aviso al pueblo acerca de su salud ó Tratado de las enfermedades mas frecuentes de las gentes del campo, trans. Juan Galisteo y Xiorro (Madrid: Imprenta de Pedro Marin, 1790), 161.
stands and in the medicine chests of Luanda hospital orderlies. They were routinely concocted, and administered at the bedside, by Moroccan court physicians, French housewives and slave healers alike and they accompanied, tucked into their pouches, Peruvian soldiers to febrile environs, Dutch sailors to the battlefield and North American settlers westward. Scottish physicians, creole botanists and French writers alike were unanimous not only in according the bark ‘singularity’, and ‘the first place among the most effective remedies’ (die erste Stelle unter den wirksamsten Arzneimitteln), but also in holding it to be ‘more generally useful to mankind than any in the materia medica’. It was commonly agreed upon that there was ‘no febrifuge of such well-known virtue in all of medicine’ (por que no se halla en la Medicina febrífugo de virtud tan conocida), and that not a single remedy ‘more estimable and precious [than the bark] had been discovered unto this day’.

For decades now, historians of science, medicine and technology have insisted on the epistemological lesson that science and knowledge are the result of specific circumstances and close, local settings, situated and bound ‘ineluctably to the conditions of their production’ – historically contingent, idiosyncratic ‘form[s] of practice’, rooted in a particular time and place. The field is at present said to be in the midst of a fundamental turn toward global approaches that straddle traditional spatial boundaries but, as some of its most prominent advocates have cautioned, practitioners have hardly begun to understand the consequences of that shift for the field’s most basic values and principles, especially its

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6 Aylmer Bourke Lambert, *A description of the genus Cinchona, comprehending the various species of vegetables from which the Peruvian and other barks of a similar quality are taken* (London: B. and J. White, 1797), 1.
10 Hipólito Ruiz López, *Quinología O Tratado del Arbol de la Quina o Cascarilla, con su descripción y la de otras especies de quinos nuevamente descubiertas en el Perú, del modo de beneficiarla, de su elección, comercio, virtudes, y extracto elaborado von cortezas recientes* (Madrid: La viuda é hijo de Marín, 1792), 38.
emphasis on locality.12 This book is an attempt at writing a history of how medical knowledge – in the shape of matter, words and practices – was shared between and across a wide range of geographically disperse and socially diverse societies within the Atlantic World and its Asian entrepôts between 1751 and 1820. Centred on the Peruvian bark, or cinchona, it exposes and examines how that medicine and the imaginaries, therapeutic practices and medical understandings attendant to its consumption, were ‘part of the taken-for-granted understanding’13 of people in many different social and cultural contexts: at Peruvian academies and in Scottish households, on Louisiana plantations and in Moroccan court pharmacies alike. Much of the book is concerned with the conditions, contingency and idiosyncrasy of the prevalence and movement of bark knowledge – through contingent ‘act[s] of communication’,14 ‘brokerage’15 and sociality,16 ‘between […] settings’ tied together by Atlantic trade, proselytizing, and imperialism17 – as well as with the variability of the knowledge in motion. Indeed, the book suggests that cinchona’s widespread owed less to its utter immutability and consistency than, as historians have argued for other tools and substances, to a measure of malleability, and multivalence: its ability to ‘subtly adapt’, be refashioned, or tinkered with.18 Scholarship on modern and early modern

16 Marcy Norton has stressed the role that sustained, and persistent, exposure to substances, especially through social relationships and practices, played for their spread. Marcy Norton, ‘Tasting Empire: Chocolate and the European Internalization of Mesoamerican Aesthetics,’ The American Historical Review 111, no. 3 (2006).
globalization, with its liquid language of elusive flows and unconstrained circulation, still tends to evoke an idea of movement as erosive and antithetical to place, and of ‘the very idea of locality […] as a form of opposition or resistance to the […] global’, a gesture towards the discrete, and authentic. 19 It was in large measure the bark’s ability to tie itself to locales, however, to settle and become situated,20 again and again, that accounted for its prevalence and mobility. Science and knowledge are not bound to one time and place, this book holds. They may be unmoored and moved – become well known and generally useful elsewhere – but they will invariably do so in ways that are just as contingent, situated and local as those traditionally associated with their production.

The Outlines of Cinchona

It may appear redundant for the historical account of a plant component to further define the outlines of its object of study. The seeming definitional sharpness of cinchona is deceptive, however.21 Because the bark was, by the late 1700s and early 1800s, spoken of, sought after and studied in countless tongues across the Atlantic World and beyond, there were considerable shifts in its epistemic, chemical and medical contours, its nomenclature and, not least, its therapeutic indications. This is not to say that cinchona was not a distinct, identifiable object by the late 1700s and early 1800s.22 Indeed, though its passage into the wider Galenic medical repertoire during the late 1600s had been attended by


20 This responds in part to Kapil Raj’s question of how to tackle to the ‘concomitant situatedness and movement of science’. Raj, ‘Beyond Postcolonialism … and Postpositivism,’ 337–41.


22 Nappi, ‘Winter Worm, Summer Grass’.
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controversy over its nature, virtues and properties,23 by the late 1700s and early 1800s, medical practitioners, both lay and professional, across the Atlantic World generally agreed on the bark’s utility as a remedy and its coherence as a category.24 Rather, the very latitude and cosmopolitanism of the bark’s pathways entailed acts of adaptation, customizing and calibration, and, with them, a measure of variability and volatility that compels us to handle both the subject and the term, cinchona, advisedly, and with a measure of care.25 As much recent scholarship reminds us, objects exist both in space and in time. They have a diachronic quality; are possessed of lives and biographies;26 and accrete new meanings, names and properties, as they are identified, translated or ‘adjust […] to context’ in the process.27 They ought thus to be understood as malleable to a point: as multiple yet coherent, as liminal yet recognizable.28


As with other introduced exotic commodities – coffee, rhubarb or pineapple – by the late 1700s and early 1800s appellations for the bark across languages varied, if seldom beyond recognition. *Cinchona* was the standard botanical name for the bark after Carl Linnaeus (1707–1778) first defined the genus in the second, 1742 edition of his *Genera Plantarum*, naming it after the Countess of Chinchón, Francisca Fernández de Ribera, for her legendary and, by all accounts, imaginary role in drawing attention to the bark’s virtues sometime between 1632 and 1638. The bark also continued to be referred to by the older name of *quinquina* – from *Quina-Quina*, a Quechua word that actually referred to the balsam tree, and had been misapplied to cinchona by the Genoese physician Sebastianus Badus (fl. 1643–1676) in his 1663 *Anastasis Corticis Peruviae*. *Quinquina* persisted in various guises, coterminal with and alongside cinchona, particularly in French and Italian, into the early nineteenth century, while Spanish and Portuguese sources employed the shorter *quina*. German and Dutch texts, presumably onomatopoetically with the Iberian term, likewise referred in common parlance to *China* or *Chinarinde* – and *kina*, respectively, and to

31 Various historians have examined this early misapprehension: Jaramillo-Arango, ‘A critical review’; Haggis, ‘Fundamental Errors,’ 421–29.
34 See, for instance, Ruiz López, *Quinología*; Pedro Crespo Nolasco, ‘Carta apologética de la quina o cascarilla,’ *Mercurio Peruano (Lima)* 8 (1795 [1861]).
35 See, for instance, Jose Mariano Velloso, *Quinografia Portugueza ou Colleccao de varias memorias sobre vinte e duas especies de quinas, tendentes ao seu descobrimento nos vastos dominios do Brasil, copiada de varios authores modernos, enriquecida com cinco estampas de Quinas verdadeiras, quatro de falsas, e cinco de Balsameiras* (Lisboa: Impressor da Santa Igreja Patriarcal, 1799).
38 For references to ‘kina’ in Dutch sources, see, for instance, C. Terne, *Verhandelingen over de Vraage, in hoe verre zou men, by gebrek van de Apotheek, uit kelder en keuken de vereischte
cinchona in jargon. Some European languages possessed other alternate terms for cinchona, revolving around its provenance, medicinal properties or materiality. In English, for instance, its popularity allowed it to be known simply as the ‘bark’ or, owing to its supposed provenance, as the ‘Peruvian bark’. On account of its close association with the Jesuit order, particularly in earlier sources, it was also referred to as the ‘Jesuit’s bark’ or, since it was often available in the pulverized form, the ‘Jesuit’s powder’. Spanish sources, too, often spoke rather than of quina of cascara, a diminutive of the Spanish word for ‘tree bark’ (cascara), while German sources occasionally referred to it as Fieberrinde, that is, ‘fever bark’. Nomenclature maintained a measure of coherence and kinship even beyond these earlier consumer societies by virtue of linguistic relationships – translation equivalence, or onomatopoeia – references to geographical provenance, or therapeutic indications. Slavic, Turkish or Asian-language renderings in particular appear to have had onomatopoetic qualities. Eighteenth-century Chinese sources referred to ‘金鸡勒’ (‘chin-chi-lei’ in Wade-Giles, ‘jin ji lei’ in pinyin), for instance, Russian sources to ‘кин’ (khina), or ‘перуанская хина’ (peruanskaya khina), while in the Ottoman Empire the bark was referred to as ‘кна’ (kina), or ‘күшүр’-Peruviyane, a literal translation of ‘Peruvian bark’. Equations are, to be sure, fraught with difficulty, and these various terms were idiosyncratic and part of widely divergent epistemic systems. They were also, however, cognate appellations, fragments of discourse that reveal networks of production, threaded together by men and women from networks of production, mits uitzondere de volgende middelen, Kina, Kwik, Opium, Staal, Delfzuuren, Rhabarber en Ipecacoonna (Amsterdam: Petrus Conradi, 1788).

See, for instance, John Gray, William Arrot and Phil Miller, ‘An Account of the Peruvian or Jesuits Bark,’ Philosophical Transactions 40 (1737/38).


On practices of equation in the history of medicine, see Nappi, ‘Winter Worm, Summer Grass,’ 29–30.
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various world regions who had evidently long engaged with and relied upon one another—not only in apprehending that substance’s ‘admirable effects’ but also in crafting a name for it.

Significant, and growing, world market demand for the bark in the late 1700s and early 1800s—from buyers in Portuguese Luanda, at the Ottoman Porte and in the Archduchy of Austria alike—rendered cinchona’s botanical classification and demarcation both imperative and difficult. As with other plant-based medicinal substances of the period, there was considerable controversy not only over the boundary of cinchona via-à-vis other plants but also over the varieties cinchona was to encompass—the kinds and number of species that were to be contained in the genus *Cinchona*, to resort to the period’s botanical lexis. It was in particular the repeated removal to novel bark-growing regions in the Spanish American Viceroyalties of New Granada and Peru—on account of the bark’s worldwide appeal, and resultant overexploitation—and with it, the encounter with divergent varieties of cinchona, that distressed consumers, medical practitioners and naturalists alike.

The Spanish, British and French commercial quest for substitutes also yielded several South Asian, Filipino, and Caribbean cinchonas—from St Lucia, Saint Domingue, Guadeloupe and Martinique—that were subject to clinical trials and chemical analyses, but eventually, for the most part, discarded.

In 1805, as the result of a two-decades-long quest, two tree species supposed to be cinchona varieties—*Cinchona macrocarpa* and

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45 Note dated as of February 12, 1773, in ‘Varios Papeles pertencientes á la Quina del Péru,’ *Archivo del Palacio Real*, Papeles del Almacén de la Quina, Caja 22282 / Expediente Número 6, Madrid, 1773-02-12.

46 On the difficulties of identifying species of rhubarb, and determining which varieties were the ‘true rhubarb’, see Monahan, ‘Locating Rhubarb,’ 229.

47 In common parlance—the lexis of Spanish colonial officials, harvesters and Creole merchants—the term ‘species’ was also often applied to cinchona at large—‘the said species cinchona (la dicha especie de cascarilla).’ See, for instance, ‘Sobre el acopio de la Quina de los Montes de Loxa Callysalla y otros que la produzcan de buena calidad, y su envio a España de cuenta de la Rl. Hazienda,’ *Archivo Nacional de la Historia*, Quito, Fondo General, Serie Cascarilla, Caja 2, Expediente 5, Loja, 1779-08-19, f. 1.

48 For a detailed account of the removal from one harvest area to another, see Chapter 5.

The Outlines of Cinchona

_Cinchona pubescens_—were discovered on Portuguese territory in Rio de Janeiro.\(^{50}\) Other than to the general limitations of Linnaean taxonomy and the difficulty of examining live plant specimens,\(^{51}\) it was owing to the variation in properties\(^{52}\) (bark colour, taste and texture), presented by the proliferation of newly found cinchonas by the beginning of the nineteenth century, that caused contemporaries to continue to differ—in some measure, increasingly so—on how to delineate and group that plant. Opinions on the sheer quantity of extant cinchona species varied from author to author, from two to twenty-two.\(^{53}\) While the inner and outer botanical outlines of cinchona remained elusive, fragile and tenuous in the eyes of botanists from Uppsala to Santa Fé de Bogotá into the...
early nineteenth century, however, constant debate about its varieties also reified the idea of cinchona as a single object. As historians have argued for other plants, the very discussion of its instantiations – in continuously referencing the category they instantiate – also contributed to stabilizing and objectifying the bark as a recognizable thing.54

London physicians,55 creole bark merchants in the Viceroyalty of New Granada,56 and Chinese medical authors57 alike commonly circumscribed the bark’s identity in the late 1700s and early 1800s, like botanists, by virtue of its geographical provenance as well as its material properties – texture, taste, consistency and colour. Genuine cinchona was supposed to have the same shape as cinnamon; a rough, splintery and mealy texture; and to be of either white, pale-yellow, reddish or orange colour, according to species (FIGURE 0.1).58 When chewed, it was to be of a bitter, aromatic and astringent taste.59 In conjunction with the rise of clinical pharmacology, experimenters also began to define the bark chemically, through experiments and the testing of properties – its acidity, solubility in various solvents or reaction with other substances, particularly bodily fluids.60 At a time when simple clinical observations, experiences and statistics to evaluate treatments were gradually being introduced, doctors, botanists and surgeons in Madrid, Cartagena de Indias, London, Saint Domingue, New York, Rio de Janeiro or Lyon also increasingly conducted clinical trials – ‘exact, and repeated observations’, ‘by means of a general, extensive administration’ of the bark – among the populations of hospitals, slave plantations, or the military to

54 Nappi, ‘Surface Tension,’ 41.
57 Chao Hsüeh-min described cinchona as ‘consist[ing] of thin, hollow twigs’ that ‘resembled the drug yüan-chih, after one ha[d] removed from it the marrow’ and affirmed that ‘the taste [was] slightly acrid’. Cited in Unschuld, Medicine in China, 166.
58 William Buchanan advised his readership to learn to ‘distinguish’ ‘genuine’ barks from ‘false’ ones. William Buchanan, Domestic Medicine: Or, a treatise on the prevention and cure of diseases (London: W. Strahan, 1774), 169.
60 Chakraborti, ‘Empire and Alternatives,’ 89; Macle, Drugs on Trial, 8, 27; Klein and Lefèvre, Materials in Eighteenth-Century Science.