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To cite this article: Minakshi Menon (2022) What's in a name? William Jones, 'philological empiricism' and botanical knowledge making in eighteenth-century India, *South Asian History and Culture*, 13:1, 87-111, DOI: [10.1080/19472498.2022.2037826](https://doi.org/10.1080/19472498.2022.2037826)

To link to this article: <https://doi.org/10.1080/19472498.2022.2037826>



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Published online: 04 Apr 2022.



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What's in a name? William Jones, 'philological empiricism' and botanical knowledge making in eighteenth-century India

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ABSTRACT

'What is *Indian Spikenard*?', asked the eighteenth-century orientalist, Sir William Jones (1746–1794), in a famous paper, 'On the Spikenard of the Ancients,' published in *Asiatick Researches*, Volume II (1790). The question serves here as a point of entry into Jones's method for creating culturally specific plant descriptions to help locate Indian plants in their Indian milieu.

This paper discusses Jones's philological method for identifying the *jaṭāmāṁsī* of the Sanskrit verse lexicon, the *Amarakośa*, and *materia medica* texts, a flowering plant with important medicinal properties and great commercial value, as the 'Spikenard of the Ancients'. Philology, for Jones, was of a piece with language study and ethnology, and undergirded by observational practices based on trained seeing, marking a continuity between his philological and botanical knowledge making. The paper follows Jones through his textual and 'ethnographic' explorations, as he creates both a Linnaean plant-object – *Valeriana jatamansi* Jones – and a mode of plant description that encoded the 'native' experience associated with a much-desired therapeutic commodity. The result was a botanical identification that forced the *jaṭāmāṁsī* to travel across epistemologies and manifest itself as an object of colonial natural history. In the words of the medic and botanist, William Roxburgh (1751–1815), whose research on the spikenard is also discussed here, Jones's method achieved what 'mere botany' with its focus on the technical arrangement of plants could not do.

Keywords

British orientalism; Sanskrit; colonial botany; William Jones; Linnaeus; plant nomenclature

'What is *Indian Spikenard*?'

William Jones, 'On the Spikenard of the Ancients'¹

Introduction

In August 1787, four years after his arrival in India, the orientalist Sir William Jones wrote to his former pupil, the second Earl Spencer, about the pleasures of learning Sanskrit. He had begun a project, the translation of a Sanskrit 'vocabulary', with the help of a Brahmin, and a boy who understood English:

The Sanskrit dictionaries, the best of which is between 18 & 19 centuries old, are so arranged as to bring to my recollection The Blue Book, as we used to call Comenius's Visible World Displayed: like that, they are arranged according to the order of things, and, if they were illustrated with drawings, would be wonderfully useful. If the Blue Book, which we used, exists, let me request you to keep it: in a few years it will amuse & instruct little Althorp, as it did me at the same age, & his dear father after me: if it be lost, Elmsly can probably

procure another copy of it; but it will be nothing without the wood cuts, in which all the words are referred to things, & both are taught together. I have employed a Brahman and a Bengal boy, who understands English, to translate the Sanscrit vocabulary; and they have already brought me ten thousand words; but things are my great object; since it is my ambition to know India better than any other European knew it.²

That Sanskrit vocabulary, the *Amarakośa*, composed c. 500 C.E. by Amarasimha, a Buddhist, who may have been a minor poet, was indeed the best known of all the Sanskrit verse lexicons.³ A well-known resource for poets anxious to display their linguistic dexterity, it was also ritually invoked by composers of dictionaries eager to claim a venerable pedigree for their creations. Jones, engaged in examining Sanskrit dictionaries with a view to learning Sanskrit, was quick to grasp its importance.⁴ What is infinitely more interesting in the quote above, however, is not Jones's interest in the *Amara*, but the relationship he perceives between it and the *Orbis sensualium pictus*, the famous Latin and German primer composed by the seventeenth-century Moravian philosopher and pedagogue, Johann Amos Comenius (1592–1670), to teach children Latin while introducing them to the order of things in the world.⁵

The version of the primer that Jones refers to, the 'Visible World Displayed', was probably Charles Hoole's translation into English, *Visible World: or, A Nomenclature and Pictures, of all the Chief Things that are in the World, and of Men's Employments therein; In above 150 cuts*, first published in 1705.⁶ For Jones, the *Visible World's* woodcuts appear to be its principal virtue. A young student of Latin in Britain, unlike a young student learning Sanskrit in India, enjoyed the immense benefit of the pictures in the *Visible World*. Each word was firmly anchored to a single referent, often an object of nature, and impressed upon the memory through the power of pictorial representation. This was how Comenius wished to effect change in the teaching of Latin in the grammar schools, by bringing the study of nature into the classroom. But Jones's reference to Comenius tells us more than this.

Comenius was a well-known language projector, one of those seventeenth-century savants committed to the development of a universal philosophical language, by which they meant a language in which names (words) referred unambiguously to things. Such a language was to be erected on a basic vocabulary consisting of root words, from which other words were to be built and sentences constructed. Naming, in this way, was bound to classifying, to capturing the order of nature, where categories (names) fixed the essence of things. Michel Foucault, famously, called this 'essential nomination'.⁷ Establishing order in the seventeenth-century context was vital, given the social and economic transformations that presented an explosion of new objects to the senses. Creating taxonomic nomenclatures implied creating a language through which this historical process could be tamed, rationalized.

Creating a universal language was a particular preoccupation of the savants of the early Royal Society, prominently John Wilkins; but the process is thought to have waned in the eighteenth century.⁸ Instead, as is evident from the quote from Jones, the dream of capturing the essence of things through their names lived on in an age famous for its recognition of the arbitrariness of naming. Accompanying it was the constant concern with the progress of knowledge.

Watching Jones develop a method to fix the identity of the spikenard invites us to re-examine dominant narratives in the historiography of natural history and philology. The best known, perhaps, is Foucault's tale in *The Order of Things*, of epistemic breaks in *savoir* which organized shifts in *connaissance*. For Foucault, a mutation at the end of the eighteenth century marked an abrupt shift, in which a trio of the sciences of form – natural history, general grammar and wealth – turned into a nineteenth-century triad of *connaissances* – biology, philology and economics. Philology as a *name*, in this analytic, is associated with the practices of comparative grammar and the emergence of historicized languages in the nineteenth century.⁹

There are critiques aplenty of the Foucauldian *coupure*; and even an interlocutor as sympathetic as Ian Hacking is careful to note the difficulties of placing the eighteenth-nineteenth century epistemological break in the decades that Foucault does.¹⁰ But there *was* a break if not exactly as Foucault would have it; and a second one as well, which often goes unremarked except by

philologists recounting the history of their own discipline – the emergence in the nineteenth century, of techniques to produce critical editions of texts, known today as ‘Lachmann’s method’. The method, according to Glenn Most, ‘is genealogical and largely mechanical in nature, and aims at providing a standardized rational procedure for editing texts on the basis of multiple manuscripts.’ The aim of the method (*recensio*), was to establish the filiation of manuscripts – deciding which ones had been copied from which other ones – thus producing a genealogical stemma of transmission, which excluded direct copies.¹¹ With the creation of university disciplines, comparative grammar and Lachmann’s method were institutionalized and taught to students, while scholars used the method to create massive scholarly editions of classical texts.

For now, though, let us note that Jones and his botanical researches show us that philology, ‘the love of words’, was a term familiar to Enlightenment savants, who used it in several specialized senses. These were different from the meaning given to its nineteenth-century *avatar*; and reveal how the morphological preoccupations of eighteenth-century natural historians were intimately entwined with philology. That entwinement was the result of a process that Brian Ogilvie calls ‘the humanist invention of natural history’ during the Renaissance.

Though the connection between humanism and natural history is well known, Ogilvie draws our attention to the epistemological consequences of the humanist attention to particulars and details for medical humanism and botany – particularly botany. (Close attention to particulars was of course essential for philology.) In all these areas of inquiry, critical attention to texts moved from textual descriptions of natural objects to the objects themselves. Even so, studying plants was done to better understand classical texts rather than the other way round. Humanists strove to sort out the confusion of names produced by textual corruption, and the difficulties of describing plants in words. Ancient authors who had carefully recorded the medicinal properties of plants had not been too concerned about their forms. So, the Renaissance medical humanist, Niccolo Leonicensi (1428–1524), and his fellow humanist naturalists took a significant decision to make Dioscorides and his *De medica materia* the model for natural history. Leonicensi cared about things and he cared about words; or rather, he cared about words as keys with which to unlock the ancients’ knowledge of things. For him, as for other humanist naturalists, textual knowledge and experiential knowledge went hand-in-hand. Dioscorides could serve as a pattern for these naturalists because he was in harmony with their emphasis on ‘particulars, surfaces and descriptions, rather than essences or natures’, privileging descriptions of plants as individuals rather than treating them as exemplars for broader generic categories. It was thought that you could and should describe a plant in all its particularity, and with the same care evinced by philologists studying the shape of letters and words in a manuscript. This was the reason why, for Leonicensi, as Ogilvie notes, philology and science were part of the same enterprise.¹² For eighteenth-century naturalists, philology and morphology were also part of the same enterprise. The relationship, not always apparent because of overwhelming scholarly interest in Linnaean morphology, appears in stark relief in the practices of savants such as Jones, wrestling with the problems of identifying flora and fauna in unfamiliar colonial milieus.

I turn now to a second historiographical issue, Jones’s interest in learning Sanskrit.

Jones, a puisne judge of the British Supreme Court in Bengal, was engaged in learning Sanskrit as an aid to building the East India Company state in India. That act, learning Sanskrit, has received different explanatory glosses in historiographical treatments of Jones’s oeuvre. The most familiar one, celebrating Jones as the founder of the theory of Indo-European languages, credits him with having uncovered the structural affinities between Latin, Greek and Sanskrit, and presenting them to Europe’s literati in his *Third Anniversary Discourse*.¹³ A second explanation unites his language learning to his belief in the ultimate unity of all human phenomena, of men, of ideas, and of languages in the physical descent of the world’s peoples from the sons of Noah. Jones’s interest in Sanskrit and other Asiatic languages is interpreted as part of the evidence he uses to show the ethnological relations between the world’s peoples.¹⁴ Here, I take a slightly different approach.

This is an essay about words *and* things – and pictures. It addresses a moment in orientalist knowledge making in colonial India, in which an important orientalist savant insists on the importance of textual study for the making of knowledge useful to the colonial state. I show how Jones's search for the identity of the spikenard of classical sources, traced through its names in Greek, Sanskrit, Arabic, Persian and a number of vernacular Indian languages, worked to spatialize the Orient, and India within it, as connected spaces, as it simultaneously identified an object of value to British commerce. Though possessed of ten thousand Sanskrit *words*, it was *things* he was after. For how else could you grasp new worlds but by seizing the objects in them?

Jones and other East India Company savants, especially the medic and botanist, Dr. William Roxburgh (1751–1815), Superintendent of the Calcutta Botanic Garden for twenty years, devoted time, careful observation, and a great many words to unravelling the identity of the 'Indian Spikenard'. The plant in question, is known today as *Nardostachys jatamansi* (D. Don) DC, a drug used in modern Ayurvedic medicine, with a long presence in classical Ayurvedic *nighaṅṭuḥs* (lexicons).¹⁵ It was a sought-after commodity of the early modern English drug trade, as is evident from an analysis of Customs Rate Books from the seventeenth and eighteenth centuries.¹⁶ It is also an object of some current taxonomic confusion (of which more below).¹⁷

Here I examine the process through which Jones stabilized the *jaṭāmāṁsī* of Sanskrit sources as *Valeriana jatamansi*, the 'true' Indian Spikenard. A name associated with an herb that appears in the *Amarakośa* (*vanaūsadhi varga*) and the medical *nighaṅṭuḥs* as a list of synonyms, Jones forced the *jaṭāmāṁsī* to travel across time, space, and epistemologies and materialize itself as *Valeriana jatamansi* Jones, the plant-object named and classified through Linnaean categories, sought by colonial naturalists.¹⁸ My focus is on an essay little-read by scholars today but famous in its time, 'On the Spikenard of the Ancients', and a follow-up to it, 'Additional Remarks on the Spikenard of the Ancients', written and published by Jones while he was president of the *Asiatick Society*, and a companion piece by William Roxburgh, based on his manuscript plant descriptions, and the drawing that accompanied it.¹⁹

But before moving on to the essays a clarification is in order. The categories used in classical Ayurveda do not translate into European natural historical categories. Consider the following *sūtra* from Suśruta:

prāṇinām punarmūlam āhāro balavarṇaujasām ca sa ṣaṭsu raseṣvāyattaḥ rasāḥ punardravyāśrayaḥ dravyāṇi punar ośadhayaḥ/(sū. 1. 28)²⁰

What the author describes here is a hierarchical listing of relative dependencies, within which plants appear as *substances*, as remedies. Living creatures, we are told, their strength, complexion and energy are rooted in food. That food depends on the six flavours, which in turn depend on substance (*dravya*), itself dependent on medicinal herbs, of which there are two kinds, stationary and mobile.²¹ Briefly, then, plants according to the Ayurvedic episteme are remedies; or, as Francis Zimmermann might say, botany is caught within pharmacy – *dravyāṇi punar ośadhayaḥ*.²² But the matter neither begins nor ends there.

To grasp the epistemology at work, we need to understand the traditional 'Hindu' ecology of medicine and the larger system of which it was a part, a cosmology in which food and digestion are the basis of all human activities, and humans in their turn – as Kshatriyas are on the field of battle – constitute the material for sacrifice. This means, as Zimmermann explains, a system in which food, sacrifice, and the cycle of rebirths all belong to the same constellation of ideas. The householder, who keeps alive the *āhitāgni*, the hearth fire, analogically, feeds the *antaragni*, 'the digestive fire', making him prosperous and releasing him from disease, fit to perform the rites that will accord him deliverance.²³

The system, which includes Ayurveda, consists of a normative ecology, involving categories of soil – *jāṅgala* (dry land), *ānūpa* (marshy terrain), *sādhāraṇa* (middling land) – which communicate their savours to the animals and plants, which occupy them. An imagined physiology, in which fluids – *vāta*, *pitta*, *kapha* (wind, bile, phlegm) – circulate in the world, is accompanied by a

therapeutic ideal of balance between the humours and the savours of the soil, and the bodies permeated by them. What Zimmermann describes, as one reviewer noted, ‘is a huge combinative system of humours, savours and qualities, permutations of which produce hundreds of adjectives with technical meanings pertaining to the therapeutic and pathological properties of given medical substances.’²⁴ Hindu pharmaceutical taxonomy, then, produced a nomenclature of ‘species’ in the form of a ramifying system of names with an enormous network of semantic co-ordinates. A single plant could possess many names, each name adding something to the healer’s knowledge through the connotations of its several cognitive synonyms.²⁵

The *Amarakośa* worked much as Ayurvedic *nighaṅṭuhs* did, providing a series of such synonyms for the same object. The same synonyms for plants could appear both in the *Amarakośa*, and in medical texts. Poets, too, probably consulted medical *nighaṅṭus*, realism (*svabhāvokti*) in the description of natural phenomena being a perfectly appropriate poetic device according to Daṇḍin (7–8 century C.E.), one of the great ‘fathers’ of Sanskrit poetics.²⁶ Two of the synonyms for the *jaṭāmāṁsī* that appear in the *Amarakośa* (along with others that do not) can be found in the *Dhanvantarinighaṅṭuh*, for example in the one owned by H. T. Colebrooke.²⁷ Jones was assiduous in seeking out medical *nighaṅṭuhs*, for just this reason – he wanted to collect as many synonyms as possible for the same plant.

The epistemological work that had to be done to transform this overdetermined system of naming into one conforming to Linnaean rules, to make it yield to the observation and description of plant parts and especially fruit bodies, as those rules demanded, was enough to make the most accomplished orientalist wilt. It is to Jones’s credit that he chose a pragmatic strategy – reading along the grain of texts, whether literary or medical, to recover the meanings that actors attached to plants – to realize his goal of connecting name to thing. The gap persisted, nevertheless; and found expression in Jones’s colleague, H. T. Colebrooke’s pessimistic remarks, in the Preface to his translation of the *Amarakośa*, about the difficulties of stabilizing the Sanskrit names of plants and animals against natural historical nomenclature:

In regard to plants and animals and other objects of natural history, noticed in different chapters of this vocabulary, and especially in the 4th, 5th and 9th chapters of the 2nd book, it is proper to observe, that the ascertainment of them generally depends on the correctness of the corresponding vernacular names. The commentators seldom furnish any description or other means of ascertainment besides the current denomination in a provincial language . . . It must be therefore understood, that the correspondence of the Sanskrit names with the generic and specific names in Natural History is in many instances doubtful.²⁸

Zimmermann, reflecting on the cultural cost of the reduction that Colebrooke so desired, the loss of polysemy, recognizes what Colebrooke already knew by the early nineteenth century – the most common Sanskrit names had either passed into the vernacular or had vernacular equivalents:

In translating plant names, Latin binomials appear to be fundamentally mistaken, for a number of reasons, namely: they give a deceptive feeling of accurateness (whereas many a Sanskrit name allows for equivocal, competing identifications); they change the voice, the level of language, to a farfetched terminology (whereas the most common Sanskrit names have long passed into the vernacular); they are reducing, obscuring the fundamental fact of polysemy.²⁹

Jones valued that voice, the polysemy, as a portal into the culture, even as he engaged to close it.

II

Jones begins his essay, ‘On the Spikenard of the Ancients’ by gently mocking the rhetoric of the New Science and its preoccupation with ‘useful knowledge’, declaring that his question, ‘What is *Indian* Spikenard?’, while of no apparent *utility*, should be one readily answered in India.³⁰ The essay had a serious end in view, however, to insist on the importance of textual study for the making of botanical knowledge, and to propose a method for its use. As Roxburgh’s essay reiterates, Jones’s philological method held out the promise of answering a question, which the ‘merely botanical’

knowledge at his disposal could not; and which, if answered correctly (the question was as old as efforts by Matteoli, Dioscorides' commentator, to answer it), could be of *great* utility to a commercial corporation trafficking in natural commodities.³¹

The method itself, as already discussed, was based on eighteenth-century conceptions of philology that were different from the nineteenth-century developments in text-critical studies that have come to define what we think of today as the history of philology and philological practice. However, as Sebastiano Timpanaro pointed out, although the method was *codified* by Karl Lachmann (1793–1851), its techniques had been developed over time by the Renaissance humanists, and the New Testament scholars of the eighteenth century, and were included among the different practices associated with philology before the nineteenth century.³² They were known in Jones' time, but the technical aspects of philology were not what held his attention, although examples of his practices of emendation (*emendatio*), can be found scattered throughout his copies of Sanskrit texts.

Instead, his comments on philology reflect developments in eighteenth-century European philology, described by Glenn Most as 'the reasoned reappropriation of the materials offered by tradition'.³³ What that means is this: Enlightenment scholars attempted to place classical texts within their contexts, probing, with new interpretative techniques, for consistency of style, linguistic features, and the concordance of textual material with evidence from ancillary disciplines such as palaeography or numismatics, to establish the reliability of ancient witnesses; they attempted to systematize the large bodies of evidence available, producing catalogues raisonnés by the dozen; and most importantly, they historicized the notion of reason itself, when embarking on the conjectural emendation of texts.³⁴

Jones's writings, and his *Anniversary Discourses*, especially the *Third Discourse* with its suggestion that the characters in which Indian languages were originally written, and Indian sculpture and architecture be summoned to support textual evidence; and inquiries for information on the history of India from the members of the *Asiatick Society* in India and in Europe, show familiarity with such practices.³⁵ But his notion of historical philology was given a particular inflection by his colonial context. Colonial philologists understood Indian languages as a form of archive, which could yield precious cultural and civilizational details, even as those languages were understood to have developed historically over time.³⁶ Jones's attitude to such historicization was at once scholarly – he relished making discoveries about India's deep cultural history – and instrumental – understanding the etymologies of Sanskrit names of plants could assist their identification in strange surroundings.

I argue that for Jones, following the names of the spikenard across languages and regions, was a part of his commitment to conjuring the Orient and India as geographical spaces, as a first step to understanding the relationship between British colonizers and indigenes in India; as well as a methodology to understand unfamiliar representations of Indian plants. The acquisition of the languages, through which the 'evidence' produced through premodern notions of experience was manifested in texts, was a prerequisite for such knowledge-making. This came inflected through a reading of Locke, as I will explain, and an early statement, quoted below, on the role of education in developing human understanding.

For knowledge must certainly be acquired before it can be conveyed to others; the consequences of actions must be known, before the good can be selected from the evil; and the mind must be enlightened by an improvement of our natural reason, before a proper distinction can be made between the real and the apparent good. Now, as neither this knowledge can be perfectly obtained, nor the reason completely improved, in the short duration of human life, unless the accumulated experience and wisdom of all ages and all nations be added to that which we can gain by our own researches, it is necessary to understand the languages of the people who have been in any period of the world, distinguished by their superior knowledge; and that our own attainments may be made generally beneficial, we must be able to convey them to other nations, either in their respective dialects, or in some language which, from its peculiar excellence and utility, may be universal. It follows, therefore, that the more immediate object of education is, to learn the languages of celebrated nations, both ancient and modern.³⁷

In a key passage in a letter written in 1780 to Viscount Althorp, Jones uses the word ‘philology’ to describe both the study of languages and the study of manuscripts, neither of which was to be considered more than a means to an end:

I obtained access also to a fine manuscript in the royal library [in Paris], which has given me a more perfect acquaintance with the manners of the ancient Arabians; and how little soever I may value mere *philology* considered apart from the knowledge to which it leads, yet I shall ever set a high price on those branches of learning, which make us acquainted with the human species in all its varieties.³⁸

The last part of the sentence ties the study of languages and associated textual practices to the study of ethnology, of ‘the human species in all its varieties’, which Thomas Trautmann has called the ‘languages-and-nations’ project of eighteenth-century European thought. In this view, languages and nations were thought to be parallel, in that both were considered genealogically arranged, and linked. This meant that languages could be used to recover the lost history of the relations between nations. Language history was thus a tool for ethnological history; and what is today described as Jones’s ‘discovery’ of the Indo-European language family, was actually an effort by its author to reveal the genealogical relations between peoples, imagined as a branching tree of descent from the sons of Noah – a ‘Mosaic ethnology’.³⁹

For Jones, ‘philology’ was of a piece with language study and ethnology. Even a cursory reading of his *Anniversary Discourses* shows us that these two threads of his knowledge-making project are difficult to tease apart. The project was a particular expression of developments in eighteenth-century European philology, undergirded by observational practices, which marked the continuity between his philology and his botanical knowledge making.⁴⁰ Manuscripts, plants, and people were scrutinized in similar ways, with careful attention and judgement: was that an ā missing from his pandit’s spelling of *ābhāsvara*, in the section on heaven in the *Amarakośa*?⁴¹ Were the filaments of the *Bilva* distributed in five sets or were they perfectly distinct? And was the openness with which his Vaidya, Rāmalocana, taught him Sanskrit grammar a sign of a general phenomenon that Vaidyas, a physician caste in Bengal, were less hidebound than the Brahmins in dealing with Europeans?⁴²

Jones was keen on creating culturally specific plant descriptions that would locate and contextualize plants in their Indian milieu. This is evident in all his botanical essays, for example in the elegant description of the ‘*Oriental nauclea*’ (a misidentification – Jones is referring here to *Neolamarckia cadamba* (Roxb.) Bosser), in ‘Botanical Observations on Select Indian Plants’, where its Sanskrit names are linked to literary and mythological meanings, as markers of identity: ‘the poet CA’LIDA’S alludes to it by the name of Nipa; and it may justly be celebrated among the beauties of summer . . . [when it] exhibits a rich and singular appearance on the branchy trees decked with foliage charmingly verdant. The flowers have an odour, very agreeable in the open air, which the ancient *Indians* compared to the scent of new *wine*; and hence they called the plant *Halipriya*, or beloved by HALIN, that is, by the third RA’MA, who was evidently the BACCHUS of India.’⁴³

Or, again, the note he added to his description of the *Bilva* (*Crateva marmelos* L.), in ‘The Design of a Treatise on the Plants of India’:

Note: This fruit is called *Srīp’hala*, because it sprang, say the *Indian* poets, from the milk of *Srī*, the goddess of abundance, who bestowed it on mankind at the request of ISWARA, whence he alone wears a chaplet of *Bilva* flowers; to him only the *Hindus* offer them; and, when they see any of them fallen on the ground, they take them up with reverence, and carry them to his temple. From the first blossom of this plant that I could inspect, I had imagined, that it belonged to the same class with the *Durio*, because the filaments appeared to be distributed in five sets; but in all that I have since examined, they are perfectly distinct.⁴⁴

Such ‘insider’s’ knowledge, he reasoned, would lead to the identification of a plant and lay bare its properties, allowing a stable description to emerge, and, in turn, its corresponding generic and specific names. His theoretical framework was informed by John Locke’s philosophy of language,

easily tracked in the botanical essays.⁴⁵ Echoes of Locke appear in various places, perhaps most obviously in a trenchant statement in ‘Botanical Observations’ about the use of Sanskrit names of plants to assist communication:

Far am I from doubting the great importance of perfect *botanical descriptions*; for languages expire as nations decay, and the true sense of many appellatives in every dead language must be lost in a course of ages: but, as long as those appellatives remain understood, a travelling physician, who should wish to procure an *Arabian* or *Indian* plant, and, without asking for it by its learned or vulgar name, should hunt for it in the woods by its *botanical character*, would resemble a geographer, who, desiring to find his way in a foreign city or province, should never inquire by name for a street or town, but wait with his tables and instruments, for a proper occasion to determine its longitude and latitude.⁴⁶

Locke, of course, was similarly trenchant when reflecting on the imperfection of words. ‘To examine the perfection or imperfection of Words’, he wrote, ‘it is necessary first to consider their use and end: For as they are more or less fitted to attain that, so are they more or less perfect.’ ‘The chief End of Language in Communication being to be understood’, he continued, ‘Words serve not well for that end, neither in civil, nor philosophical Discourse, when any Word does not excite in the Hearer, the same *Idea* which it stands for in the Mind of the Speaker.’⁴⁷ Knowing the Sanskrit names of plants was one way to understand ideation among Hindu elites. Jones, like Locke, no simple empiricist, understood that the ideas we have of objects do not reveal everything about them. A colonial botanist aiming to produce a successful plant description as a way to procure plants in India would have to wield those names, and engage with the way lived experience was encoded in them.

A botanically-inclined European in India may have been able to identify, say, the Linnaean *Crateva Marmelos* had it been presented to him for inspection. Counting the stamens and examining its pistil, combined with a quick look into the *Species Plantarum* (1753), would have established its Linnaean Class and Order – *Dodecandria Monogynia* – and revealed that Linnaeus had described it in his *Flora Zeylanica* (1747), in which the diagnostic of the plant could perhaps be found.⁴⁸ As a tool for communication *beyond* the circle of botanists, however, the Linnaean name had no purchase at all; it could convey nothing to a native auditor.

A more fruitful strategy was to pursue the *idea* that Hindus had of the *Bilva* as an Object of their Understanding, the mind’s intellectual and cogitative part. Locke’s theory of the formation of ideas, widely debated in the seventeenth and eighteenth centuries, proposed that ideas, always objects of certain operations *within* the mind, were of two kinds, simple and complex. A simple idea, Locke suggests, forms when sense experience enters the Understanding; when an apple, say, is perceived to be red and solid, two simple ideas formed through sight and touch respectively, come together as one idea through the working of the power of the mind. When several simple ideas compound, they form a complex idea. Such ideation, the formation of complex objects in the mind, need not always involve things external to the Knowing Subject; they could also involve those formed as a result of reflection within the mind, involving feelings, or modes of experience formed through the imagination – the odour of the *Nipa* imagined as the scent of new wine – a faculty which Jones called ‘intuition’s keener glance’.⁴⁹ The mind could also place two ideas side-by-side, forming *relations* between them.⁵⁰ Jones’s explanation of one Sanskrit name for *Crateva Marmelos* L., draws upon the notion of such relations: ‘This fruit is called *Srīp’halā*,’, he writes, ‘because it sprang, say the Indian poets, from the milk of *Srī*, the goddess of abundance, who bestowed it on mankind at the request of ISWARA ...’ That relation appeared again in the practice of Hindus who collected the fallen flowers of the plant and carried it to *Īśvaraḥ*’s temple. Similar relations could be recovered from the synonyms for the plant given in the *Amara*, or the medical *nighantūḥ-s* – *bilvaḥ*, *śāṇḍilyaḥ*, *śailūṣaḥ*, *mālūraḥ* – each one helping to thicken the plant’s description.⁵¹

The new form of botanical description (Jones calls it a ‘method’) presented in ‘The Design of a Treatise’, and specifically intended for colonial botanists, gives the names of plants only in Sanskrit, with the Linnaean characters rendered in English (albeit in a disguised form), along with other information garnered from Sanskrit works. Both the vegetative and reproductive parts of the plant

went into its description, as did its medicinal qualities.⁵² The virtue of Jones's method lay in providing dense descriptions with which to communicate with native knowledge-bearers, while uniting it with an experimental history – for instance, he tested the mucus of the seed of the *Bilva* and found it to be a good cement.⁵³ Once accurately classed and described in the European manner, further description required resort to philology: 'their several *uses* in medicine, diet or manufacture may be collected, with the assistance of *Hindu* physicians, from the medical books in *Sanscrit*, and their accounts either disproved or established by repeated experiments, as fast as they can be made with exactness.'⁵⁴

III

But to return to those essays on the Spikenard: A couple of things strike us immediately when we read 'On the Spikenard of the Ancients'. The first is Jones's assurance in handling classical texts and his ease with humanist methods, signalled by the title of the essay itself. The second is the unexpected transformation of familiar Asian knowledge forms into unfamiliar European categories. To understand the second point, consider the puzzling reference to the seventeenth-century Persian pharmacology (*ilm al-adviya*) text, *Tuhfat al-Mū'minīn*, as the 'Dictionary of Natural History'.⁵⁵ The answer to the puzzle lies, one supposes, in Jones's awareness of the emergence of *historia* as a significant epistemic tool in early modern Europe. This was the case both in natural history and medicine, which had different intellectual objectives, but a shared understanding of *historia* as the knowledge and description of particulars, including description from direct observation.⁵⁶ Muḥammad Mu'min Ḥusaynī's text contained 940 entries on plants and products derived from plants, often based on the author's direct observation. That made it, regardless of its form, a source to be named a 'natural history'.⁵⁷ We see here, then, how an 'indigenous' knowledge form is translated into the substance of a colonial botany.

Reading a Persian pharmacological text as part of a method for tracking the spikenard, also had its origins in a humanist endeavour, with which any scholar trained in the classics (as was Jones) would have been familiar – efforts to restore the pristine knowledge, a *prisca botanica*, buried in the texts of classical antiquity, which had become corrupted over time.⁵⁸ Jones wrote both essays on the spikenard to interrogate Linnaean naming conventions through a display of textual and linguistic virtuosity, to insist on the importance of philology, and erudition in general, to knowledge making in the natural sciences. If the Renaissance humanists created a genealogy for natural history that began with Dioscorides and other medical writers, Jones added the great scholars of the Sanskrit, Arabic and Persian traditions to their number. But before turning to that a brief discussion of Linnaean naming protocols is necessary.

'A plant is completely named, if it is provided with a generic name and a specific one.'⁵⁹ This pithy statement about binomial nomenclature sums up the power of the Linnaean name. Its brevity allowed easy communication and memorization, a stable generic name stabilized a plant's identity, and it allowed the name to travel. But the binomial did not spring fully formed from Linnaeus' head; instead it emerged from the practices of recording plant names in different contexts, which have been studied and theorized by several scholars.⁶⁰

In the Linnaean system, plants which displayed the same structure of fructification, i.e., which had the same 'natural character', were united in a genus. And certain conventions went into deciding the name of such a genus. The ideal was a generic name that conveyed a distinct idea – one name to one idea – about the fruit body, as for instance *Tetracera* (four-horned), a genus in the Order *Dilleniaceae*, in which the four capsules are curved like horns. Or *Adenanthera*, with its roundish anthers that earned it the name, 'gland anther'.⁶¹ The relationship between name and plant, was explained by Linnaeus through a pleasing image: 'It is a distinguishing mark of a very good name that the plant should offer its hand to the name and the name should grasp the plant by the hand.'⁶² A favourite example followed: '*Helianthus*, or "*Flower of the Sun*." Who can see this plant in flower, whose great golden blossoms send out rays in every direction from the

circular disk, without admiring the handsome flower modelled on the Sun's shape? And as one admires, presently the name occurs to the mind, even as, if one sees only the name, the admired picture of the flower comes before one.⁶³ Such perfection, as Linnaeus was the first to admit, was seldom achieved, so 'that not one [name] in fifty . . . contains any essential character of the genus or attribute common to all the species comprised in it, so that any connection is secured.'⁶⁴ This was part of his defence against critics of his practice of naming genera after other botanists, or patrons of the science, which he pursued diligently, and of which more below.⁶⁵

Turning to Linnaean species names, we note that a species name was indissolubly linked to its generic name. Species naming began with a diagnostic or diagnostic phrase-name (*nomen specificum legitimum*), which sought, in twelve words or less, to capture the 'differentia', the differences which distinguished a species from all the others of the same genus.⁶⁶ Thus, if we were to seek a plant in the *Species Plantarum*, familiar to Jones by its Sanskrit name, *śephālikā*, it appears under *Diandria Monogynia* as 'NYCTANTHES caule tetragono, foliis ovatis acuminatis, pericarpis membranaceis compressis. *Fl. Zeyl.* 11.' (NYCTANTHES with a four-angled stem and oblong leaves terminating gradually in a point; and with semi-transparent and compressed ovary walls). The diagnostic phrase – its 'name' – distinguishes it from its congeners, while the reference to the *Flora Zeylanica* tells us where Linnaeus first enunciated it.⁶⁷ The problem with phrase-names was their length. They were difficult to memorize, writing them down consumed paper, and most importantly, they were subject to change with the discovery of new species. It took Linnaeus about ten years to replace the diagnostic with a proper nomenclature, during which he had resort to numbers for his species (*Flora Svecica*), and made a first assay at single epithets in *Gemmae arborum* and *Pan Suecicus*.⁶⁸ In the *Philosophia Botanica* he called these epithets trivial names ('nomen triviale'), but it was in the *Species Plantarum* (1753), that he explained that he had added trivial names in the margin opposite the diagnostic.⁶⁹ Referring back now to our example of the night-flowering jasmine, *Nyctanthes*, we note the addition of *arbor tristis* in italics in the margin, giving us a specific epithet, and together with the genus name, the binomial for the plant: *NYCTANTHES arbor tristis*.⁷⁰

In two perspicuous essays, Staffan Müller-Wille, has theorized the origins of binomial nomenclature in attempts to stabilize plants (and their names) as objects of exchange as they circulated in Europe; and explained the epistemic consequences of such activity as the facility that binomials afforded for the production of paper tools for data processing and exchange. Two sorts of movement are analysed in the essays. First, the practice of exchange of plants among specialized institutions, botanic gardens. Here, the Linnaean 'method' worked to stabilize plant identities by systematically recording the differences that arose when plants were exchanged among various European gardens. These differences, 'accidents' of situation or place were then bred out to arrive at plants that remained unaltered by further reproduction, giving their names the solidity of commonwealth coin. The Linnaean name thus became a 'rigid designatory relation established in exchange', sundered from peoples' social and cultural lives.⁷¹

Second, the binomial could be used as a label to designate a packet of data that could be inserted into lists, catalogues, tables, and other paper tools meant to collate botanical information. This made the addition of new names and the correction of others easy, allowing fresh information to travel fast. Müller-Wille, discussing the facility that Linnaean names brought to the collection of data in botany, notes that '[a] key element in this process was the fact that Linnaean names and taxa empowered naturalists who were situated in peripheral contexts or subaltern positions to build their own "paper empires"'.⁷²

In the rest of this essay I show that although empowered by their knowledge of Linnaean names and taxa, colonial botanists had their work cut out deploying their Linnaean tools to make sense of the blooming buzzing confusion of names and plants on the ground.

There was nothing easy about identifying or fixing Linnaean names to plants collected and studied in colonial contexts. The Linnaean method did not travel quite so smoothly. Jones's chase after the spikenard is a typical example of the preparatory work that had to be done by colonial botanists before a Linnaean diagnostic and binomial could be attached to a plant.

At its best, a Linnaean specific name would signify the essential character of a species, as in *Chrysosplenium oppositifolium*: 'The specific name must declare its own [particular] plant at first sight, since it contains the definition (257) that is *inscribed on the plant itself*'.⁷³ Where a species offered no clear aspect of number, shape, proportion or situation of plant parts for purposes of naming, Linnaeus resorted to non-essential particularities – a virtue, as in *Nerium antidysentericum*, or an aspect of location, *Nigella hispanica*. Finally, a name could honour a botanist who first discovered a plant, or a patron who assisted Linnaeus's botanical endeavours, as in *Tulipa gesneria* or *Musa cliffortiana* – a practice that earned Jones ire.⁷⁴

Naming plants after collaborators had the advantage of strengthening Linnaeus's social relations and expanding his authority within European botanical networks. But they could not convey any information at all about an unfamiliar plant, working only to recall the idea of a plant *already familiar* to botanists. Such names were less than useful if you were labouring to identify new plants in a new milieu, unsupported by extensive herbaria (*horti sicci*) or well-stocked gardens. Linnaean names were particularly ineffective in the tropics. Indeed, Linnaeus's unfamiliarity with the tropics was offered as a reason for the success of his science by the botanist, W. T. Stearn, who contended that the diversity and complexity of nature in the tropics would have prevented the construction of simple systems (like the sexual system) needed to precede more complex ones.⁷⁵

Jones' method, in contrast, was a form of what Gianna Pomata and Nancy Siraisi have called 'learned empiricism', a descriptive empiricism in which observational practices came together with philological skills.⁷⁶ And insofar as philology was understood as language learning and knowledge of languages, it was a method that took linguistic virtuosity as a necessary condition for natural knowledge making. I call this method 'philological empiricism', an erudition that permitted entry into others' linguistic worlds in order to intuit the ideas (in the Locke-ian sense), embedded in their descriptive practices. I include oral practice in this method, as Jones gives evidence of drawing on his pandits' memory and direct observation (conveyed verbally) as a way to orient his reading of texts.

What idea produced the Sanskrit name of the *śephālikā*? Exploring the etymology of the name with his pandits, while holding up the flower for their inspection, Jones was assured, unanimously, that 'the plant before us is their *Sép'hálicá*, thus named because bees are supposed to sleep on its blossoms.'⁷⁷ The homologation of native witnesses was not, in this instance, a satisfactory solution for textual polysemy – oral concordance and observation were at odds with textual information, since *śephālikā* was also a synonym for *nīlikā*, which should, in Jones' reckoning, have implied a blue colour (the flower on display would have had a white corolla).⁷⁸

The spikenard, unlike the *śephālikā*, was well known in classical sources, which identified its place of origin as India. Wrestling with the contemporary identities of plants mentioned in Greek and Latin manuscripts was part of the challenge faced by sixteenth century university-educated physicians in Europe interested in restoring a *pristina medicamenta*. The titles of both essays 'On the Spikenard of the Ancients' and 'Additional Remarks on the Spikenard of the Ancients' signal his familiarity with the work of medical humanists and their project, who when confronted with Greek and Latin names and descriptions of plants, resorted to a mix of philology and *autopsia* (seeing for oneself) to correct errors in grammar and observation made by their fellows in fixing the identities of those plants. Consider the example of the sixteenth-century physician Leonhart Fuchs, and Dioscorides's buglossom, as discussed by Sachiko Kusakawa.⁷⁹

Fuchs worked hard to legitimize his method of establishing a morphological match between an ancient plant and a contemporary one, as the correct identification of the medicinal virtues of plants was vital to the efficacy of ancient recipes, and his reputation as a physician who claimed to follow in Galen's footsteps. In his *Errata recentiorum medicorum* (the title echoed Niccolo Leonceno's *De Plinii*

et aliorum medicorum erroribus), he pointed out that the plant his contemporaries took to be Dioscorides's *buglossom* did not correspond to its ancient namesake in the description of its leaves. Fuchs repeated Dioscorides's description, noting its match with the contemporary *borago*, and that of the contemporary buglossom with the ancient *crission*. The first step on the path to error had been taken with a philological mistake, a faulty manuscript used by Pliny, in which the Greek words *macrotera* (larger) and *microtera* (smaller), differing by a single letter, had been confused, leading to a misrepresentation of the plant's leaf-size by later medical writers.⁸⁰ The morphological method he went on to propose was undergirded by pictorial evidence to correct such errors, but it required that scholars seeking to adjudicate competing opinions between ancient and contemporary authorities have prior sensory experience of the plants in dispute.⁸¹ Correcting philology by studying plant form only worked if the plants under scrutiny were thoroughly familiar to everyone. Jones wrote his essays on the spikenard to address just this conundrum, using the trope of error to explain why colonial botany required an orientalist method of botanical knowledge making, which could materialize a plant through rigorous philological study combined with careful observation (*autopsia*) of the plant *in situ*.

Jones sets the stage in the opening sentences of 'On the Spikenard of the Ancients', by rhetorically insisting that a determinate answer to the question, 'What is *Indian* Spikenard?' ought to be readily answered in India. The question is a feint, for the rest of the essay and its companion, 'Additional Remarks on the Spikenard', are vehicles to show that not just the spikenard but even the idea of India itself cannot be conjured without virtuoso philological practice. 'Additional Remarks' is particularly sharp in its comments about the looseness of the logic that the author, the naval surgeon Gilbert Blane, brings to his reading of Greek and Latin texts on both India's geography and the identity of the spikenard. It was doubtful, whether he was correct in identifying Gadosia or Mackran, provinces usually placed in Persia, as the western frontier of India, and which Arrian had identified as the source of the nard.⁸² Worse, the author had confused the use of the definite and indefinite article in Arrian's identification of the nard: 'for his words are a fragrant root of nard . . . where the omission of the definite articles implies rather a nard, than the nard, or the most celebrated species of it.'⁸³ And worst of all, he relied on Arrian, whom the judicious Strabo had remarked was a mere compiler; and one whose principal authority was Aristobulus, a narrator given to wondrous accounts of the riches of Arabia, placing the spikenard there along with myrrh, incense, and cinnamon.

Both essays are labyrinthine in their arguments. But an Ariadne's thread appears once we understand that Jones stays true to his reading of Locke in the essays. 'On the Spikenard of the Ancients' is written because the word itself conveys no distinct idea to a European seeking the plant in any language. The bewildering polysemy of the word, its appearance in Greek, Latin, Persian and Arabic requires forensic evidentiary reasoning, Jones shows, to make word and thing coincide. What at first reads as a rambling discourse on the appearance of the nard in different languages is a carefully constructed brief by a talented jurist, framing hypotheses and abandoning them, reporting others' observations but detecting error through philology, to close in on his object.⁸⁴ The reader is invited to enter into his chain of reasoning and judge the strength of the case made for the identity of the spikenard as a *Valeriana* – *Valeriana jatamansi*.

'Additional Remarks on the Spikenard' is written to rebut an essay published in *Philosophical Transactions*, the organ of the Royal Society, by Blane, making a case for spikenard as the product of the roots of a grass, a new species of *Andropogon*.⁸⁵ The urgency with which Jones deploys his philology and his use of Greek and Latin classics to refute Blane, insisting that the spikenard is an entire plant and not merely the roots of a grass, is evidence of the fraught nature of the enterprise. This was a moment in the development of European imperialism, in which botany and commerce were tightly knit together in the search for and marketing of new therapeutic commodities. The Spikenard essays, which could be read as pages of arcane phytographic detail, orientalist grist for the Jones biography mill, should instead be grasped as a sign of the pressure placed upon the East India Company state (and the savants associated with it) to outstrip its European rivals in the monetization of colonial natural knowledge.

The key point made in both essays, and supported by an avalanche of philological argument, is that the 'Indian Spikenard', the nard of the ancients, is *not* a grass as Blane and Sir Joseph Banks, the President of the Royal Society, who threw his weight behind Blane, maintained. What was the nard? A part of a plant? A compound medical unguent? It certainly had no clear botanical identity in Linnaean terms. Its name, familiar to Europeans from humanist texts and Biblical references, is not recognized by knowledgeable men in the part of the world from which it supposedly originates, India. To uncover the identity of the plant in India, 'it was necessary to know the *name* of the plant in some *Asiatick* language.'⁸⁶ There were several candidate names, clues to lead an inquirer to the plant in its native milieu.

The word *nard* was Persian. A loan-word into Hebrew, whose lexicographers mistook both the word and the thing it represented as 'Indian', Jones quotes a distich to display an initial source of confusion: 'A'n chu bikhesh, in chu nardest, an chu shákhest, in chu bår, A'n chu bíkhì páyidarest, in chu nardi páyidår'.⁸⁷ Making rhetorical use of the method of elimination – nard was neither root, fruit nor branch – he decides it must mean either stem or pith. Borrowed into Arabic, the word referred to a 'compound medicinal unguent'; while the Arabic word *sunbul*, meaning ear or spike, was substituted for the plant-part signified by *nard* in Persian. Jones's reasoning then turns to stabilizing the meaning of the Arabic *sunbul*.

[A]nd there can be no doubt, that by the *Sumbul* of *India* the *Muselmans* understand the same plant with the *nard* of Ptolemy and the *Nardostachys* or *Spikenard* of GALEN; who by the way was deceived by the dry specimens, which he had seen, and mistook them for *roots*.⁸⁸

This clarity, arrived at through philological empiricism and recounted over the next few pages, is a crucial step in Jones's identification of the Arabic *sunbul* with the Sanskrit *jatāmāṁsī*.

Descriptions of the spikenard in Dioscorides's *De Materia medica* (a 'living' text in eighteenth-century Europe) had formed the current idea of the spikenard among European savants; but the Greek description must be considered vague, Jones insists, if neither Linnaeus nor his disciples could class it with certainty.⁸⁹ Linnaeus was circumspect. He was inclined to think the spikenard of classical texts was a species of *Andropogon* (a grass), and placed it in his *Materia medica* among his polygamous plants, but with an expression of doubt.⁹⁰ Johann Gerhard König, the Linnaean disciple working in India, had described a sixth species of the nardus, a grass, but when asked by Jones confessed that 'he knew not what the Greek writers meant by the nard of India.'⁹¹ What was it about Dioscorides' description that lead Linnaeus to believe it could be a grass? The answer: the hazy notion of plant habit suggested by the use of the word 'spike' (which the ancients had never used with botanical precision), and tales of scented grasses in classical accounts. The European idea of the spikenard was based on an error born of the value attached to the texts of classical antiquity by humanists. Instead, other classical texts with other words and ideas were needed – those of Asia.

There was Abu'l Fazl's account of the *sunbul*, a plant with five leaves, each ten fingers long and three broad, which accorded well with the general idea of the Spikenard. The dimensions of the plant's flower as given by Akbar's historian, however, matched the European *Pandanus*, leading Jones to suspect that the true nard was the Sanskrit *Cétaca* or *Pandanus*. In a clever move, he translates Pehr Forskål's entry in *Flora Aegyptiaco-Arabica* for the *Keura odorifera*, suppressing the information that Forskål's plant was a *tree*, to allow the description to perfectly comport with European ideas of the nard. The description also alerts the reader that the Arabs who buy its spikes for their scent are interested in a commodity not a natural object. The hint given the reader is that the commodity-form could act to disguise the identity of the 'true' nard, but the spice market was nevertheless an important place to begin the hunt for it.

The *Pandanus* is an incomparable plant, and cultivated for its odour, which it breathes so richly, that one or two *Spikes*, in a situation rather humid, would be sufficient to diffuse an odoriferous air for a long time through a spacious apartment; so the natives in general are not solicitous about the living plants, *but purchase the Spikes at a great price*.⁹²

The gloriously-scented *Pandanus* of the Linnaeans, the Arabic *sunbul* and the Sanskrit Cétaka could all be the same plant, the ‘true’ nard of the ancients. But there was no way to tell without an examination of the entire plant. The essay shifts gear here, moving from plants to the uncertain terrain of natives who know about plants.

I have already referred to Jones’s efforts to conjure the Orient as an interconnected space through historical and philological analysis, while speculating on the links that joined the five principal Oriental peoples he described. In the *Third Anniversary Discourse* he describes ‘India’ on an enlarged scale as a trapezium, in which ‘the primitive religion and languages of the Hindus prevail . . . and in which the Nagari letters are still used with more or less deviation from their original form.’⁹³ That trapezium included the hills of Tibet, Kashmir, ‘and all the domains of the *Indoscythians*, the countries of *Nepal* and *Butant*, *Camrup* or *Asam*, together with *Siam*, *Ava*, *Racan*, and the bordering kingdoms, as far as the *China* of the *Hindus* or *Sin* of the *Arabian* geographers.’⁹⁴ Arabs and their country, divided from India by a vast ocean, were connected to it by navigation and commerce. Hindus, and the people of Yemen, as commercial nations, are imagined as the connected instruments that conveyed the gold, ivory and perfumes of India to the west. And evidence for such connection was given in their mutual knowledge of the names of objects of trade, such as a fragrant wood – *alluwwa* in Arabic, *aguru* in Sanskrit – in each culture.⁹⁵

Unsurprisingly, then, Jones’s first break came when an Arab of Mecca, seeing the flowers of the Cétaka in his study, informed him that the plant was extremely common in Arabia, where it was named Cádhi; ‘and several Mahomedans of rank and learning have since assured me, that the true name of the Indian Sumbul, was not Cétaka, but Jatámánsi.’⁹⁶

This was important information: ‘Finding therefore that the *Pandanus* was not peculiar to Hindustán, and considering, that the Sumbul of ABU’L FAZL differed from it in the precise number of leaves on the thyrus, in the colour and the season of flowering, though the length and breadth corresponded very nearly, I abandoned my first opinion, and began to enquire eagerly for the Jatámánsi . . .’⁹⁷

This paragraph marks a turning point in fixing name to thing. The observational details marking the differences between the two plants that Jones records, based on his conversation with his Arab informant, are actually less important than two other facts: the *Pandanus* was not peculiar to Hindustan; and the plant called ‘Sumbul’ had a Sanskrit name – ‘Jatámánsi’. It is from this point that we see him putting into practice an important part of his botanical method, giving Indian plants ‘their true Indian appellations’, usually their Sanskrit names.

It was clear to Jones that the noun *nard* did not occur in any Indian language. All the pandits he consulted assured him that nard was never used as a noun in Sanskrit, although it signified the root of a verb meaning ‘to sound’ or ‘to rustle’. Dr. James Anderson of Madras, meanwhile, who sent him a complete specimen of Blane’s *Andropogon nardus* mentioned that it was one of the most common grasses of the Coromandel coast, and offered, as well, a curious philological morsel: in the Tamil dictionary, Anderson explained, ‘most words beginning with *nár* have some relation to *fragrance*.’ He supplied Jones with several Tamil words beginning with *nár* – *nárukeradu*, to yield an odour, *nártum pillu*, lemongrass, *nártei*, citron, *nártum manum*, the wild orange tree, *nárum panei*, the *Indian Jasmine* – none of which appear to have persuaded Jones.⁹⁸ The *nard* of the Hebrews and Greeks, even the *copia narium* of Horace, Jones admits, may have been derived from an Indian root word: ‘to this I can only say, that I have not met with any such root in *Sanscrit*, the oldest polished language of *India*, and that in *Persian*, which has a *manifest* affinity with it, *nár* means a *pomegranate*, and *nárgil* (a word originally *Sanscrit*) a *cocoa-nut*, neither of which has any remarkable fragrance.’⁹⁹ The candidate name for the still unidentified plant-object would henceforth be the *jaṭāmānsī* of the *Amarakośa*, and it was with the *Amarakośa*’s list of synonyms in hand, all gesturing to locks of hair – *tapasvinī jaṭāmānsī jaṭilā lōmaśā misī* – that Jones would seek the elusive plant. Its botanical identity remained a mystery in the absence of an examination of its fresh flowers. It was possible, nevertheless, to confirm whether the *sunbul* and the *jaṭāmānsī* were indeed the same.

The nard's identity in the early modern Asian milieu was fixed by its status as a commodity, a valuable object of exchange both for its perfume and its therapeutic qualities. It was easily recognized in the bazaars of India in its dried state, a bundle of fibres resembling an 'ermine's tail', morphologically, a growing shoot surrounded by fibrous leaf bases. It was with the assistance of the dried specimen sold by druggists that Jones carried out a little experiment to confirm the identification of the *sunbul* with the *jaṭāmāṁsī*. He asked a 'Muselmán' physician to produce the 'sweet Sumbul', who promptly presented the same drug that his vaidya (Hindu physician) brought as an example of the *jaṭāmāṁsī*. 'A Brāhman of eminent learning gave me a parcel of the same sort, and told me that it was used in their sacrifices; that when fresh, it was exquisitely sweet . . .'¹⁰⁰

The fresh plant was a closely-guarded secret. One possible source for it was Bhutan, from where the plants could not be exported in the fresh state without a licence from the 'sovereign', the *Devarāja*.¹⁰¹ That man, an elected, secular regent and not a king, was probably aware of the significance of the fresh plant to European naturalists and merchants, and withheld it, though considerable quantities of the dried plant were brought into Bengal by the Bhutia caravans. The Bhutias, Jones noted, maintained a careful reserve when asked about it, 'and might be tempted, by the narrow spirit of monopoly, to mislead an inquirer for the fresh plant.'¹⁰²

A second possible source of the nard was Nepal, which with Bhutan was part of Jones's Indian trapezium, spaces where the Hindu religion and the Nāgarī letters flourished. It was from there that Jones requested his friend, a Mr. Law, who resided at Gaya, to procure fresh plants through the agency of Nepalese pilgrims, who, Jones reasoned, being orthodox Hindus, 'and possessing many rare books in the Sanscrit language, were more likely than the Butias to know the true Játamānsī, by which name they generally distinguish it.'¹⁰³ Many young plants were accordingly sent to Gaya, accompanied by a letter in Persian by a man of rank and literature, specifically naming them, 'so that no suspicion of deception or of error can be justly entertained.'¹⁰⁴ A gardener by mistake planted all of them in the garden of another friend at Gaya, a Mr. Burt, where they flowered; and Burt, 'in whose accuracy we may perfectly confide', sent Jones a drawing, on the basis of which Jones triumphantly presented a diagnosis 'in the Linnaean style', of the *Jatamansi* as a species of the Linnaean *Valeriana*: 'VALERIANA JATA'MA'NSI floribus triandris, follis cordatis quaternis, radicalibus petiolatus.'¹⁰⁵ But orthodox Hindus, and gentleman 'of rank and literature' could be mistaken (or lie). Figure 1 shows a true *Valeriana*, with its heart-shaped leaves, just as Jones described it, disproving Linnaeus's tentative identification of the *Nardus indica* as an *Andropogon*. You will notice, though, that the figure does not show the fibrous leaf bases, the distinguishing marker of the *Jatamansi* that generated its Sanskrit synonyms. This is where matters stood in April 1794 when Jones died . . .

IV

. . . And there they may have rested, if in November 1794, William Roxburgh, the Superintendent of the Calcutta Botanic Garden, had not obtained two small baskets of plants from A. Bruce, the British Commissioner at Cooch Bihar. The plants had been procured from Bhutan, and were planted, presumably in the Calcutta Botanic Garden, where they were closely observed by Roxburgh. He penned a clear description of them as they grew, which he linked to a figure he had had drawn. (Figure 2)

The Plants now received are growing in two small Baskets of earth; in each Basket there appears above the earth between 30, & 40 hairy, spike-like bodies but more justly compared to the tails of Ermines, or small Weasels; from the apex of each, or at least of the greater part of them there is a smooth lanceolate, or lanceolate oblong, Three-five-nerved, short petioled, acute, or obtuse slightly serrulate leaves (sic) or two, shooting forth. Figure 1 represents one of them in the above state. On gently removing the fibres, or hair, which surround the short petiols of these leaves, I find it consists of numerous sheaths the uppermost or inner one, two-three or more thereof, are entire, & have their fibres connected by a light-brown coloured membranaceous substance,

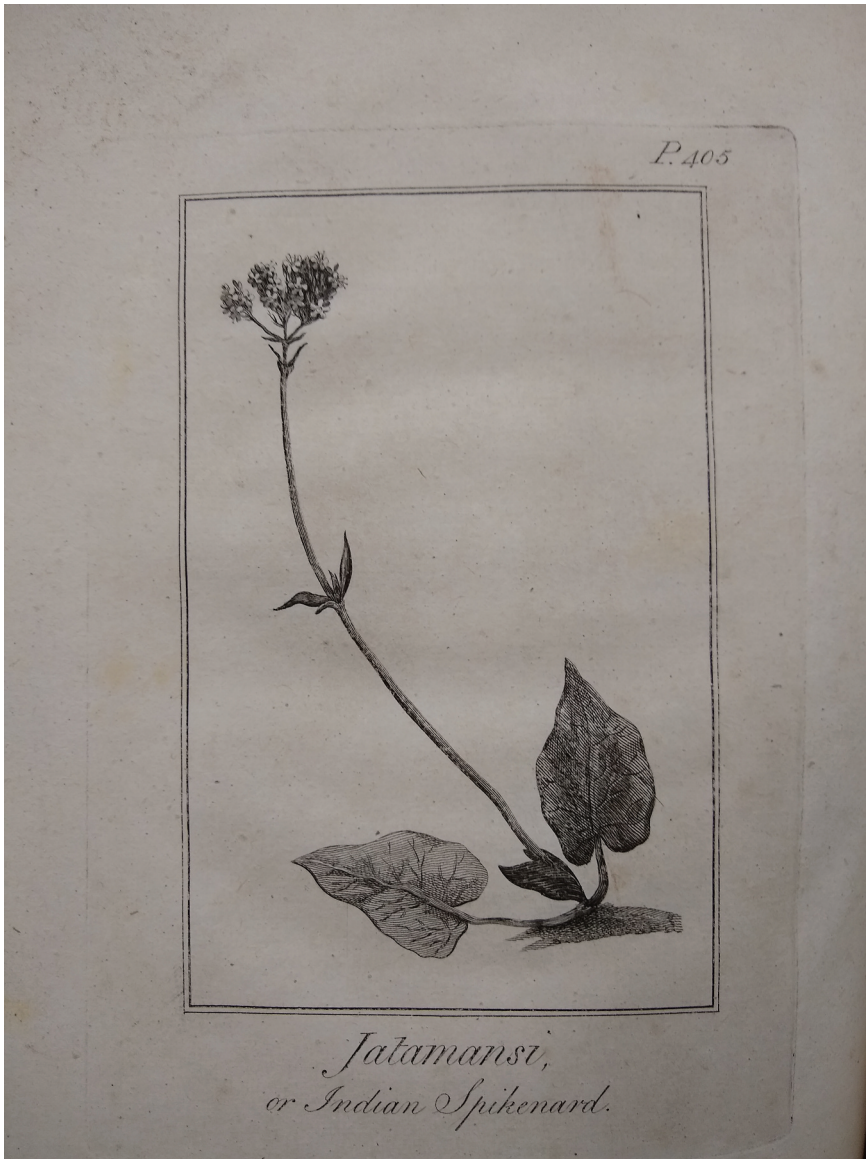


Figure 1. Lectotype of *Valeriana jatamansi* Jones. Engraving from *Asiatick Researches* (1790) (Calcutta edition) The figure shows a true *Valeriana* with heart-shaped leaves. It does not show the fibrous leaf bases, the distinguishing marker of the *Jatamansi*. The shading at the base of the leaves is a flourish added by the artist.

as at 6; but in the lower exterior sheaths where this connecting membrane is decay'd, the more durable hair like fibres remain distinct giving to the whole the appearance of an Ermines (sic) tail, this part as well as the root itself, are evidently perennial.¹⁰⁶

This paragraph from Roxburgh's manuscript plant descriptions is accompanied by a footnote, linking his observations to Jones's description. Roxburgh also repeated Jones's experiment of getting an indigene to procure the drug from a local apothecary:

The above described perennial hairy portion of the plant is clearly the Indian Spikenard of our shops, but whether the *Nardus* of the Ancients, or not, I leave to better judges to determine; however I believe, few will doubt it, having read Sir Wm Jones's desertations (sic) thereon, & comparing what he says with the accompanying drawings of the perennial hairy part of the stem of this plant which are taken from the living



Figure 2. *Valeriana jatamansi* Jones (watercolour on paper) Roxburgh No. 1017 William Roxburgh, *Flora Indica*. *Flora Indica* <http://apps.kew.org/floraindica> In this painting 'Fig 3' represents Roxburgh's 'cobbled-together monster', the roots and the spike-like body which resemble an 'ermine's tail', with the image of *Valeriana jatamansi* Jones added on top. Roxburgh's notes indicate that Fig. 3, the 'principal figure' and its description and definition are extracted from the engraving and description from Asiatic Researches Volume II (Figure 1 in this article), and the information conveyed to him by Burt. Figs. 1, 4 and 2 (above) are representations of what Roxburgh observed of the plants growing in the Calcutta Botanic Garden before they perished.

plants immediately under my eye. The drawing of the herbaceous or upper part of the plant is out of the question in determining the point, & only refers to the place the plant bears in our Botanical Books. While writing the above I desired on (sic) Hindoo servant to go & buy me from the apothecarys (sic) shop's (sic) a little *Jatamansi*; without saying more or less, he immediately went & brought me several pieces of the very identical drug I have been describing, a drawing of one of the pieces is represented at Fig. 4 . . . ¹⁰⁷

These notes may be the first description of a fresh specimen of the 'true' spikenard, known to botanists today as *Nardostachys jatamansi* (D. Don) DC. The description in the footnote comports well with the dried specimen, and an appropriate binomial may have been nigh, when a mishap occurred:

June 1795. – The whole of the above mentioned plants have perished, without producing followers (sic) notwithstanding every care that could possibly be taken of them, the principal figure in the drawing marked [Fig.3](#), & the following description; as well as the above definition are therefore chiefly extracted from the engraving, & description in the second volume of the *Asiatick Researches*, & from the information communicated to me by Mr. Burt, the gentleman who had charge of the plants that flowered at Gaya & who gave Sir William Jones the drawing and description thereof.¹⁰⁸

The ‘true’ spikenard, our thickening plant-object, had been under Roxburgh’s eye, and he had seen its leaves taking shape; but the plants having perished without bearing flowers, the botanist transferred a drawing of the leaves and flowers of the *Valeriana* from Jones’s engraving onto a representation of the dried herbaceous part of the *Nardostachys* plant, creating a cobbled-together monster that would, for at least another thirty years, mislead botanists and naturalists.

The tortuous later career of the *Valeriana*, the *Nardostachys*, and the status of Jones’s identification and naming of what he considered the ‘true’ *Jatamansi*, has been described at length by David Mabberley and Henry Noltie.¹⁰⁹ It is now established that two species of different genera were brought together and represented in [Figure 2](#) to bear the name *Valeriana jatamansi*. That name continues in use today to designate a medicinal plant of local importance in the Himalaya, for which [Figure 1](#) the engraving from Jones in the first Calcutta edition of the *Asiatick Researches* serves as the lectotype.¹¹⁰ Later, in 1830, the botanist De Candolle created the genus *Nardostachys* and coined the binomial *Nardostachys jatamansi*, for the ‘true’ *jatamansi*. He also added a second species to the genus, *Nardostachys grandiflora* DC, today treated as conspecific with *Nardostachys jatamansi*.

The conservation status of *Nardostachys jatamansi*, Mabberley and Noltie observe, is hampered both by confusion with *Valeriana jatamansi*, and the use of the name *Nardostachys grandiflora* in much of the conservation literature, ‘potentially leaving *N. jatamansi* unconsidered and unprotected from the point of view of physical – as opposed to nomenclatural – conservation.’¹¹¹ Bringing name and plant together today appears just as fraught as in Jones’s day, a process conducive to confusion while aiming at clarity.

Conclusion

‘What is *Indian Spikenard*?’ asked William Jones. His answer urged colonial naturalists to set aside their volumes of Linnaeus, and turn to the surest means of locating a plant in its Indian milieu – learn its name in a local language. The absurdity of doing otherwise, he pointed out, would be akin to a geographer in a strange city waiting with his tables and instruments for an occasion to determine its latitude and longitude, instead of asking a native for its name. Hunting the spikenard in India, however, proved more difficult than Jones’s orientalist prescription allowed. It meant following its entangled itinerary across Eurasia, as the name of the spikenard became a clue to the movements of peoples across Europe and Asia. Such spatialization merged language study and ethnology, not just in the production of a Mosaic ethnology, but as clues to the social and cultural connections between peoples, which produced reciprocal transfers of words and things. The Hindus and the Arabs, commercial peoples, may have met and exchanged knowledge of names and plants as they trawled the bazaars of the Indian Ocean world. Knowledge of the corresponding spread of scripts and texts was important to deciding the evidential weight to be placed on the testimony of their descendants.

The spikenard appeared in Greek texts, as Alexander’s soldiers marched across Asia and trod it underfoot on the borders of India. But where were the borders of India? And what did the Greek historian, Arrian, mean when he said the spikenard grew in Persia? The word *nard* was certainly Persian. It appeared in a dictionary of poetic phrases, the *Farhang-i Rashidi*, as well as in the pharmacological text, *Tuhfat al-Mū’minin*. The Arabic word for the plant-part designated by *nard* was *sunbul*, and under that name could be purchased in the bazaars of Yemen and Calcutta.

Sanskrit, famous for its polysemy, provided several synonyms. The verse lexicon, the *Amarakośa*, alone listed five: *tapasvinī jaṭāmānsī jaṭilā lōmaśā misī*. And then there were the references to it made by European botanists.

Linnaeus considered the spikenard a grass, a species of *Andropogon*; as did the Linnaean working in India, König. Back in Britain, the respected naval surgeon, Gilbert Blane, published an essay in the *Philosophical Transactions* identifying the *Nardus Indica* as the roots of a fragrant grass, which Joseph Banks went on to confirm as a species of *Andropogon*. It is in studying Jones's critique of Blane's essay that we best see the philological aspects of his method at work. It carefully united scrutiny of others' linguistic worlds, teasing out the forms of experience encoded in their descriptive practices, to observational modes that privileged trained seeing, *autopsia*, whether of orthography or plant-parts. I call this method 'philological empiricism'.

The importance of *autopsia* to the European knowledge-making collective of which Jones was a part, is driven home by William Roxburgh's experiments in the Calcutta Botanic Garden to grow and describe the Indian spikenard. Roxburgh deferred to Burt's drawing of the *Valeriana jatamansi*, even though he had actually had the 'true' *jatamansi* under his eye, and seen its leaves taking shape. He may have hesitated to conclude that the final shape of the leaves of the mature plant would be similar to the shape of the immature leaves he had seen – a change of place could certainly produce changes in plant habit. But more importantly, Burt had completed an observational exercise, he had brought an act of seeing with his own eyes to a successful conclusion, which Roxburgh had not. His description had therefore to prevail.

Notes

1. Jones, "On the Spikenard of the Ancients," 13–45, at 13 (emphasis original).
2. Jones to Earl Spencer, Crishna-nagar, 4–30 August 1787 in Cannon, *Letters*, Vol II, 751 (quotation from part of letter written on 17 August, emphasis original).
3. Vogel, *Indian Lexicography*, 310; and Deokar (with J-L Chevillard), "India and Tibet," 133–5.
4. I have not been able to trace the manuscript *Amarakośa* that Jones commissioned to aid his Sanskrit studies (which may be the one referred to in his letter to Spencer quoted above): "443. Amara Cosha, a Translation by Radhannath Pandit and Gaur Sancar Bos, Manuscript. ** Sir W. Jones caused this translation to be made to enable him to learn the Sanscrit Language." Evans, *Catalogue*, 19. He did go on to produce an interlinear translation of the *Amarakośa*: Jones, *Amara C'osha*. This manuscript is more thickly annotated than was Jones's wont, so it is very possibly the version that he consulted as he composed his botanical essays.
5. Joh. Amos Commenii, *Orbis sensualium pictus*.
6. Comenius & Charles Hoole, *Joh. Amos Commenii Orbis sensualium pictus*.
7. For a lucid survey of universal language projects as attempts to create taxonomic nomenclatures see Slaughter, *Universal Languages*. For a general survey of such projects to the beginning of the nineteenth century, see Knowlson, *Universal Language Schemes*. Foucault, *Order of Things*, 159.
8. Slaughter, especially chapters 6 and 7. For a brief examination of eighteenth-century developments, Knowlson, chapters 5 and 6.
9. See Foucault, *Order of Things*, especially chapter 7.
10. Hacking, "Night Thoughts".
11. Most, "Critical Edition," 176.
12. Ogilvie, *The Science of Describing*. The three paragraphs above are a much-reduced summary of chapter 3, 87–138, with the quote at 138. Also see Pomata and Siraisi, "Introduction," in *Historia* 1–38.
13. *Inter alia*, Cannon, *Life and Mind*.
14. Trautmann, *Aryans*; idem., *Languages and Nations*.
15. See, for example, IO San 1507 B, *Dhanvantarinighantuh*, f. 113. Also, Sharma and Sharma, *Dhanvantarinighantuh*, 98–99. This edition contains a useful introduction in English by P. V. Sharma on the history of Ayurvedic *nighantuh*s, and a Hindī translation of the text by G. P. Sharma.
16. Wallis, "Exotic Drugs and English Medicine," 20–46. See tables on 31, "Major Imports Ranked by Value" for the period 1566–1772; and on 43, "Appendix C: Annual Volumes Recorded of the Main Imported Drugs."
17. Mabblerley and Noltie, "A Note," 37–41.

18. The essays in *Entangled Itineraries*, edited by Pamela H. Smith, discuss how knowledge is in part made (and re-made) by the movement of materials, people and techniques, weaving in and out of “nodes of convergence”. They argue that the routes that materials, practices and knowledge take can be more significant than their originary forms. But see Smith, Chapter 1, 5–24.
19. Jones, “On the Spikenard of the Ancients”; Jones, “Additional Remarks on the Spikenard”; Roxburgh, “Botanical Observations on the Spikenard”; and Roxburgh, No. 910 *Valeriana jatamansi*. *Botanical Descriptions*, n. p.
20. Sharma, *Suśruta-Samhitā*, Volume I (*Sūtrasthāna*), 21.
21. I am indebted to Dominik Wujastyk for discussing the translation of this *sūtra* with me.
22. Zimmermann, *The Jungle*, 195–8.
23. “Systems” talk when discussing “Hindu” cosmology or Ayurvedic medicine, I am aware, compacts layered and differentiated cosmologies and social practices into totalizing, ahistorical wholes. I use Zimmermann’s analysis here for the light it sheds on the eighteenth-century Orientalist understanding of a text-based Hindu world. But see Mukharji, “Historicizing ‘Indian Systems of Knowledge’,” 228–48; and Arnold, “Plurality and Transition.”
24. Fields, “Review of Francis Zimmermann,” 332.
25. *Ibid.*
26. Bronner, “Sanskrit Poetics,” at 1245. Indeed, Zimmermann has pointed out that the *style* of both sorts of texts – poetry lexicons and medical *saṃhitās* – were similar, in that both employ the same taxonomies that appear in the different layers of Hindu cosmology. But see Zimmermann, *The Jungle*, 210–17.
27. IO San 1507 B, *Dhanvantarinighaṅṭuh*, f. 113.
28. Colebrooke, Preface, *Cósha*, 10–11.
29. Zimmermann, “Terminological Problems,” at 144.
30. Jones, “On the Spikenard of the Ancients,” 13.
31. Roxburgh, “Botanical Observations on the Spikenard,” 48.
32. See Timpanaro, *The Genesis*, “Introduction” and Chapter 7; and Most, “Editor’s Introduction,” 1–32, especially 9–12.
33. Most, “Classical Scholarship,” 742–57 at 743.
34. *Ibid.*; also Grafton, Chapter 9, *Defenders of the Text*, 214–43.
35. Jones, “Third Anniversary Discourse,” 76; and Yonge’s letter to Jones, December 20th, 1784, enclosing a paper on the “Heads of Enquiries to be made concerning the Antiquities of India,” read at a meeting of the Asiatic Society, November 10th, 1785. Chaudhuri, *Proceedings*, 63–66.
36. Mantena, *The Origins*, especially “Introduction” and Chapter 5.
37. Jones, “Plan of an Essay on Education,” in Teignmouth, Vol. I, 89–91, at 90. Emphasis added *Now ... researches*; the emphases that follow are original.
38. Jones to Althorp, Cannon, *Letters*, Vol. I, 441–3, at 442 (emphasis original).
39. Trautmann, *Languages and Nations*, 1–41; and *idem.*, *Aryans and British India*, especially Chapter 2, 28–61.
40. On the history of the development of observation as both epistemic category and scientific practice in Europe, see the essays in Daston and Lunbeck, *Histories of Scientific Observation*. Daston’s essay in the volume, “The Empire of Observation 1600–1800,” 81–113, explains how observation became both a learned practice and a form of knowledge in the eighteenth century. Elsewhere Daston and Most have argued that by shifting attention from *what* is studied to *how* it is studied, commonalities emerge among disciplines and intellectual traditions usually considered disparate. Their examples are philology and astronomy. Daston and Most, “History of Science and History of Philology.”
41. Jones, *Amara C’osha*, f. 2 v.
42. Jones, “The Design of a Treatise,” 9; Jones to Wilkins, 17 September 1785 Cannon, *Letters*, Vol. II, 682.
43. Jones, “Botanical Observations,” 90. Halin appears in Jones, *Amara C’osha*, opening section (heaven and gods) f. 6 (recto).
44. Jones, “The Design of a Treatise,” 9.
45. For a window onto Jones’s reading of Locke, see *Ethick Epistle*, especially lines 137–42. The *Ethick Epistle* was addressed by Jones to George John, second Earl Spencer, his pupil and close friend. Written in 1785, it was thought lost, until rediscovered among the Althorp papers in the British Library by Rosane Rocher, and published as “Sir William Jones as a Satirist: An Ethic Epistle to the Second Earl Spencer,” in *The Transactions of the Honourable Society of Cymmrodorion*, 2005. Secondary literature on Locke’s own interest in botany (he kept a herbarium) and its significance for his extensive discussions of the nature of species in Book III of *An Essay Concerning Human Understanding*, is scanty. But see Anstey and Harris, “Locke and botany”. The essay provides evidence from Locke’s correspondence to support the authors’ claim that Locke was *not* a species nominalist, a question broached in the intellectual milieu that Jones occupied.
46. Jones, “Botanical Observations,” 63. Interestingly, Jones first announced the appearance of this paper through a specimen for an Asiatick Commonplace Book, which he added to J. H. Harrington’s “The Plan of a Common-place Book”. Harrington’s remarks purported to amend Locke’s method for common-placing,

which Jones extended into a plan for a commonplace book for “Asiatic literature,” mostly referencing Indian plants, 251–6. For the importance of Locke’s method of indexing notes using headings sorted by initial consonant and vowel (which Jones copied), see Blair, *Too Much to Know*, 91–92.

47. Locke, *An Essay*, Book III, Chapter ix: lines 2–5 (476); and 33–36 (476–7). For Locke on language, see Guyer, “Locke’s Philosophy of Language”.
 48. Caroli Linnaei, *Species Plantarum*, t. 2, at 444; idem., *Flora Zeylanica*, 95. The current name for the plant is *Aegle marmelos* (L. Corréa (Rutaceae)). See Jarvis, *Order out of Chaos*, 456.
 49. Jones, *Ethick Epistle*, f. 8, line 138.
 50. Locke, *An Essay*. See Book II, Chapter II, I & 2:119–20 (simple ideas); Book II, Chapter XII, I& 2: 163–4 (complex ideas); and Book II, Chapter XXV, “Of Relation,” 319–24. For a discussion of Locke’s theory, see Chappell, “Locke’s Theory of Ideas”; and Woolhouse, “Locke’s Theory of Knowledge”.
 51. Jones, *Amara C’osha*, n. p.; Colebrooke, *C’osha*, 84; for additional names from the *Dhanvantarinighantuh*, see Sharma and Sharma, 35.
 52. Compare Jones’s “method” with the requirements for a *historia* of any animal, vegetable or mineral outlined in Linnaeus’s *Methodus* (1736). The differences are particularly sharp in the section on names. Linnaeus minimizes attention to philology and grammatical usage, especially in comparison to the methodological stipulations of pre-Linnaean botanists such as Conrad Gessner (1516–1565). For an English translation and discussion see Cain, “The Methodus of Linnaeus.”
- Lack of space prevents a discussion of Jones’s reasons for replacing Linnaeus’s Latin with less perspicuous English terminology. But see Menon, *Making Useful Knowledge*, 101–11.
53. I use experimental history here in Ursula Klein and Wolfgang Lefèvre’s sense, as a bridge between experimental philosophy and natural history. See Klein and Lefèvre, *Materials*, 26.
 54. Jones, “The Design of a Treatise,” 6–7.
 55. Jones, “On the Spikenard,” 18. Muhammad Mu’min Husaynī, *Tuhfat al-Mū’minīn*. I thank Shireen Hamza for reading the *Tuhfat*’s entry on the *sunbul* with me, and comparing it to Jones’ translation.
 56. Pomata and Siraisi, “Introduction,” in *Historia*, 1–38, at 3.
 57. Alakbarli and Hajieva, “Muhammad Mumin,” at 2.
 58. Ogilvie, *The Science of Describing*, 87–138, at 89. Also see Kusakawa, *Picturing the Book of Nature*, 101–23.
 59. Aphorism 256, *Linnaeus’ Philosophia Botanica*, 219. For a useful discussion of Linnaean naming see Larson, *Reason and Experience*, 122–42.
 60. Stearn, “The Preparation of the *Species Plantarum*,” in Linnaeus, *Species Plantarum*. Vol. I, 65–74; Koerner, *Linnaeus*, Chapter 2; Müller-Wille, “Joining Lapland and the Topinambes”; idem., “Nature as a Marketplace”; idem., “Names and Numbers”.
 61. Aphorism 240, *Linnaeus’ Philosophia Botanica*, 191.
 62. Aphorism 240, *The “Critica Botanica” of Linnaeus*, 79.
 63. *Ibid.*, 80.
 64. Aphorism 238, *The “Critica Botanica” of Linnaeus*, 61.
 65. *Ibid.*, 60–61.
 66. Aphorism 291, *Linnaeus’ Philosophia Botanica*, 246.
 67. Caroli Linnaei, *Species Plantarum*, t. I, 6.
 68. Larson, *Reason and Experience*, 132–3.
 69. Aphorism 257, *Linnaeus’ Philosophia Botanica*, 219–20; Caroli Linnaei, *Species Plantarum*, t. I, n. p. (*Lectori aequo* under TRIVIALIA).
 70. See note 67 above.
 71. Müller-Wille, “Nature as Market Place”.
 72. Müller-Wille, “Names and Numbers,” 119.
 73. Aphorism 258, *Linnaeus’ Philosophia Botanica*, 220 (italics original).
 74. Larson, *Reason and Experience*, 136; Jones, “The Design of a Treatise,” 3.
 75. Stearn, “Carl Linnaeus’s Acquaintance with Tropical Plants,” 777.
 76. Pomata and Siraisi, “Introduction,” *Historia*, 7–8.
 77. Jones, “Botanical Observations,” 72. For the etymology of *śephālikā*, see Thierry Deroin and Jinadasa Liyanaratne, “Plant Names,” 15 (supra) and n. 24.
 78. Jones does not cite a source for his assertion, but the synonym appears in the *Amara C’osha*, (unnumbered folio.); and, as well, in the *Śabdāsandarbhasindhu*, the dictionary that the pandit, Kāsinātha Tarkālaṅkāra, composed for him. See MS Sanskrit 98-II, 460 v. I have used this copy, originally made for H. T. Colebrooke.
 79. Kusakawa, *Picturing the Book of Nature*. What I give above is a much reduced and flattened version of the complicated argument presented in *ibid.*, 101–23.
 80. *Ibid.*, 102–3.
 81. *Ibid.*, 120.

82. Arab geographers sometimes conflated *Sind* with *al-Hind*, including Makrān, the westernmost part of *Sind*, in *al-Hind*. Makrān, known in classical sources as *Gedrosia*, was also included within “India” by Pliny the Elder. But see André Wink, *Al-Hind*, 132.
83. Jones, “Additional Remarks,” 37.
84. Jones, “On the Spikenard of the Ancients.”
85. Blane, “Account of the *Nardus Indica*”.
86. See note 84 above, 14.
87. *Ibid.*, 15. My thanks to Prashant Keshavmurthy for his email communication of 26/10/18: *Nard* is a common Persian noun for a tree’s “trunk”. The hemistich [Jones calls it a distich], referred to by Jones, is attested in Mullāh ‘Abd al-Rashid of Thattā’s famous 1654 dictionary of Persian poetic phrases, *Farhang-i Rashidi*, and was composed by ‘Usmān Mukhtārī Ghaznavi (d.ca.1159), a poet attached to the Ghaznavid court. The four lines, with the two Jones quotes in bold, are: O Lord whose virtue, pride, majesty and preciousness
Are like root and trunk and branch and fruit;
The first, like a root, swells with sap; the second, like a trunk, stands firm;
 The third, like a branch, burgeons with fruit; the fourth, like fruit, is nutrient-rich.
 ai khudāvandī ke fazl u fakhr u jāh u ‘azz-i tu
 ān chu bikh ast īn chu nard ast ān chu shākh ast īn chu bār
 ān chu bikh-i ābdār ast īn chu nard-i pāydār
 ān chu shākh-i bārdār ast īn chu bār-i māyadār
88. Jones, *ibid.*
89. See I, 7, *Nardostachys jatamansi* DC, *Patrinia scabiosifolia*, Fisch., Spikenard, in Pedanius Dioscorides of Anazarbus, *De materia medica*, 9–10.
90. Jones probably consulted either the fourth or fifth edition of Linnaeus’s *Materia medica*, published from Erlangen by his former student, Johann Schreber. I have used the fifth edition of 1787. See “620. ANDROPOGON *Nardus* . . . *Perennis, peregrina, dubia* . . .” Caroli a Linné, *Materia medica*, 264.
91. Jones, “On the Spikenard,” 14 (emphasis original); See NARDUS *Indica, Supplementum plantarum*, u 105.
92. Jones, “On the Spikenard” (Jones translates Forskål here), 16–17 (emphasis original); “69. KEURA,” *Flora Ægyptiaco-Arabica*, 172.
93. Jones, “Third Anniversary Discourse,” Chaudhuri, *Proceedings*, 74.
94. *Ibid.*
95. Jones, “Fourth Anniversary Discourse,” Chaudhuri, *Proceedings*, 87.
96. Jones, “On the Spikenard,” 17.
97. *Ibid.*, 17–18.
98. *Ibid.*, 26.
99. *Ibid.*, 27.
100. *Ibid.*, 19–20.
101. *Ibid.*, 22. Frederik Schröer, email communication 26/1/22: *Devarāja* or *Debraj* was the north Indian vernacularization of the Bhutanese title ‘*bruk sde srid*, literally meaning ‘regent [*sde srid*] of Bhutan [*“bruk yul”*]. He was the elected, secular authority of Bhutan’s dual system of secular and religious governance.
102. *Ibid.*
103. *Ibid.*, 23.
104. *Ibid.*
105. *Ibid.*, 29.
106. William Roxburgh, No. 910 *Valeriana jatamansi*, *Botanical Descriptions*.
107. *Ibid.* The drawing referenced here was the same or similar to the drawing of the plant, which accompanied Roxburgh’s essay in *Asiatick Researches*, Vol. IV, and reproduced here as Figure 2.
108. *Ibid.*
109. Mabblerley and Noltie, “A Note”.
110. The lectotype is the individual specimen to which the name of a species is attached by the botanist who publishes the name. But see Daston, “Type Specimens and Scientific Memory,” for a discussion of the type method.
111. Mabblerley and Noltie, “A Note,” 37.

Acknowledgments

My greatest debt is to Henry Noltie for many, many conversations on William Jones’s botanical nomenclature. Glenn Most generously guided me through the literature on European philology. V. Yamuna Devi carefully read several commentaries on the *Amarakośa* with me. An anonymous reviewer provided excellent critical comments. Versions of this paper were presented at the following fora: A joint workshop on ‘Therapeutic Commodities’ organized by the

Global History and Culture Centre (University of Warwick) and the Centre for Historical Studies (Jawaharlal Nehru University) in 2018; the Research Group Krause Lunch Colloquium at the MPIWG in 2020; the Science Across Regions in Asia Working Group, of the Consortium for History of Science, Technology and Medicine in 2021; and the colloquium led by Margrit Pernau at the Max Planck Institute for Social Development in 2022. I am grateful to all the organizers and participants for their questions, comments and help, especially Elena Aronova, Maria Avxentevskaya, Joslyn DeVinney, Florike Egmond, Anne Gerritsen, Eric Gurevitch, Shireen Hamza, Glenn Most, Margrit Pernau, Julia Reed, Frederik Schröer, Staffan Müller-Wille, Simon Schaffer and Charu Singh. The usual disclaimers apply.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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