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Translations in Green: Colonialism, Postcolonialism, and the Vegetal Turn

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ABSTRACT: This paper explores the coloniality of botany and its transnational genealogy by examining critical questions about agency of representation of botanical nomenclature. We use two examples—*Hortus Malabaricus* in the seventeenth century, and the Traditional Knowledge Digital Library (TKDL) from the twenty-first century—as bookends to examine the legacies of colonial botany. The *Hortus* is a comprehensive treatise developed by Hendrik van Rheede, the governor of Dutch Malabar, with the help of local botanists, doctors, and physicians. It remains one of the most comprehensive works on the flora of Asia and the tropics. The impetus for the *Hortus* was the desire for a catalogue of local plants so colonists could more efficiently extract the rich botanical resources in Asia. The TKDL is a digital repository of traditional knowledge of India. The impetus was to establish prior use of herbs and medicines in India and challenge global biopiracy of traditional Indian knowledge. Both the *Hortus* and the TKDL are repositories that respond to colonial regimes of power—the former for more efficient colonial extraction, and the latter to thwart it. Yet both are caught up in Western norms of botanical nomenclature. Drawing on feminist, postcolonial, and transnational studies, this paper examines the two moments to explore the enduring and shifting meanings of transnational colonial regimes of power.

Plant studies, or critical plant studies, is increasingly resonant in transdisciplinary and transnational conversations. Within a Western genealogy, animals and plants have been understood as being outside

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a Western understanding of biopower—as beings that are expendable, commodifiable, and killable.[1] As Western ideologies of hierarchies have been challenged, some chart a linear progression from animal studies to plant studies. Others trace a resolute human-centeredness, an entangled affirming of the "human" through animals and plants, albeit with different scales of significance.[2] The terms "human," "animal," and "plant" have gathered manifold meanings through decades of scholarship in critical race theory, while scholarship in feminist and queer studies, disability studies, animal studies, and postcolonial interventions has also engaged these terms in meaningful ways, raising especially critical questions about agency and representation. What is being represented when we speak of plants? What determines the logics of classifications among humans, animals, and plants? Who makes these nomenclatures and classifications? In histories of Western botany, the Swedish botanist and taxonomist Carl Linnaeus looms large. He developed a novel system of classification and nomenclature—a binomial (sexual) system with a genus and species name (for example, *Homo sapiens* for humans). Linnaeus left a legacy that continues to shape plant classification and nomenclature today.[3] The impetus to create a uniform and universal naming system traverses the pre-Linnaean *Hortus Malabaricus* and the thoroughly Linnaean nomenclature of TKDL. These questions are important because histories of scientific racism, colonialism, sexism, ableism, and myriad power regimes haunt our classificatory schemas of "human," "animal," and "plant."

We begin with broad strokes to coalesce seemingly disparate areas of inquiry (i.e., human, animal, plant) and center anew the role of language and translation in plant studies. While translation has always been central to global trade and transnational activisms, whether in the sale of manuscripts from around the world or cross-cultural solidarities, it has also received significant attention in plant studies in terms of the language of plants and whether they communicate through a biochemical sensorium. In fact, plant language—representation and translation—remains a central area of investigation in contemporary plant studies. In this article, we take plant studies to colonial and postcolonial arenas, and argue that the language of plants is always the practice of translation on myriad levels that are saturated and sedimented through histories and practices of colonialism and

1. Donna Haraway, *When Species Meet* (Minneapolis: U. Minnesota Press, 2008).

2. Jeffrey Nealon, *Plant Theory: Biopower and the Vegetal Life* (Stanford: Stanford U. Press, 2015).

3. Lisbet Koerner, *Linnaeus: Nature and Nation* (Harvard U. Press, 2001).

capitalism, specifically discernible through botanical nomenclature. Both historically and in contemporary times, botanical nomenclature remains the primary mode of plant classification—in scientific botany as well as in colonial and postcolonial societies. How do we know plants except through naming? How did botany, as a universal global science, universalize plant naming, and to what effect? Knowing the histories of botanical nomenclature and how they are used for colonial and capitalist interests throws invaluable light on methods that are used to study plants and how we can work towards feminist decolonial plant studies.

While feminist postcolonial analyses of capitalism and colonialism have unwrapped the specific power regimes that constitute "human" and "animal," we turn our attention in this paper to "plants" and their classifications and practices of translation that frame colonial and postcolonial botany. Our study of plant language here explores two cases—*Hortus Indicus Malabaricus* (henceforth *Hortus)* from the seventeenth century, and the Traditional Knowledge Digital Library (TKDL) from the twenty-first century—bookends of sorts to examine the legacies of colonial botany. What is striking but undertheorized in the science and technology studies (STS) literature is that the vegetal turn and recent moves to decolonize the sciences both rest fundamentally on practices of representation and translation—of plants and science. Plants in such an analysis emerge as more than photosynthesizing life forms, but come to stand in for colonial exploitation, conservation, nationalism, transnationalism, indigenous claims, commodification, capitalism, and anti-capitalism. Here we bring the tools of postcolonial feminist studies to re-narrate the history of botany through the *Hortus* and the TKDL. Though ostensibly set in India, both cases illuminate starkly the transnational roots of plant language.[4]

We delineate the contribution of this essay in three threads from recent scholarship. The first is what we call the vegetal or plant turn.[5] There is a plant revival afoot wherein the "plant" has emerged as a critical locus of ontological, epistemological, and representational

4. Marcena Gómez-Barris, *The Extractive Zone: Social Ecologies and Decolonial Perspectives* (Duke U. Press, 2017); Londa Schiebinger and Claudia Swan, eds., *Colonial Botany: Science, Commerce, and Politics in the Early Modern World* (U. Pennsylvania Press, 2007).

5. John C. Ryan, P. Vieira, and M. Gagliano, *The Mind of Plants: Narratives of Vegetal Intelligence* (Synergetic Press, 2021); Prudence Gibson, *The Plant Contract: Art's Return to Vegetal Life* Vol. 3 (Brill, 2018); M. Gagliano, J. C. Ryan, and P. Vieira, eds., *The Language of Plants: Science, Philosophy, Literature* (U. Minnesota Press, 2017); Luce Irigary and Michael Marder, *Through Vegetal Being: Two Philosophical Perspectives* (Columbia U. Press, 2016); Nealon, *Plant Theory* (above, n. 2); Michael Marder, *Plant-Thinking: A Philosophy of Vegetal Life* (Columbia U. Press, 2013).

claims. We are responding to a recent spate of interest in plants that some have argued "are quickly becoming the new animals."[6] The animal turn extends to animals what was once exclusively the province of the human—sentience, intelligence, ethics, feelings, sociality. The recent vegetal turn extends these claims: plants too should be given agency and understood as organisms with sentience, intelligence, feelings, and sociality.

Second, we draw on colonial and postcolonial STS. Was colonial Western science a hegemonic science? Postcolonial and Indigenous historians of science disabuse us of any such simple story. For example, in the case of India, historians of science argue that while colonialism indeed shaped and was shaped by colonization, the story is far more complex.[7] Unlike linear diffusion models[8] that imagined colonized countries as passive grounds for the imposition of a "superior" Western science and civilizational logics, India (and indeed all colonized countries) clashed and resisted.[9] Science in India appears to have progressed not through any wholesale imposition by the West, but through "negotiations" and "hybridization." Something more involved and complicated transpired. Historians of colonial science have, by now, amply demonstrated that we can no longer assert

6. Nealon, *Plant Theory* (above, n. 2), xiv.

7. Amit Prasad, *Science Studies Meets Colonialism* (John Wiley & Sons, 2022); Banu Subramaniam, *Holy Science: The Biopolitics of Hindu Nationalism* (U. Washington Press, 2019); Rajani Sudan, *The Alchemy of Empire: Abject Materials and the Technologies of Colonialism* (Fordham U. Press., 2016); Kapil Raj, *Relocating Modern Science: Circulation and the Construction of Knowledge in South Asia and Europe, 1650–1900* (Springer, 2007).

8. George Basalla, "The Spread of Western Science," *Science* 156 (1967): 611–22.

9. Dhruv Raina, "Reconfiguring the Center: The Structure of Scientific Exchanges between Colonial India and Europe," *Minerva* 34, no. 2 (1996): 161–76; Dhruv Raina, "From West to Non-West? Basalla's Three-Stage Model Revisited," *Science as Culture* 8 (1999): 497–516; Dhruv Raina, *Images and Contexts: The Historiography of Science and Modernity in India* (Delhi: Oxford U. Press, 2003); Kapil Raj, "Colonial Encounters and the Forging of New Knowledge and National Identities: Great Britain and India, 1760–1850," *Osiris* 15 (2001): 119–34; Kavita Philip, *Civilizing Natures: Race, Resources, and Modernity in Colonial South India* (New Brunswick, NJ: Rutgers U. Press, 2004); Pratik Chakrabarti, *Western Science in Modern India: Metropolitan Methods, Colonial Practices* (Orient Blackswan, 2004); Dhruv Raina and Irfan Habib, *Domesticating Modern Science: A Social History of Science and Culture in Colonial India* (New Delhi: Tulika, 2004); Amit Prasad, "Science in Motion: What Postcolonial Science Studies Can Offer," *Electronic Journal of Communication Information and Innovation in Health* (RECIIS) 2, no. 2 (July–Dec 2008): 35–47; David Chambers, David Wade, and Richard Gillespie, "Locality in the History of Science: Colonial Science, Technoscience, and Indigenous Knowledge," in *Nature and Empire: Science and the Colonial Enterprise*, ed. Roy MacLeod. *Osiris* 15 (Chicago: U. Chicago Press, 2000): 221–40; Ania Loomba, *Colonialism/Postcolonialism* (London: Routledge, 2002); Sandra Harding, ed., *The Postcolonial Science and Technology Studies Reader* (Duke U. Press, 2011).

a unique "Western" genealogy for modern technosciences. Instead, technosciences were already global by the nineteenth century.[10] Western science appropriated and incorporated knowledges from across the world into its repertoire and called it "Western science." In India, colonial science tugged the technosciences away from their Western roots and combined them with Indian forms of knowledge.[11] What emerged were hybrid, or "braided," sciences.[12] India's modernity, with science at its core, was thus at once both Indian and Western.[13] Yet, as we will see, in the history of colonial science, we find deep patriarchal resonances, and an absence of those in the margins of power—in this case women and people assigned to lower castes. In many ways it is a double erasure—one of presumed precolonial patriarchal and caste contexts that relegated women and lower castes to marginal roles, and also in the record of colonial and postcolonial history of science where the role of gender and caste remains invisible and marginal at best. In this tale, plants are at once hyper-visible, since they are at the center of the story, and yet invisible, because the story is not about them. In this essay, we work with the available record to critically examine the stories we tell about colonial and postcolonial science.

Our third conversation partner is translation studies. The emphasis on translation and its ethical validity has a long history in feminist postcolonial studies, for instance in the works of Gayatri Chakravorty Spivak. Spivak writes about translations as inescapable and impossible: "If the text speaks, there will be Echo. And yet, as the text guards its secret, it is impossible."[14] Spivak's works on translations underline the intimacy and labor when reading across differences, the persistent willingness to listen and learn. Feminist transnational work has continued with an emphasis on translations. In the 2014 Comparative Perspectives Symposium of *Signs*, Claudia de Lima Costa and Sonia Alvarez emphasize the "translation turn" and its utility for antiracist,

10. Dick Teresi, *Lost Discoveries: Ancient Roots of Modern Science—From the Babylonians to the Mayans* (New York: Simon and Schuster, 2001); Projit Mukharji, *Doctoring Traditions: Ayurveda, Small Technologies, and Braided Sciences* (U. Chicago Press, 2016).

11. Gyan Prakash, "Writing Post-Orientalist Histories of the Third World Perspectives from Indian Historiography," *Comparative Studies in Society and History* 32, no. 2 (1990): 383–408; Gyan Prakash, *Another Reason: Science and the Imagination of Modern India* (Princeton, NJ: Princeton U. Press, 1999).

12. Mukharji, *Doctoring Traditions* (above, n. 10).

13. David Arnold, "Review of Gyan Prakash (1999) Another Reason: Science and the Imagination of Modern India," *Journal of Imperial and Commonwealth History* 28, no. 2 (2000): p. 162.

14. Gayatri Chakravorty Spivak, *An Aesthetic Education in the Era of Globalization* (Cambridge: Harvard U. Press, 2012), p. 252.

feminist, and postcolonial alliances. While noted for valence in enabling responsibility and responsiveness for contemporary feminist studies, translations are indebted to cross-language work, or a movement from one language to another. In the context of plant studies, the work of translation is omnipresent in the basic predicament that humans code, decode, and recode plant language. This opens a conundrum when we position the translation work that happens between cultures and states on matters of plant classification and nomenclature. Michael Marder, in his evocative essay "To Hear Plants Speak," asks: "What are the conditions of possibility for cross-kingdoms translations and what is the place of the untranslatable in it? And, in the first place, is the expression 'the language of plants' defensible?"[15] We endeavor to respond to Marder's questions about plants and translations through our work in colonial and postcolonial archives of plant classification. A study of the *Hortus* and the TKDL, though these accounts are separated by hundreds of years, throws invaluable light on how plants travel the world through colonialism and capitalism, and how they are incessantly translated and re-translated.

Colonialism and Its Afterlives: The Case of *Hortus Malabaricus*

Hortus Malabaricus (Garden of Malabar), a comprehensive botanical treatise chronicling the flora of the Indian region of Malabar, is credited to Hendrik Adriaan van Rheede Tot Drakenstein (Van Rheede), an aristocrat and soldier who became the Dutch governor of Cochin in 1663.[16] Written in Latin, it was published between 1678 and 1693, and remains the oldest comprehensive published work on tropical and Asian plants. Descriptions of luxurious plants are reduced and represented in colonial botany's focus on commerce and in the emerging botanical lexicon of the plant's habitat, foliage, flowers, fruits, color, smell, taste, and practical value. The *Hortus* is the culmination of 30 years of collecting, compiling, and editing.[17] More than three centuries later, the *Hortus* remains unsurpassed in importance and magnitude as an account of the medicinal plants of Malabar.[18] It is worth noting

15. Michael Marder, "To Hear Plants Speak," in *The Language of Plants: Science, Philosophy, Literature*, ed. Monica Gagliano, John C. Ryan, and Patricia Vieira (U. Minnesota Press, 2019), p. 103.

16. Akshai Jain, "A Kerala Botanist's Affair with an Unlikely 17th Century Book," *The Wire*, Sept. 30, 2018.

17. H. Y. Mohan Ram, "On the English Edition of Van Rheede's *Hortus Malabaricus* by K. S. Manilal (2003)," *Current Science* 89, no. 10 (Nov. 25, 2005).

18. K. S. Manilal, "Medicinal plants described in Hortus Malabaricus, the first Indian re-

that there were colonial impulses to produce the *Hortus,* and postcolonial India's industrial ambitions did not create a more comprehensive or updated chronicle of India's rich flora. The original *Hortus* was published in Latin and thus limited in its readership. It is remarkable, then, that no translation was available until the annotated English edition in 2003 by K. S. Manilal, a botany scholar and taxonomist who spent 35 years researching and translating the *Hortus*.[19]

The origins and rationale for the *Hortus* remain squarely in the aid of colonial efficiency. Malabar, a region in the southwest of India well known for its richness of spices and medicinal plants, has long been a site for foreign commodity traders, from early Arab traders to later Europeans who subsequently became colonists.[20] The main incentive to develop the *Hortus,* according to Rheede, was to help the Verenigde Oostindische Compagnie, also known as the Dutch East India Company. Living in Cochin, Rheede observed and recognized that locals had a trove of plant-based medicines that Europeans in the region also began to use. When these medicines were sent to Europe by sea, they often arrived decayed and spoiled, of little value or use. Rheede foresaw that a good description of Malabar's plants that included their curative properties "would involve great profit."[21] The majority of plants included in the *Hortus* are medicinal plants that had served as a source of medical prescriptions for over 200 diseases that were prevalent in the region from the fifteenth to nineteenth centuries, and indeed remain common today.[22]

Within the history of botany, *Hortus* remained important. With the steady influx of exotic plants to Europe, the classification of plants became important to botanists in the seventeenth century. European botanical gardens, notably the Amsterdam Medical Garden, became havens for exotic plants. Rheede's *Hortus* fed the appetite for colonial exotica. The plants in the *Hortus* thus translate orientalist and exotic visions of the East into European lexica. The *Hortus* was heralded as an

gional flora published in 1678 and its relevance to the people of India today." Proc. Int. Sem. "Multidisciplinary Approaches in Angiospenn Systematics" (U. Kalyani, West Bengal, 2012).

19. K. S. Manilal, *Van Rheede's Hortus Malabaricus*. Annotated English Edition. 12 Vols. (U. Kerala, Thiruvananthapuram, 2003).

20. K. S. Manilal, "Hortus Malabaricus and the Ethnoiatrical Knowledge of Ancient Malabar," *Ancient Science of Life* lV, no. 2 (Oct. 1984): 96–99.

21. Marian Fournier, "Enterprise in Botany: Van Reede and His Hortus Malabaricus – Part I," *Archives of Natural History* 14, no. 2 (June 1987): 123–58.

22. K. S. Manilal and M. Remesh, "An Analysis of the Data on the Medicinal Plants Record in Hortus Malabaricus," *Samagra: Centre for Research in Indigenous Knowledge Science and Culture (Criksc) Journal*, 5 & 6 (2009–10): 24–72.

outstanding achievement, the best and most comprehensive source of data on flora in India, especially the Malabar region, and used extensively by leading botanists of the eighteenth century, including Tournefort, Linnaeus, and De Condolle. Indeed, Linnaeus celebrated Rheede by naming a genus after him;[23] the genus *Rheedia* belongs to the family *Clusiaceae* in the major group *Angiosperms*, or the flowering plants.[24] Among the numerous books Linnaeus studied thoroughly before producing *Species Plantarum*, the *Hortus* was one of two that he singled out for respect. Linnaeus included 258 Malayalam names of plants from *Hortus Malabaricus* in *Species Plantarum*. Importantly, Linnaeus adopted many Malayalam plant names to coin binomials directly or after Latinizing them. Indeed, Manilal states that, among plant names derived from Indian languages in *Species Plantarum*, the largest number are of Malayalam origin.[25]

It is clear that Rheede obtained the data for the *Hortus* by relying on the pre-Ayurvedic traditional knowledge of local people of Malabar. The *Hortus* is a pre-Linnaean work, and there are no known specimens nor exact scientific identities that accompany them, leading to quite some debate in the literature on their accuracy. Plant representations that are not accompanied by herbaria sheets to consult on the specimen often raise scientific skepticism. Yet, Linnaeus and others after him used the illustrations and descriptions from the *Hortus* as "types" for this classification. They do not often correlate with contemporary botany.[26] But in the development of the *Hortus*, it was clearly local Indian scholars who selected the plants and described, collected, and compiled their knowledge of the medical properties of the plants.[27] Rheede was no botanist, but he was a "successful organizer," according to Fournier.[28] Living in Cochin, Rheede and collaborators were well placed to collect in the area. The king of Cochin had ascended the throne under the aegis of the Dutch, and this gave the collectors easy access to specimens. But Rheede's travel to the Netherlands meant he was not always present. Scholars conjecture that only volumes 3–8 were personally "scrutinized" by him. In fact, Rheede feared that some might find fault with the *Hortus* for its reliance on local knowl-

23. Fournier, "Enterprise in Botany" (above, n. 21).

24. The Plant List: http://www.theplantlist.org/browse/A/Clusiaceae/Rheedia/ (accessed July 30, 2023).

25. Mohan Ram, "On the English Edition" (above, n. 17).

26. Ibid.

27. Fournier, "Enterprise in Botany," Part I (above, n. 21).

28. Fournier, "Enterprise in Botany: Van Reede and His Hortus Malabaricus – Part II," *Archives of Natural History*, 14, no. 3 (1987): p. 306.

edges and terms unfamiliar to "learned botanists" and scientific usage of that time.[29] Recent histories highlight that like colonial extraction of natural resources, the *Hortus* itself exploits and appropriates local knowledges *as* colonial botany. And yet, this was no easy work of translation. A brief description of the complex translation work on nomenclature in the creation of the *Hortus* is illustrative:

> The vast majority of Malayalam words and expressions had (and still have) two forms, more or less different from each other, namely the spoken form (*vaamozhi*) and the written form (*varamozhi*). The local names of plants were dictated to Rheede in the spoken (*vaamozhi*) form of the local language Malayalam. That was then translated to Portuguese language, writing the names in the spoken form of the names themselves, from which it was translated to Dutch language and then from Dutch to the Latin language used in the printed text of the book. During this tortuous, multi-stage transformation, the Malayalam names, which even otherwise do not easily yield to European tongue or ears, had undergone severe distortions that are reflected in their depiction in Roman script in the book. Alongside the illustrations, Malayalam names are written in Malayalam script also, which is a great help in understanding them better. However, they are the exact transliteration of the spoken form (*vaamozhi*) that was in use in the 17th century, written in an old script. Since then, Malayalam script itself as well as the language have changed. To compound the confusion, it also appears that many of the names in Malayalam script are written, perhaps later in Amsterdam and Leiden, by persons who had no knowledge of the language or its script.[30]

Despite this complex history, the main colonial account is entirely hagiographic, with Rheede as the hero of the *Hortus*. He is credited with organizing a great number of people—Indians, Europeans, botanists, priests, clerks, medics, physicians, soldiers—working across two different continents (which at that time were half a year's journey apart) to create the 12-volume set over 30 years. In the colonial archive, the role of Indian locals is lost, and they remain invisible and forgotten figures; more so, no women are noted in this history, a glaring abyss. For the most part, the Dutch colonists are given the credit of authorship and celebrated. Yet again, colonial extraction and appropriation are translated as the success of the colonists and their scientific prowess. This colonial narrative that placed Rheede as the sole hero of the *Hortus* has been contested only in recent times, starting notably with environmental historian Richard Grove, who argues that the *Hortus* was based on the Ezhava (a "low" caste from Kerala) system of botani-

29. Ibid., p. 299.

30. Manilal, "Medicinal plants," (above, n. 18), p. 559.

cal knowledge and classification.[31] Of the large numbers of Indians involved, the key figures credited include three Brahmins (Ranga Bhat, Vinayak Pandit, and Appu Bhat) and a Malayali Ezhava physician, Itty Achuthan.[32] While the credits do cross caste lines, the glaring omission of women from the history of botanical knowledge needs to be doubly emphasized.

There is little doubt that Rheede relied on local knowledge in constructing the *Hortus*. Significant in this history is the key presence of Dr. Achuthan, a Chogan (Ezhava, considered a lower caste) from a family of generations of physicians. As Burton Cleetus (2007) argues in his insightful essay, in the pre-colonial era Ezhava physicians had widespread and extensive knowledge of the medicinal value of local flora and fauna. They used herbal remedies alongside other healing practices, including rituals, incantations, and spells. While Achuthan was not given authorship, his testimony is included in the preface of the *Hortus,* where he clearly claims botanical knowledge and medical expertise through "long experience and practice."[33] Also significant is that he is immortalized by having a genus named after him: *Achudemia*.[34] However, subsequently, with the arrival and consolidation of British colonial rule, a series of contestations and consolidations unfolded.

These contestations and consolidations were not only between the British and Indians, but also within Hindu groups, especially along the lines of caste. By the mid nineteenth century, Ezhavas and other "lower caste" communities began to contest widespread caste discrimination, leading to large-scale communal clashes and social tensions. The ruler of Travancore opened formal Ayurvedic education to lower castes. Indeed, such dissemination of classical knowledge and art forms among the Ezhavas spread amongst fellow caste men. While "upper caste" Ayurvedic texts negotiated colonial medicine, those negotiations and hybrid knowledges were now spread to lower caste and local indigenous medical systems. Cleetus argues that this process can be characterized as a "hegemonisation attempt by the dominant tradition over the lower castes."[35] Thus, we see a blurring of the distinct

31. Richard Grove, "Indigenous Knowledge and the Significance of South-West India for Portuguese and Dutch Constructions of Tropical Nature," *Modern Asian Studies* 30, no. 1 (1996): 121–43.

32. Fournier, "Enterprise in Botany," Part I (above, n. 21).

33. Burton Cleetus, "Subaltern Medicine and Social Mobility: The Experience of the Ezhava in Kerala," *Indian Anthropologist* 37, no. 1 (Jan.–June 2007): p. 150.

34. Mohan Ram, "On the English Edition" (above, n. 17).

35. Cleetus, "Subaltern Medicine" (above, n. 33).

boundaries between Western and indigenous medicine, between upper caste and lower caste knowledges in practice, even though these categories have been consolidated as pure histories. It is worth noting that Indigenous societies remained deeply heterogenous in their culture, geography, sociality, and health care methods and practices. As the Indian nationalist struggle accelerated, Hindu intellectuals drew on the ancient Vedas to claim science as Hindu. With this began an enduring history wherein Hindu superiority was grounded in a grand Vedic civilization and a compelling and enduring trope of the nationalist imagination.[36] Within the realm of health and medicine, Hindu science was consolidated in the name of Ayurveda, often represented as classical and upper-caste male knowledge systems grounded in ancient Vedic knowledge. Thus, the nationalist struggle and imagination also emerged as ones that celebrated the knowledge of upper-caste men. Leena Abraham (2020) draws our attention to how only male members of households gained entry into medical practices, and midwifery was seen as lower in status and was reserved for women from "untouchable" castes.[37] A key rationale for excluding women from the practice was their purported "impurity" during menstruation—menstruation being regarded as a mechanism of cleansing the body. As always, the complex story of purity—of science, of caste, of nation—endures in the bodies of women. Who can produce knowledge and who can heal? As Abraham argues, the entry of women into the colleges of Ayurveda in large numbers only became possible with the rise of biomedicine and the diminished social status of Ayurveda.[38]

Postcolonial and subaltern histories of science paint a complex picture, and the *Hortus* is an excellent case in point. All the names in the *Hortus* are based on local names used by local people, and do not correspond to the more medical Sanskrit names used in Ayurveda. As Manilal and Remesh argue, not all the plants mentioned in the *Hortus* are used in Ayurveda,[39] which supports the claim that the source of the names were locals and not Ayurvedic texts, although, as we see above, what is authentically Ayurvedic remains decidedly murky. The ethnomedical information of the *Hortus* was culled from palm leaf manuscripts by Itti Achuthan. There is strong evidence that the ethnobotanical and ethnomedical uses captured in the *Hortus* are the result

36. Subramaniam, *Holy Science* (above, n. 7).

37. Leena Abraham, "Gender, Medicine and Globalisation: The Case of Women Ayurveda Physicians of Kerala, India," *Society and Culture in South Asia* 6 (1) 2020: 147–48.

38. Leena Abraham, "From Vaidyam to Kerala Ayurveda," *The Newsletter* 65 (Autumn 2013): 32–33.

39. Manilal and Remesh, "An Analysis" (above, n. 22).

of generations of empirical knowledge of the Ezhava.[40] K. S. Manilal, the English translator of the *Hortus*, writes that the palm leaves and other original sources of the *Hortus* did not survive. Thus, the *Hortus* remains the only "authentic" (i.e., excluding oral traditions) record of this indigenous knowledge system available.[41] And this indigenous knowledge system exists without citing any women.

Tracking colonial and postcolonial botanical knowledge and translations through the *Hortus* is thus illuminating. As Kapil Raj argues, this "relational narrative involving circulations, encounters, interactions and connections helps put non-European actors back into the story as active participants in the knowledge making process and restores their agency. It thus contributes to rectifying the European great-man, heroic image on which the Scientific Revolution narrative is constructed as a singular European achievement, to the exclusion of all other peoples and cultures."[42] However, we should add that while the *Hortus* displaces Raj's "European great man," the "man" remains solidly in place even in this anti-colonial retelling. The *Hortus,* in summary, is a seventeenth-century compendium of local Ezhava knowledge (itself a hybrid knowledge thanks to class and caste struggles) compiled over 30 years that travelled through colonial routes and was adapted through multiple linguistic translations, by the Dutch into Portuguese, then Dutch, then Latin, and more recently English. With the enduring legacy of caste discrimination in postcolonial India, Ezhava groups have protested and claimed the *Hortus* as their indigenous property, thus challenging the Indian state and its claims of the *Hortus* as Indian. As Sita Reddy eloquently argues, while Manilal and Kerala University acknowledge the native heritage of the *Hortus* and that this deserves recognition, the Ezhavas claim outright ownership.[43] Ezhava activism led to the creation of a "Hortus Valley" at the Malabar Botanical Garden and Institute for Plant Sciences in Calicut with 432 of the species included in the *Hortus*. In the gateway is a bas relief of an Ezhava couple (man and woman) who hold the book's title and the figure of Itti Achuthan as the goddess of Indian botany. The meaning of this relief, Minakshi Menon concludes, "could not be clearer: the knowledge contained in the Malabaricus belongs to

40. Mohan Ram, "On the English Edition" (above, n. 17).

41. Manilal, "Hortus Malabaricus" (above, n. 20).

42. Kapil Raj, "Thinking Without the Scientific Revolution: Global Interactions and the Construction of Knowledge," *Journal of Early Modern History* 21 (2017): 445–58.

43. Sita Reddy. "Making Heritage Legible: Who Owns Traditional Medical Knowledge?" *International Journal of Cultural Property* 13 (2006), 161–88.

the Ezhavas."[44] They claim the *Hortus* as *their* indigenous knowledge and demand that all sources of the *Hortus* be repatriated.[45] *Hortus* illustrates that plant circulations do not adhere to dichotomies of Western/Indigenous, western/eastern, or hegemonic/subaltern. A curious logic of maximal extraction undergirds the politics of translation and upholds indigenous knowledge, particularly lower caste knowledge, albeit in the service of colonialism. Extractivism was at the heart of the colonial order as colonial regimes plundered the resources of the colonies.[46] The same logics continue in the neocolonial and neoliberal orders of today as resources and data continue to be mined.[47]

With the *Hortus* remaining the singular historical record on botany of the period, botanists such as Manilal underscored the importance of its taxonomy and utility. Paradoxically, while Rheede developed the *Hortus* to help efficient resource extraction of the Malabar region, today the *Hortus* is used as a resource to document and protect Indian herbs and plant-based medicines. As we shall see in the next section, *Hortus* presents us with a resource to document the ancient knowledge of India's seventeenth century and to counter contemporary claims of biopiracy and the harms of globalization.[48]

The Traditional Knowledge Database Library

As an Indian database of "traditional" or "indigenous" plant-based remedies, the Traditional Knowledge Database Library (TKDL) is usually presented as a solution to biopiracy in India. Biopiracy is when "indigenous knowledge of nature, originating with indigenous people, is used by others for profit, without proper permission from and with little or absolutely no compensation or recognition to the indigenous people themselves."[49] The impetus for the database emerged in

44. Minakshi Menon, "Hortus Indus Malabaricus: The Eurasian Life of a Seventeenth-Century 'European' Botanical Classic," *Max-Planck Institute for the History of Science,* 82, July 12, 2023, https://www.mpiwg-berlin.mpg.de/feature-story/malabaricus-botanical-seventeenth-century.

45. Reddy, "Making Heritage" (above, n. 43).

46. Sudan, *The Alchemy of Empire* (above, n. 7); Marcena Gómez-Barris, *The Extractive Zone: Social Ecologies and Decolonial Perspectives* (Duke U. Press, 2017).

47. Cori Hayden, *When Nature Goes Public: The Making and Unmaking of Bioprospecting in Mexico* Vol. 1 (Princeton U. Press, 2020); Hannah Holleman, *Dust Bowls of Empire* (Yale U. Press, 2018); Kavita Philip, "Seeds of Neo-colonialism? Reflections on Ecological Politics in the New World Order," *Capitalism Nature Socialism* 12, no. 2 (2001): 3–47; Kavita Philip, "Nature, Culture Capital, Empire," *Capitalism Nature Socialism* 18, no. 1 (2007): 5–12.

48. Mohan Ram, "On the English Edition" (above, n. 17).

49. Rajdeep Ghosh and S. Palbag, "TKDL: An Answer to Biopiracy in India," *International Ayurvedic Medical Journal* 5, no. 11 (2017): 1–12.

the 1990s with a number of attempts to patent plants in the West that had long been known and used in India. For example, in 1995, two emigrant Indians in the US patented turmeric as a healing agent for wounds. A legal challenge documented evidence of turmeric's extensive prior use in India, and the patent was revoked in 1997. Similarly, the neem plant, which has antifungal properties, was patented in 1995. International NGOs and representatives of Indian farmers filed legal objections, and the patent was reversed in 2005.[50] With time, the Indian government became involved with expensive litigation in US courts over patents given to traditional medicinal knowledge from India regarding turmeric, neem, basmati rice, and yoga positions. For example, in the year 2007, 130 patents and 1000 trademarks were given to yoga postures and products in the US.[51] In each of these cases, a long history of local knowledges was translated into reductionist notions of active ingredients in order to make such claims. This knowledge was then commodified to accrue considerable revenue and profits. It is often then legalized through ownership through patents.

The concern and fears of biopiracy grow as multinational companies continue to mine the world for new drugs and the global demand for "herbal" and alternative medicines grows. Seventy percent of herbal drugs worldwide are believed to have been drawn from indigenous medicine, and most synthetic analogues are also derived from compounds isolated from plants.[52] There is thus a lucrative global market for herbal drugs. It is worth noting that this is not only about exploitation from the West. In contemporary India, traditional knowledge shrouded in the language of ancient Vedic wisdom has prospered under a burgeoning Hindu nationalism. We have seen an upsurge of products—drugs from traditional Indian medicine such as Ayurveda, Siddha, and Unani, as well as practices such as yoga and meditation—come to be sold and exploited by Indians within India and abroad.[53]

50. N. G. Dhawan, M. Mavai, P. Bishnoi, and R. K. Maheshwari, "DTK of Medicines from Bio-piracy: Its Conscientiousness by TKDL of India," *PharmaTutor* 4, no. 4 (2016): 13–17.

51. Pradip Thomas, "Traditional Knowledge and the Traditional Knowledge Digital Library: Digital Quandaries and Other Concerns," *International Communication Gazette* 72, no. 8 (2010): 659–73.

52. Saikat Sen and Raja Chakraborty, "Traditional Knowledge Digital Library: A Distinctive Approach to Protect and Promote Indian Indigenous Medicinal Treasure," *Current Science*, 106, no.10 (May 2014: 1340–43.

53. Meera Nanda, "Bad Medicine, Fake History, Postcolonial Complicity: Ayurveda in the Time of COVID," *The Wire,* Sept. 16, 2021; Meera Nanda, *The God Market: How Globalization Is Making India More Hindu* (NYU Press, 2011); Subramaniam, *Holy Science* (above, n. 7); Andrea Jain, *Selling Yoga: From Counterculture to Pop Culture* (Oxford U. Press, 2014).

Two global agreements frame such patents. The Convention on Biological Diversity (CBD) gives nations sovereignty over their own biological resources. The Trade Related Aspects of Intellectual Property Rights (TRIPS) does not recognize such sovereignty but gives rights based on intellectual property and protection. According to the latter, (un)documented or provable knowledge of the use of plants in indigenous communities prevents the granting of patents. Even while the knowledge might have been practiced for centuries, it still needs to be substantiated by these new global standards. The TKDL emerged as a way to set standards and document traditional knowledge within global legal parameters. If India can prove the prior knowledge of efficacious drugs or treatments, then those cannot be claimed by other groups or nations. The patents for turmeric, basmati rice, and neem granted in the US created an urgent situation, and the government of India formed a taskforce. The TKDL emerged as a solution to biopiracy. By (data) mining ancient texts and literatures in India's multiple languages—Sanskrit, Hindi, Arabic, Persian, Urdu, Tamil—the database chronicles the use of plants in Indian history. TKDL as a database is available in English, German, Japanese, Spanish, and French; it documents evidence of "prior art" when patent applications are filed.[54] Thus, if patents are filed in other countries, the database serves as a resource in the patent granting process.

But of course, as the TKDL has unfolded, the complexities of the issues have multiplied. Much is lost in these representational and translational processes. Pradip Thomas (2010) chronicles some of the key issues. First, there are the politics of nomenclature. What gets to be called indigenous or traditional? While global politics enables such a database, it is tough to date "indigeneity." In a country like India with numerous migrations and colonial regimes, and a country with many unrelated and unconnected cultures, there is little that remains "pure" or untouched by the colonial history. India itself is a postcolonial invention after the exit of the British. The *Hortus* and its many translations are an excellent case in point.

We see how the mantle of traditional knowledge like the *Hortus* often legitimizes dominant traditions and social hierarchies, further marginalizing unempowered local communities and gender groups. Dominant traditions by majority and powerful groups are given more attention than the traditions of groups that are politically disenfranchised. Given the histories of colonialism, globalization and global circulations are hardly new. When traditions travel, how should we regard them? As Thomas asks, "Is there a difference in doing yoga in

54. Thomas, "Traditional Knowledge" (above, n. 51).

a salubrious suburb in Santa Barbara as opposed to doing it in a little village in rural Gujarat where the practice of yoga is inspired by religion and is part and parcel of a way of life?"[55] Ayurveda and yoga have predominantly male public faces, although women practice them in equal numbers. For instance, Abraham notes the high rate of women's entry into the traditionally male-centered fields of Ayurveda in recent years, but also notes the absence of women, in varying degrees, in the "globalization of Ayurveda."[56] In addition, it remains the case that high-profile Indian practitioners of yoga and Ayurveda in the global arena are men. What is thus guarded and protected is public protection of the rights and naming of yoga and Ayurveda controlled by men; the private and domestic uses of traditional medicine and body practices remain invisible and outside these rights.

No doubt, the patenting of plants and practices by the West is deeply problematic, but in creating TKDL as sites of authenticity, new quandaries arise. As postcolonial studies reminds us, science in India is best characterized by hybridity, and yet the TKDL doubles down on global legal frameworks that revert to claims of authenticity and essentialism. Within global regimes of patents, complex histories are reduced to these simple claims and by unproblematized translations.

Also significant is the digitization of traditional knowledge "precisely because there are limits to the digitization of complexity," where TKDL is more accurately an "abstraction of traditional practices from the larger meaning systems that suture and ground a given knowledge and practice."[57] This is not to develop any pure or essential idea of the indigenous but rather to question what indigeneity means in a history of global circulations and translations. The lessons of postcolonial STS teach us that despite representations of science as authentic and Western, science has never had a pure or singular history. Postcolonial historians of science urge us to understand science as works of translation, as hybrid knowledges and braided sciences.[58] The TKDL continues this mistranslation of complexity by embracing a global legal framework grounded on essentialist claims of authenticity.

Most importantly, with the rise of Hindu nationalism in the last few decades, the valorization of the indigenous grows even more political and problematic. The ancient Vedic sciences are routinely polished and presented as ancient wisdom and traditional knowledge.[59]

55. Ibid.

56. Abraham, "Gender, Medicine and Globalisation" (above, n. 37), p. 144.

57. Thomas, "Traditional Knowledge" (above, n. 51).

58. Mukharji, *Doctoring Traditions* (above, n. 10).

59. Banu Subramaniam, "Viral Fundamentals: Riding the Corona Waves in India," *Religion Compass* 15, no. 2 (2021): e12386.

Arun Agrawal calls such claimants the "neo-indigenistas"—those who invoke essentialized and unqualified support for everything indigenous. Ironically, as he argues, such groups often use the dictates of science and the digital to validate and celebrate the pure, authentic, and "indigenous."

> In their desire to find an elevated status for indigenous knowledge, they attempt to use the same instruments that western science uses. In so doing they undermine their own assertions about the separability of indigenous from western knowledge in three ways: 1) they want to isolate, document, and store knowledge that gains its vigour as a result of being integrally linked with the lives of indigenous peoples; 2) they wish to freeze in time and space a fundamentally dynamic entity—cultural knowledge; and 3) most damning, their archives and knowledge centres privilege the scientific investigator, the scientific community, science and bureaucratic procedures.[60]

Agrawal draws our attention to the insidious blurring of lines between representations of indigenous and Western knowledge systems where those with power to articulate and make claims use a purported authenticity of Western or indigenous knowledges to legitimize their assertion. Also, culture is frozen in space and time to package a knowledge claim. As feminist STS scholars, how do we move through these convoluted trajectories, a veritable maze of knowledge about plants?

Feminist Postcolonial Plant Studies

In bringing the *Hortus* and the TKDL together, we see some familiar themes emerge and re-emerge over 400 years, from the colonial to the postcolonial. We discern the interaction of macro and micro politics on local and global spaces as plants travel the world. Particular language systems (colonial, Western, upper caste, and men) are given more credit, visibility, and credibility as true representatives of a people and plant nomenclature follow suit. Yet, in some instances, as in the *Hortus*, local knowledge systems crossed caste lines more than is often acknowledged. Translations lead to retranslations, from one power regime and language code to the next, completely uprooting the original and reinstating new terms of reference. We note that it is erroneous to homogenize colonialism as one system, not only in terms of its economic strategies, but also in that the natives were colonized in myriad ways. Even in this story, Dutch colonialism was supplanted with British colonialism. Itti Achuthan shared some knowl-

60. Anil Agrawal, "Dismantling the Divide between Indigenous and Scientific Knowledge," *Development and Change* 26, no. 3 (1995): p. 428.

edge that belonged to the tradition of his caste group, the Ezhavas. But his was not the exclusive contribution. What of the claims of contemporary Ezhavas that they want to repatriate every Hortus? Who owns the *Hortus* in these complex temporal and spatial political geographies? How do we read the meticulously translated plant classifications that owe no fidelity to any locale? What is "Indian" in pre-colonial and colonial settings? As for Linnaeus using the *Hortus* and the local language of Malayalam in his nomenclature, should we oppose this as colonial appropriation and theft, or should we celebrate it as a proof of botany as a global science and indeed grounded in subaltern knowledge? Through colonialism's aggrandizements, the language of plants remains hidden under layers of meaning and the play of political economy. In light of the *Hortus* and the TKDL, what does feminist postcolonial plant studies look like?

As we noted in the introduction to this article, there has been a veritable explosion in interest about plants in the last few years, leading Natania Meeker and Antónia Szabari to write this about critical plant studies: "The plant has moved front and center in a particular critical discourse, and has even become an object of academic fashion."[61] While plants become an artifact of fashionable discourse, our intervention at this juncture strives to place conversations within a global political economy of nomenclatures and classificatory schemas to highlight specific histories of framing. Plants have been used as pawns in political economy, yet as Jeffrey Nealon rightly emphasizes, plants have been removed from consideration of biopolitics.[62] The vegetal is largely ignored in biopolitics and its theorizations of the human and animal. Our study of the *Hortus* and the TKDL attempts to speak to this abyss in theories of biopolitics by situating "plant travels" and its translations at the heart of the political economy of science. A colonial state amassed the vast knowledge in the *Hortus* from indigenous science, and we now see a postcolonial state's attempts at codifications of indigenous science. Plants as traditional knowledge and cultural heritage are manipulated through power regimes and form a largely untheorized avenue for an understanding of biopower and its global frame. Feminist work on biopower that deciphers the administration and governance of life forms in its variability must reckon with plants as imbricated within a global political economy that names it for maximal profit. Any understanding of the administration of life is incomplete without a consideration of vegetal formu-

61. Natania Meeker and Antónia Szabari, *Radical Botany: Plants and Speculative Fiction* (New York: Fordham U. Press, 2019), ix.

62. Nealon, *Plant Theory* (above, n. 2), x.

lation, its doings and undoings. For the "plant turn" to be responsive to the push and pulls, turns and re-turns of scientific investigation, we must reckon holistically with structures of a global political economy. These structures situate individuals and groups in relation to knowledge and shape language codes that formulate nomenclatures and classifications so as to broaden markets and tighten their hold over the named entities. It remains vital for feminist postcolonial science studies to continue its analyses of the political economy of science through ostensibly disparate power regimes and a continual deepening of analyses of biopolitics through varied regimes of life: vegetal, animal, human.

In this article we speak to the "translation turn" and the "plant turn" and see them implicated within global political economy, from colonialism to the postcolonial state. Anna Tsing writes about translations as intrinsic to capitalism: "Translations across sites of difference *are* capitalism: they make it possible for investors to accumulate wealth."[63] Tsing's analyses address understandings of translations as solely restricted to language use and pushes beyond them. Her attention to translations *as* capitalism provides renewed impetus to explore the political economy of language and naming, the material politics of who gets to name and what something is called. We continue this introspection in our essay; our title, "Translations in Green," reflects that the color green has two popular connotations—plants and money—and both greens are inextricably interconnected through the histories of colonialism and capitalism. The *Hortus* allowed colonists to more efficiently exploit colonial resources. The TKDL, while it ostensibly protects against exploitation from the West, opens doors for exploitation by elites within the nation state. The proliferation and celebration of "traditional" medicines and practices are all over modern India.[64] The TKDL showcases this mechanism through indigenous translations from local languages and by translating its data into English, German, Japanese, Spanish, and French. These translations mark private property lines and draw borders across the plant kingdom. Tsing astutely draws attention to the "economic diversity" of capitalism that makes accumulation possible and leads to more property in the hands of a few.[65] Thinking with the *Hortus* and its diverse origins, which then become codified for marketability, we see how extraction

63. Anna Lowenhaupt Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton: Princeton U. Press, 2015), p. 62.

64. Nanda, "Bad Medicine" (above, n. 53); Nanda, *The God Market* (above, n. 53); Jain 2014 (above, n. 53); Subramaniam, *Holy Science* (above, n. 7).

65. Tsing, *The Mushroom* (above, n. 63), p. 66.

takes form. Alongside an understanding of capitalism through translations, Tsing writes about "science as translations." She notes that attention to translation practices in science has been restricted by a machine model where things come together or fit into place to form a cohesive knowledge system. The produced knowledge system speaks to the West, Tsing points out. She thus extols, "Science study needs postcolonial theory to extend itself beyond the common sense of this self-imposed box. In postcolonial theory, translation shows us misfits as well as joins."[66] We see knowledge about plants emerging from this messy, convoluted labyrinth of translations and retranslations. The Hortus and the TKDL provide much impetus to move beyond a machinic model and sift through devious mechanisms of political economy that formulate the knowledge base for plants.

Spivak draws our attention to a derivation of the word "translation" from a "Latin past particle (of *transferrer*, 'to transfer')."[67] When we think of the work of translation within political economy, we see that the transfer of wealth is intrinsic to its workings. We have noted the glaring omission of women through much of the history of botanical nomenclature; however, we see this omission not as neglect or bias but as a mechanism for consolidation of private property that is built on a history of exclusions. While plant language has explicit anthropocentric gender terminology—for instance, when describing plant sex, plant bodies are coded male and female—the transfer of wealth through translations is explicitly male, high caste, and dictated through the biopolitics of sovereignty. Likewise, while nature is celebrated as "female," the science of botany is decidedly male-dominated and patriarchal. While feminist work, for many decades, has critiqued the politics of representation and its proclivity to maintain the status quo, we add the gendered politics of translations alongside a critique of representations. While representations perpetuate our established modes of legitimacy, translations also transfer meaning and wealth to specific bodies.

A postcolonial feminist STS notes that plants are beings that connect myriad spaces. In their analysis of literature in *Radical Botany: Plants and Speculative Fiction*, Meeker and Szabari persuasively argue that within the context of literary and scientific works, plants are "interplanetary travelers" with a cosmic and interplanetary dimension often taking the form of colonies.[68] Plants travel through numerous circuits of meaning and are then framed to speak to specific human

66. Ibid., p. 217.

67. Spivak, *An Aesthetic Education* (above, n. 14), p. 243.

68. Meeker and Szabari, *Radical Botany* (above, n. 61), p. 28.

interests. In this article, our intentional methodology encompasses listening to broad strokes of history and political economy, the larger picture that often gets hidden in attempts to individualize research and plant language.[69] We also showcase continuities between disparate moments of political economy to highlight how plant language gets framed and reframed. Our intervention in the "plant turn" and "translation turn" is inspired by feminist postcolonial work that is attentive to plant travels, through the politics of language, as part of a global political economy that codes plant worlds with nomenclatures and classifications. As Charu Singh notes: "Far from being a matter of linguistic translation alone, the construction of word-level equivalence required linguistic, epistemic and political strategies to render nomenclature meaningful, stable and authoritative for its vernacular publics."[70] Complex plays with language, politics, economy, and identities are intrinsic to the circulation and creation of knowledge claims.

We hope that as the attention to plant language increases in studies on plant communication and plant sentience, our study of the *Hortus* and the TKDL helps make visible power structures, gender regimes, and the guises of political economy that frame plant travel. While the *Hortus* and the TKDL offer a rolling landscape of research questions and avenues of analyses, such as on specific plant representations, individual plant histories, and changes within singular language systems about plants, we hope that our analysis moves us to think about plant language in various ways, in this case through political economy. Our attention to plant language remains haunted by its silences. If not for postcolonial historians of science, the *Hortus* would singularly extoll colonial science. If not for the Ezhava and their claims, the Indian state would claim the *Hortus* as caste-less Indian knowledge. Without historians of Ayurveda, its claims of an upper caste and Vedic knowledge would remain unchallenged. The absence of women as sources of botanical knowledge is notable. At each turn, a deep dive into history reminds us of the many elisions and erasures of the past, challenging any claims of purity or authenticity. It forces us to ask: What do we not hear? Does the plant remain hidden through critiques that are inspired to make it more invisible? What are the limitations in the language of our own research methods?

This tour through the *Hortus* and the TKDL reminds us how thor-

69. Donna Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Duke U. Press, 2016).

70. Charu Singh, "Science in the Vernacular? Translation, Terminology and Lexicography in the Hindi Scientific Glossary (1906)," *South Asian History and Culture,* 13, no. 1 (2021): p. 18.

oughly entangled our histories are with plants and animals. There are no sites of purity or authenticity. The histories of colonialism—colonial hegemony and anti-colonial resistance—emerge any time we delve into the histories of science. However, while epistemologies and knowledges are profoundly entangled, the power of hegemonic science is inevitably allied with the powerful. In the case of the *Hortus*, Dutch colonists claimed Ezhava and Indian knowledge systems as their own, erasing these histories until they were uncovered in postcolonial retellings. The Indian state claims indigenous knowledge as "Indian" even while marginalized caste and class groups challenge this appropriation. The *Hortus* reminds us that power works at multiple levels through precolonial, colonial, and postcolonial landscapes. The TKDL reminds us that even after independence, former colonized countries continued to be entangled in colonial extractive politics of biopiracy. In order to safeguard their "knowledge," nations have to make essentialist claims of authenticity and indigeneity, even while these are incommensurable with local knowledge systems. The active ingredient of a plant is a poor proxy for the complex relationships of nonwestern medical epistemologies. Adding a wrinkle to the narrative of postcolonial nations is the case of the rise of Hindu nationalism in India and its historical entanglements with a global white nationalism. Questions of anti-colonialism within Hindu nationalism trouble any easy alliance with the postcolonial or anti-colonial.[71] A decolonial project isn't about recovering an authentic, pure knowledge system from this thoroughly miscegenated history. Rather, it is to attend to the hegemonies of power. Frantz Fanon continually reminded us about the violences of decolonization where colonialism and its resistance oftentimes fight a battle wherein they mirror each other. In *The Wretched of the Earth*, Fanon writes about the complicated processes of decolonization and the far-reaching power changes it demands: "Decolonization is truly the creation of new men."[72] Demanding a vast rupture in thinking and acting, decolonization therefore attests to asking: Who gains what and when? How do we craft theories of ethics and justice in these layered and sedimented histories? The histories of botany and the colonial travels of plants remind us of these messy and entangled histories.

Marder writes: "to hear plants speak we must learn to listen to the lacunae and silences of language, leaving plenty of room for the untranslatable (and hence the unspeakable) in these practices

71.Subramaniam, *Holy Science* (above, n. 7).

72. Frantz Fanon, *The Wretched of the Earth,* trans. Richard Philcox (New York: Grove Press [1963] 2004), p. 2.

of translation."[73] Marder's appeal remains a valuable impetus as we think of silences and lapses through these moments of plant translations. We question the frames of the seen and the heard, history and the present, and agonize about colonial continuities through place and time. The colonial suffuses the postcolonial science and culture. Perhaps feminist postcolonial science must remain a process of listening to silences and the untranslatable in our practices and theories. Separated by hundreds of years, the *Hortus* and the TKDL are as much about what they translate as they resound with silences and caution us about our framing of the language of plants.

73. Marder, "To Hear Plants Speak" (above, n. 15), p. 105.