

Plants, Politics, and the Imagination over the Past 500 Years in the Indo-Malay Region

by Michael R. Dove

This is an analysis of the way that the colonial-era model of plantation production in Southeast Asia disciplined plants and people and, of most importance, the way that production relations between plants and people were conceived. This discipline was challenged during historic moments of crisis that stimulated the imagination of alternative modes of production. The analysis will focus on the histories of three plants in particular: black pepper (*Piper nigrum*), Para rubber (*Hevea brasiliensis*), and a sword grass (*Imperata cylindrica*). Notable events in their histories include the proscription of pepper cultivation in the sixteenth century *Hikayat Banjar* in southeastern Borneo; the tribal dream of rice-eating rubber in the 1930s in western Borneo and the contemporaneous international effort to restrict smallholder rubber cultivation; and the lengthy history of productive native management of *Imperata* and disbelief in such management by plantation managers and government officials. Each case represents conflict between alternative and competing systems of crop management, which consists in part in transcendent exercises to imagine, or deny, alternative systems of production. These leaps of the imagination are nourished by a focus on the human-nonhuman divide, especially during historic moments of crisis.

There are many persons in cultured communities who see nothing harmful about destruction of forest in shifting cultivation. (Bartlett 1956:709)

Industrial rubber . . . is made possible by the savagery of European conquest, the competitive passions of colonial botany, the resistance strategies of peasants . . . and much more that would not be evident from a teleology of industrial progress. (Tsing 2005:6)

The posthumanist turn and multispecies ethnography have brought attention to bear on the nonhuman, which in practice has mostly meant fauna. As Lewis-Jones (2016) writes, “Plants have all too often been relegated to the margins—their diversity and vitality obscured within generic terms such as “habitat,” “landscape,” or “agriculture” (1). The implication is that plants are too far from us to trouble our beliefs in the same way that animals can. A cat staring at Derrida (2008 [2006]) is disconcerting in a way that a geranium is not. Hall (2011:7) traces this stance to the views of Plato and Aristotle, who rendered plants as “radically different” from animals, placing them at the bot-

tom of the hierarchy of life, where they existed for the use of human beings. In contrast, Aristotle’s pupil, Theophrastus, saw plants as “volitional, minded, intentional creatures that clearly demonstrate their own autonomy and purpose in life” (Hall 2011:7–8). Although the views of Theophrastus were largely lost for 2 millennia, some scholars now herald a “plant turn” toward the “vegetative point of view” as part of the larger ontological turn (Lewis-Jones 2016:1; Sheridan 2016:39). A systematic effort to describe what this might look like is Ellen’s (2016) survey of the field of ethnobotany and its “disjunctions of approach that could arguably be said to be ontological.”

Kohn (2013) is a seminal scholar in this field; he states his interest not in how natives think about forests—the focus of work by several generations of environmental anthropologists—but rather in how forests themselves think: “If we limit our thinking to thinking through how other people think we will always end up circumscribing ontology by epistemology” (94). For example, in one compelling passage Kohn discusses the impact on a monkey of the noise of a falling palm tree—but his analysis is not really about the tree. Also notable here is Tsing’s (2015) pioneering work on the Matsutake mushroom, which she uses as a lens to examine environmental history, global commodity production, and science.

Ortiz (1995 [1947]) did relevant pioneering work in his comparative analysis of Cuban sugar and tobacco, which raised the question of discipline (Foucault 1995): “delicacy” for tobacco versus “brute force” for sugar (xxi). The present analysis is about the history of regimes for disciplining plants and also people in the Indo-Malay region, especially during the colonial era. The archetypal disciplinary regime, upon which colonial

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rule in this region rested, was the plantation—owned by foreigners, set up according to foreign models of production, and raising exotic commodities, but worked by natives. Much has been written about the disciplining on plantations of land, water, plants, people—but not the imagination. Stoler (1985) has written about the contest over how violence on the plantation was imagined and represented, but no one has written about the more fundamental and consequential contest over how the agroecology of the plantation itself was imagined. The political logic of the plantation, its very *raison d'être*, rested on presenting its agroecology as the only rational one, the only possible one. Essential to this logic was ruling out any alternative agroecology.

Work on plantations and other “concessions” has shown that there is an epistemic imperialism to all such development schemes (Bonneuil 2000; Hardin 2001). These schemes construct bounded spaces in which exotic plants and knowledges can flourish and in which native plants and knowledges cannot. A *tabula rasa* is thereby constructed that privileges the crops and technologies of powerful outsiders or settlers and de-privileges the crop- and place-specific knowledge of local smallholders. The *tabula rasa* permits the exercise of the imagination, to imagine something that is not there and that does not resemble anything that is there. This is the central conceptual project of settler colonialism (Burrow, Brock, and Dove 2018), inimical to which is the existence of alternatives.

The disciplinary hegemony of the colonial plantations of Indo-Malaya was great but not untroubled: some lands, plants, and peoples escaped. In particular, the imaginations of the native smallholders could never be entirely regulated: alternatives to plantation-based production were constantly being imagined and enacted. Discipline especially broke down during historical periods of social, political, and economic perturbation, like the Great Depression. Disturbance of socioecological systems—which is not peculiar to the modern era—creates space for pioneering, weedy, “feral” plants (Tsing, Mathews, and Bubandt 2019). It creates space, in short, for alternative socioecological landscapes, with different possibilities for gain and loss, for different actors. Disturbance thereby also creates space for feral ideas, for the imagination of alternatives to hegemony. The historical product of such circumstances is agroecological patchiness, reflecting the codevelopment of the single vision of the plantation and alternatives to it, state simplification and smallholder complexity, discipline and escape from discipline.

In this study I will examine several historical moments that illuminate this codevelopment, focusing on three of the most controversial plants in the agricultural history of Southeast Asia: *Piper nigrum* or black pepper, *Hevea brasiliensis* or Para rubber, and the sword grass *Imperata cylindrica*. Associated with each of these three plants has been a hegemonic discourse from the state plantation sector regarding the way that they should be managed and a dismissal of alternative practices by native smallholders. These three plants are distinctive for the markedly disparate views taken of them by state elites versus smallholders, which reflect the capacity of smallholders to con-

test efforts to discipline their agricultural imagination. Smallholders' capacity to imagine alternative realities to those of elite state actors is stimulated by their straddling the boundary between inward-looking subsistence production and outward-looking commodity production.

The first section of the analysis covers the cultural, historical, and political ecology of each of the three plants in question—pepper, rubber, and sword grass—systematically comparing plantation versus smallholder views and focusing on key historical moments in the contest between their respective models of production. In the next section, the ability to imagine or deny alternative production systems is examined, along with the particular historic circumstances that made these exercises of the imagination possible or not. In the concluding section of the paper, the political implications of being able to imagine alternatives are examined, as are the circumstances that make such acts of the imagination possible. The study will conclude with an application of these points to the contemporary case of oil palm development in Southeast Asia.

Important Historical Moments for *Piper nigrum*, *Hevea brasiliensis*, and *Imperata cylindrica*

Key moments in the history of each of the three plants—*Piper nigrum*, *Hevea brasiliensis*, and *Imperata cylindrica*—clarify the importance of the contest over alternate systems of production.

Pepper

Black pepper (*Piper nigrum* L.) has been important in global trade for almost 2 millennia. Native to the Western Ghats of India, it was likely brought by Hindu colonists to the East Indies, where for centuries it was grown first for the Chinese market and then for the European one, which made it the dominant commodity in global trade from the fifteenth through the seventeenth centuries. Sumatra and Borneo were the centers of the pepper trade in the East Indies, and in the latter case the center of production was the coastal Malayic kingdom of Banjar, which existed in Southeast Borneo until the end of the nineteenth century.

The Banjar kingdom's pepper drew many traders to it, foremost among whom were the Dutch and English. The Dutch established a post in Banjarmasin in 1606, and in spite of Banjarese resistance and competition from the English, secured a monopoly on the pepper trade by 1635. However, this did not put an end to the conflict over pepper between the Dutch, the English, and the Banjarese, which continued for the next two and a half centuries. Armed resistance by the Banjarese against the Dutch did not finally end until 1906.

A remarkable foretelling of this painful history can be found in the “Story of Lambu Mangkurat and the Dynasty of the Kings of Banjar and Kota Waringin,” more commonly known as the *Hikayat Banjar*. It was written, and rewritten, between the mid-sixteenth and mid-seventeenth centuries by three or

four separate court chroniclers, sitting in different Banjar courts at different times (Ras 1968). There is a remarkable passage in the *Hikayat Banjar* in which its founder and ruler, King Ampu Jatmaka, issues an injunction against the large-scale cultivation of *sahang* or black pepper for global markets, here translated from the Malay original:

And let not our country plant pepper as an export-crop, for the sake of making money, like Palembang and Jambi [two kingdoms in Sumatra]. Whenever a country cultivates pepper all food-stuffs will become expensive and anything planted will not grow well, because the vapours of pepper are hot. That will cause malice all over the country and even the government will fall into disorder. The rural people will become pretentious towards the townsfolk if pepper is grown for commercial purposes, for the sake of money. (Ras 1968:265–267)

This injunction is repeated in almost identical terms by three of the kings who succeeded Ampu Jatmaka. This was not a unique case: there were similar efforts to proscribe pepper production scattered across the region—in Aceh, Banten, Ternate, and the southern Philippines.¹

The scribes who wrote the Banjar court chronicles were prescient and made their rulers look prescient as well. With the benefit of hindsight, these deathbed visions anticipated 3 centuries of pepper-related conflict. Line by line, all of the warnings in the deathbed speech show a sound political-economic basis. Regarding “Palembang and Jambi”: these two kingdoms in South Sumatra experienced a dramatic rise and fall due to their entanglement in the colonial pepper trade, which was explicitly seen as an object lesson by Banjar. Regarding “expensive food-stuffs”: in the case of Jambi, intensive involvement in pepper cultivation led to a greater reliance on imported and thus expensive rice. Regarding “anything planted will not grow well, because the vapours of pepper are hot”: pepper exhausts the soil perhaps more than any other export crop. Regarding “Malice” and “disorder”: in Jambi, involvement in the colonial trade led the court downriver to intensify its exactions from the upriver pepper-cultivating communities, which led the latter to resist or flee. Government “disorder” also accompanied pepper cultivation: different factions in the coastal courts struck their own deals with both the European traders and the upriver producers. Regarding “The rural people will become pretentious”: the Dayak tribes of the Bornean interior were the initial cultivators of Banjar pepper. When coercive trade agreements with

1. Reid (1993:299–300) reports that early in the seventeenth century, the Sultan of Aceh ordered the destruction of pepper vines in the vicinity of the capital, because their cultivation was leading to the neglect of food crops and to annual food shortages. Reid also reports that Banten in West Java “cut down its pepper vines around 1620 in the hope that this would encourage the Dutch and English to leave the sultanate in peace,” and the Sultan of Magindanao in the Philippines told the Dutch in 1699 that he had forbidden the continued planting of pepper so that he could avoid conflict with foreign powers.

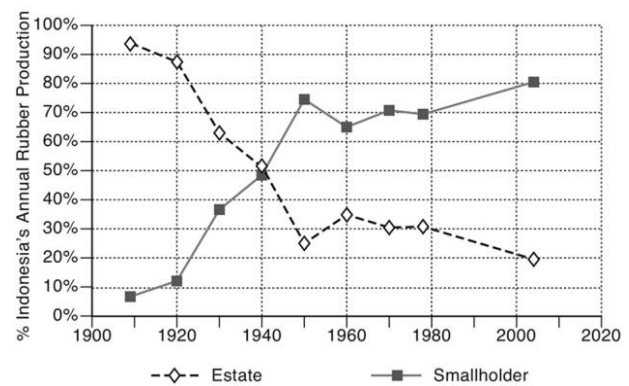


Figure 1. History of the smallholder market share of rubber in Indonesia.

the European powers forced the Banjar to strike less favorable trade deals with them, the Dayak expressed their “pretension” by withdrawing from pepper cultivation. In short, the deathbed warning was an attempt to imagine both the dire consequences of involvement in the colonial pepper trade and the desirable alternative of noninvolvement.

Rubber

Alongside spices, an equally ancient category of trade good in the region is plant exudates, consisting of tree gums, resins, and latexes. With the advent of industrialization in the nineteenth century and the invention of vulcanization, the colonial trade in Borneo’s native latexes—caoutchouc, gutta-percha, and jelutong—became quite important. At the end of the century, however, it was completely upended by the transplanting of Para rubber (*Hevea brasiliensis* Müll. Arg.) from the Amazon.² With its much higher latex content, capability to be planted in dense stands, and removal from its native pathogens in the Amazon, within several decades Para rubber displaced the native rubbers of the East Indies. Para rubber was initially developed as a plantation crop, but natives in Sumatra and Borneo—the same ones who had been gathering the native latexes—spontaneously adopted it and began planting it in their swidden fallows.

The smallholder dream. Incredibly, within one generation of first adopting rubber, native smallholders wrested the dominant market share away from the colonial plantations (fig. 1). At the same time as this was happening, during the depression years of the 1930s, when global market turmoil put pressure on the heavily capitalized and thus more fragile colonial plantations, the native smallholders of Borneo experienced a moment of angst rather like that of King Ampu Djatmaka several

2. *Hevea brasiliensis* is commonly called Para rubber after the state of Para in northern Brazil, which was one of the historic centers of rubber production.

centuries earlier. This moment came in a dream, the gist of which was as follows: “Rice that people were drying in the sun kept disappearing. Then one day the people found this rice in a hollow rubber tree that they felled to use for firewood.

The tribal Dayak of Borneo traditionally have regarded dreams as omens sent to them as communications from the spirits. Dreams can affect the decision whether or not to undertake a journey, what type of work to do on a given day, and where to locate a rice swidden. An inauspicious dream can provoke a community-wide discussion, proscription of all work that day in the swiddens, and staging of a prophylactic ceremony that evening to protect the community’s inhabitants from harm (fig. 2). Dreams that are deemed to be particularly meaningful are not only told to other members of one’s own household or community, but they may be disseminated to other communities as well—as was the case with the dream of the rice-eating rubber.

The dream-image of the exotic rubber plant threatening the native and ritualized rice would have been a highly charged one because of traditional beliefs linking the welfare of the sacred rice plant to the welfare of the people who plant it, care for it, and eat it. As a result, public telling of the dream spread widely throughout the interior of central and western Borneo, which was impressive at a time when almost all communication was by word of mouth. Hearing news of the dream caused great con-

sternation among the Dayak, so much so that in a minority of cases they actually felled their rubber trees upon hearing of it.

The dream calls attention to the vulnerability of the rice base at a time of increasing involvement in commodity production and to the need for vigilance in protecting this subsistence base against the ill consequences of such involvement. The literal meaning of the dream of the rice-eating rubber is that rubber can eat rice; the metaphorical meaning is that over-involvement in rubber production could threaten the long-term commitment to rice cultivation. The dream was not simply about rejecting an alien, New World cultigen: the Dayak had adopted rubber with alacrity, just as they had earlier adopted maize (*Zea mays*) and sweet potatoes (*Ipomea batatas*). The dream was about the complexities of market entanglement.

The plantation nightmare. At the very time that the Dayak were hearing news of the rice-eating rubber, the colonial powers in the region were experiencing their own rubber-related angst, focused on smallholder producers. As one colonial observer disingenuously stated the problem:

Rubber raised in an extremely acute form one of the most serious problems connected with colonisation, namely competition between Europeans and peasant producers, one armed with his capital, proud of his organisation and technique, and helped by his knowledge of the market; the other having the advantage of a low standard of living and securing unexpected profits from casual and slovenly cultivation. (Robequain 1955 [1946]:355)

The colonial plantation sector viewed smallholder rubber not only as casual and slovenly but also as a source of disease.³ The colonial disparagement of smallholder production led to draconian regulatory responses, most notably the International Rubber Regulation Agreement (IRRA). Enacted by the Netherlands, Great Britain, France, India, and Siam in 1934 and lasting for a decade, the IRRA was in theory designed to stabilize the world rubber market by limiting production through taxation, imposition of sales quotas, prohibition of planting, and the compulsory felling of rubber trees.

In practice the IRRA was a desperate effort to protect the colonial plantations’ initially dominant role in the rubber industry from the unexpectedly competitive smallholder sector, through imposing the burden of price stabilization largely on the smallholders—all to little avail. Smallholders could establish rubber for less than 10% of the plantation’s costs by integrating the rubber into their swidden cycles and using few if any capital inputs. In addition, because the smallholders could exploit their own household labor and because they did not have to depend on rubber for their daily subsistence, they were willing to tap

3. As Ross (2017) writes: “There was, as contemporaries remarked, something of a mania for tidiness and order on the foreign-owned plantations, which partly derived from the quest for operational efficiency but which also undoubtedly reflected a deep-seated cultural desire to achieve mastery over a wild and undisciplined tropical nature” (205).



Figure 2. In the wake of an inauspicious dream, Dayak men prepare a mimetic longhouse to deceive malign spirits. (Photo by Michael Dove.) A color version of this figure is available online.

rubber for prices that were as little as one-fifth of those that the plantations required to be profitable. In short order the smallholders “ate” most of the plantations’ market share, a position that they have held to this day: in 2016 smallholders accounted for 85% of the area under rubber cultivation in Indonesia and 82% of total rubber production (Badan Pusat Statistik 2016). Thus, the colonial disparagement of smallholders was an accurate perception of smallholdings that attack plantations, a perception of “plantation-eating smallholdings.”

Imperata

The third plant in this analysis is the sword grass *Imperata cylindrica* (L.) Beauv., of which MacDonald (2004) writes, “Cogongrass [a term of Philippine origin for *Imperata*] is found throughout the world, virtually on every continent . . . and is reportedly established on over 500 million hectares worldwide. . . . Estimates of infestation in Indonesia range from 8.5 million hectares . . . to over 64 million hectares” (370, 371). *Imperata* could be considered a commensal or “companion species” for human beings (Haraway 2003), much like those described in Kirksey’s (2015) “emergent ecologies,” but the “wreckage” with which *Imperata* is associated is not a product of the twenty-first century.

The smallholder view. *Imperata* is native to Southeast Asia and was an ancient part of the region’s cultural ecology. It is mentioned in the medieval court literature of Java (Pigeaud 1960–1963, vol. 4:160), but it was known to native societies well before that: Wolff (1994:516) suggests that the common Indo-Malay name for *Imperata* in the region (*lalang* or *alang-alang*) has roots in the proto-Austronesian language. The antiquity and cultural importance of *Imperata* is suggested by the role that it plays in traditional ritual throughout the region. Hadiwidjojo (1956) quotes a traditional Javanese saying, “God lies in the tip of a stalk of *Imperata*” (6), referring to the fact that stalks of *Imperata* were traditionally used to sprinkle holy water during Hindu ceremonies. To this day, *Imperata* is used in most domestic rituals in Central Java, for example in marital ceremonies, when it is placed under the mat on which the bride and groom kneel (Carpenter 1987). The traditional symbolic importance of *Imperata* in Southeast Asia is attested to by its role in myth, for example, among the Toraja of Sulawesi (Bartlett 1957:10–11).

Native groups in the region value *Imperata* as cattle fodder when young, as a source of thatch when mature, and as an agricultural fallow cover. As a ground cover, attitudes toward *Imperata* vary according to how closely it resembles the desired fallow period vegetative cover. The greater the dissimilarity, the greater the degree to which grassland opposes versus supports the underlying vegetative dynamics of the agricultural cycle, the greater the amount of labor that must be devoted to managing it, and the more negatively it is viewed.

In practice, views of *Imperata* may vary even within a single group’s territory, which might include not only fields but also pastures, forests, and so on. As Conklin (1959) notes in his

study of the Hanunóo of Mindoro in the Philippines: “*Imperata cylindrica* and *Saccharum spontaneum* are viewed as agricultural pests in one context (viz., a newly planted field) and all efforts are directed toward eliminating them, but they are viewed as economic necessities in other contexts (e.g., grazing lands), and all efforts are directed toward conserving them” (60). Among the contemporary Banjarese of Southeast Borneo, descendants of the earlier-mentioned sultanate, the presence of *Imperata* is interpreted as a sign of arable soils in the parts of the village territory closest to the village and most intensively cultivated (Dove 1986). The Banjarese see the growth of tall stands of *Imperata*, as opposed to the growth of prostrate grasses, as a sign that—in their system of grassland cultivation by hoe and plow—the fallow period has been sufficiently long to allow the land to be tilled again (fig. 3). In the more distant and less intensively cultivated parts of the village territory, however, they regard *Imperata* as a pest.

The plantation view. Many historic native states in the region, for example, in Java and Borneo, actively managed *Imperata* grasslands for hunting, grazing, and thatch. With the advent of large-scale, heavily capitalized, plantation-based production of export commodities like rubber and sugar, a different view of *Imperata* developed. These plantations were developed along



Figure 3. A Banjarese farmer hooks up his oxen to his scratch-plow to till *Imperata cylindrica* grasslands in southeastern Borneo. (Photo by Michael Dove.) A color version of this figure is available online.

a European versus native model, in which the natural dynamics of *Imperata* represented an impediment to land management as opposed to an asset. *Imperata* came to be seen as one of the most notorious pests on plantations. Beyond the plantations, it came to be seen as, at best, an unproductive wasteland and, at worst, as an environmental hazard, due to the belief that it supports intense fires and promotes erosion (Bradley, Wilcove, and Oppenheimer 2010:1857; Holm et al. 1977:68; Lippincott 2000; MacDonald 2004:371). This plantation-based worldview made *Imperata* into a never-ending object of government efforts at suppression and reclamation, often through attempts at reforestation; and a generation of research before World War II and another following it has been devoted to these ends, typically with little to show for it.

The view of *Imperata* from the plantation sector has been shared by most plant and crop scientists. For example, Bryson and Carter (1993) state that “Cogongrass is an aggressive, pernicious, rhizomatous perennial in the *Poaceae* (*Graminae*)” (1005). Holm et al. (1977) famously ranked *Imperata* as “the 7th worst weed in the world,” writing that “The plant must be regarded as a major menace in the high rainfall areas of the tropics. . . . It is . . . the worst perennial grass weed of southern and eastern Asia” (62). Their sweeping denunciation of *Imperata* is cited and repeated in much of the subsequently published literature on the plant. For example, MacDonald (2004) writes “Cogongrass is one of the most troublesome and problematic weedy species throughout the tropic and subtropic regions of the world” (376).⁴

Southeast Asian smallholders typically refer to *Imperata* with nonpejorative terms, like *lalang* or *alang-alang* in the Indo-Malay region or *cogon* in the Philippines, regardless of whether they see it as a boon or bane in their particular agroecological system. In contrast, references in the scientific literature—influenced by the long history of research focused on controlling *Imperata* on plantations—are much more subjective. As noted above, Holm et al. (1977:62) call it a “menace” and a “weed.” The subtitle of Bryson and Carter’s (1993) article on *Imperata* is “Weed Alert.” MacDonald (2004) repeatedly calls it a “troublesome and problematic weedy species,” and he notes that the US Department of Agriculture has placed it on the Federal Noxious Weed list (367, 373). These scholars underline the pejorative character of the “weed” label by commonly referring to *Imperata* growth as “infestations” (Bradley, Wilcove, and Oppenheimer 2010:1857; Bryson and Carter 1993:1005; MacDonald 2004:371). More generally, throughout colonial as well as postcolonial times in Southeast Asia, central governments have disparaged *Imperata*

4. To the vast negative literature on *Imperata* in the tropics can be added new alarmist studies of its introduction to the United States. Bradley, Wilcove, and Oppenheimer (2010) call it one of “the most destructive invasive plants in the United States” (1869), where MacDonald (2004) says that it threatens native ecosystems: “Cogongrass . . . is responsible for thousands of hectares of lost native habitat in the southeastern U.S.” (367, 372).

grasslands as “wastelands” or something similar. Even the anthropologist Clifford Geertz (1963:25), an otherwise astute observer, described the *Imperata* grasslands of Indonesia as a “green desert.”

Imagining an Alternative

Some of the actors involved in these historical events were able to transcend tradition, orthodoxy, and even empirical facts to imagine alternative systems of production, and some were not.

Pepper

Consider the rulers of Banjar. The pepper trade mentioned in the *Hikayat Banjar* was part of an ancient trading tradition, the importance of which is reflected in the fact that the presence of foreign traders is cited throughout the *Hikayat* as a sign of a healthy kingdom. A typical line is, “The country was bustling and prosperous, and foreign traders also came in great numbers” (Ras 1968:335, 231, 373). Even King Ampu Jatmaka, who repudiated the pepper trade on his deathbed, is also reported to have said, “In my heart I still take pride in considering myself as nothing but a prominent merchant” (Ras 1968:229, 231, 267–268).

The Banjar kingdom’s trade initially focused on forest products, the oldest trade goods of the archipelago. But at the beginning of the seventeenth century there was an efflorescence in the Banjar trade in pepper, and it became their most valuable export commodity, which literally put the kingdom on the map for the European powers. “Banjarmaseen” first appears on European maps at the end of the sixteenth century, and it was one of the first place names within Borneo to do so, reflecting its importance to European traders. The German cartographer Herman Moll’s 1708 map simply lists the Banjar region as “Pepper country” (fig. 4).

Given this history, for successive rulers of Banjar on their putative deathbeds to urge their subjects to abandon their foremost trade good represented an extraordinary leap of imagination; this represented an effort to imagine a very different reality for the kingdom, in effect an alternative reality. The rulers noted the downfall of the pepper kingdoms of Sumatra and made explicit their desire to avoid that fate. That desire can be contrasted with the centuries-long effort by the Dutch to forcibly impose a monopoly on the Banjar pepper trade, which represented one such effort to deny any alternatives to the Banjarese. How were the Banjarese able to articulate an alternate vision? Political insight, sharpened by the chaos and conflict of the colonial encounter surely played a part, as did the liminal context of the royal deathbed, which lent authority to such a transcendent vision as abandoning the pepper trade (cf. Turner 1967).

Rubber

In a similar fashion, the dream of the rice-eating rubber represented an extraordinary effort to read the image of rice in a



Figure 4. Herman Moll’s 1708 map of Borneo, highlighting trade goods, especially pepper. (Courtesy of Map Department, Yale University Library.) A color version of this figure is available online.

cavity in a rubber tree as a vision of a future in which rubber threatened subsistence rice agriculture. This threat has been borne out by the modern histories of smallholders around the world, including in Borneo itself, but at the time of the dream there was little evidence to back this up. The tribal rubber cultivators did not have cautionary examples—as the Banjar ruler had with the failed pepper kingdoms in Sumatra—to point to and learn from. They did have their prior history of gathering native forest rubbers as a reference point, and the market manias and attendant degradation of some native rubber resources that characterized this sector late in the nineteenth century may still have been remembered. But this is all there was, so the ability of the tribal smallholders to imagine a threat to rice subsistence in the 1930s, and to do so with sufficient conviction to imagine an alternative, in which they did not overcommit to rubber and abandon rice, represents an impressive exercise of the human imagination.

How were the tribespeople able to accomplish this? As was the case during the seventeenth-century colonial assaults on the Banjar kingdom, the 1930s were an unsettled time even in the

interior of Borneo. Although the instability in the global rubber markets may have favored smallholders like the Dayak, they still experienced directly the full force of the regulatory response (the IRRA) from the rubber powers. Indeed, decades later many Dayak still called this the *jaman kupon* (coupon era), after the coupons that the Dutch issued to regulate the number of rubber trees that the Dayak could have. In the context of this political-economic tumult, the dream, like the seventeenth-century deathbed in Banjar, provided a liminal context in which prevailing wisdom could be questioned and alternatives could be envisioned.

As smallholder rubber cultivation exploded and threatened their market share, the plantation sector developed a detailed, albeit fanciful, critique of it. This critique focused on the myriad ways that the smallholdings differed from the plantations, which colonial planters and officials thought would lead to disease, degradation, and inefficiency. First, smallholder rubber gardens presented a very different appearance from the orderly plantations: not only did they deviate from the regular geometric layout of plantations, but they were characterized by planting densities over



Figure 5. A Dayak woman cutting back natural undergrowth in her grove of *Hevea brasiliensis*. (Photo by Michael Dove.) A color version of this figure is available online.

twice as high as those on plantations, the absence of clean weeding, and spontaneous coverage of the rubber groves by secondary growth during periods of nontapping (fig. 5). As a result, colonial planters believed that the smallholdings were subject to “rampant root disease,” which was proving to be a serious problem on European plantations at the time, and they thought that the source of this disease was the smallholdings. This specter of diseased smallholdings was used to help justify the IRRA.⁵ Second, the smallholdings were giving yields that equaled or surpassed those on plantations. Colonial observers attributed these suspiciously high yields to purported “slaughter tapping” of smallholder trees, meaning the cutting of the bark at a rate exceeding that of natural bark regeneration. Third and relatedly, colonial planters and officials maintained that the smallholders were not “efficient producers.” The guarantee of a “reasonable return to the average efficient producer” was the purported and oft-repeated official purpose of the IRRA, and

5. The reputation of Indo-Malay rubber groves for disease even impacted efforts to export their seedlings to other parts of Southeast Asia (Aso 2009:243).

the denigration of the smallholders on these grounds was, again, part of the justification for the measures undertaken to restrict smallholder production.

When surveys of the smallholdings were eventually carried out, the evidence gathered did not support the official view: almost no evidence of root disease was found, and the rate of bark usage was found to be well in line with the rate of bark production. And when the Rubber Manufacturers Association—representing the principal international buyers of rubber (including the US) and thus inclined to be skeptical of the motives behind the scheme to “stabilize” rubber prices—demanded a definition of an “efficient producer” from the IRRA, the latter merely replied that “Efficient producers are those who produce efficiently.” In fact, the IRRA protected the least efficient producers, the heavily capitalized plantations with their high overheads; and it penalized the true efficient producers, the smallholders.

The plantation sector’s negative depiction of smallholder rubber cultivation represented as great an exercise of the imagination as the Dayak dream or the Banjarese deathbed speech, indeed greater, given its lesser connection to reality. What accounts for such an act? For the plantation sector, the 1930s were not just an unsettling time but a time in which the established world order seemed to be turned upside down. On the global scale, the logic of the capitalist world system was challenged. On the local scale, in the East Indies and Malaya, plantation companies were crippled or bankrupted. The wondrously profitable and powerful plantation sector was challenged by an incomprehensible smallholder system of cultivation, the productivity of which the plantation managers literally could not comprehend. As Ross (2017:211) writes, “The idea that certain smallholder techniques, however disorderly they may have appeared, were not only cheaper to operate but also agronomically preferable was deeply unsettling.” So for plantation managers too, this era of challenge to the accepted order of things, this era of failure of orthodoxy, was also liminal in character. As in Turner’s (1967) conception of liminality among the Ndembu, this was for the plantations a time of disorientation and transition, and its central symbol—like the multidimensional milk tree of the Ndembu (*Diplorrhyncus condylocarpon*)—was the rubber tree, a source of wealth on the plantation and a source of disaster on the smallholdings.

Imperata

Imperata also has been the object of great exercises of the imagination, especially regarding its stability versus instability and the role of people therein.

Stability and human agency. An assumption of instability is at the heart of many systems of traditional grassland management. For example, after the Banjarese of southeastern Borneo crop *Imperata* lands in dry rice for a number of years, it will succeed to prostrate grasses, and so they fallow it, which allows *Imperata* to return. But if they fallow it too long, the

Imperata will succeed to brushy growth.⁶ The principal management tool that the Banjarese employ to prevent succession to brush is an annual burn. Their management objective, therefore, is to maintain an arrested state of *Imperata* grassland succession, based on the premise that the *Imperata* will disappear without human intervention. As Sherman (1980) wrote in his study of the Batak grasslands of Sumatra, “It can be said that, in some sense, grassland is protected [by the Batak] from progressing through bush to forest fallow” (140).

Precisely the opposite view of *Imperata* (and other) grasslands has long been held in the plantation, government, and even research communities, namely that *Imperata* grasslands are a tenacious, stable community that will not disappear without human intervention. This view is held notwithstanding the reversal in the academic understanding of grassland ecology over the past half-century as a result of the shift in the natural and social sciences from an equilibrium-based to a non-equilibrium-based paradigm. Whereas most scholars once saw grasslands as exemplars of ecological stability, most now see them as just the opposite, as models of instability and disturbance (Laris et al. 2015; Worster 1990:10). In this sense, the science has caught up with native views of *Imperata* as vulnerable and unstable. This shift in the science has had little effect on development policy toward *Imperata* in places like Indonesia, however, where attention is still focused on how to get rid of these grasslands, with little if any thought given to how they came to be there in the first place. Native land managers assume that if *Imperata* is present, it reflects human intention: the *Imperata* is there because someone wants it there. In contrast, within governmental bodies and even in international development agencies, human intention in creating or preserving *Imperata* grasslands is rarely if ever acknowledged.⁷

Origins and values. Native beliefs in the role of human intention in *Imperata* grassland ecology are reflected in folk mythology in Indonesia regarding the origins of these grasslands. Most Indonesian communities living in or near substantial *Imperata* grasslands possess oral histories of their origins (Dove 1986). For example, the tribal Ogan of South Sumatra trace the origins of *Imperata* in their territory to the arrival of the Portuguese, which ushered in the colonial era. Central Javanese peasants on Merapi Volcano trace the origins of *Imperata* there to the Islamic apostles of historic Java. The political authority cited in each case is the first to have a large-scale, transformative impact on the environment. Thus, Java’s historic Islamic

6. One of the greatest threats to such grasslands is simply the passage of time which, in the absence of continued human intervention, can result in a process of vegetative succession that replaces the pioneering, quick-growing, and sun-loving *Imperata* with slower-growing, more shade-tolerant woody vegetation.

7. Most external observers today note the role of fire in maintaining *Imperata* grasslands, but few if any acknowledge that this is an outcome that is intended by local grassland managers.

courts, with their focus on inland farming and forest clearing are cited, as are the European colonists on Sumatra, the first actors to trigger a massive impact on that island’s natural vegetation. *Imperata*, a colonizing grass, is the perfect indexical plant for colonizing landscape transformation.⁸

Native land managers in Indonesia view *Imperata* as good in some contexts and bad in others. In contrast, the view in plantation, government, and development circles is essentialized: *Imperata* is simply bad. This negative view of *Imperata* is, like the colonial-era views of smallholder rubber, impervious to empirical evidence, which lends a schizophrenic quality even to some academic studies of the grass. For example, Holm et al. (1977) denounce *Imperata* as “a major menace” and “the worst perennial grass weed of southern and eastern Asia” (62), while noting in the same article native use of the grass for fodder and thatch, as well as its usefulness in controlling erosion. MacDonald (2004) similarly excoriates *Imperata* while also recognizing its use as fodder, noting that this was the reason for its introduction to the southern United States.

There is an imaginative dimension to views of *Imperata* among peasants, on the one hand, and on the other, plantation managers, government officials, and even some academic observers; but the former are more rooted in political-ecological reality, whereas the latter are influenced by the anomalous fit of *Imperata* with western agricultural models. Thus, *Imperata* is usually not planted, but it is managed; and it is a pest in some places but a valuable resource in others. There is no analogue to it in the more deterministic western agricultural models that prevail in the plantations. Of most importance, plantation and government actors regard *Imperata* as simply good or bad, not good or bad for one actor versus another, for example, for smallholders versus plantation managers. This denial of alternative views of *Imperata* is critically important to the appropriation of *Imperata* grasslands by state elites.

Summary and Conclusions

Summary

I began this analysis with a review of the relative inattention to plants in posthumanist, multispecies ethnography. Citing the work of Ortiz among others, I proposed to analyze plant-based disciplinary regimes in the Indo-Malay region during the colonial era, especially those enacted on plantations. Nothing was more essential to the logic of colonial plantations than denying the possibility—the very imagination of the possibility—of alternative modes of production. Historic moments of disturbance created opportunities for such exercises of the imagination, and I proposed to track these in the histories of three of the region’s most contentious plants: black pepper (*Piper*

8. Analogous folk histories are widespread in the region: e.g., *Imperata* has been called “European grass” in North Borneo in the belief that Europeans introduced it there to feed their cattle (Roth 1896, vol. 1:405).

nigrum), Para rubber (*Hevea brasiliensis*), and a sword grass (*Imperata cylindrica*). I first discussed notable historic events in each case: the proscription of pepper cultivation in the sixteenth century *Hikayat Banjar* in southeastern Borneo; the tribal dream of rice-eating rubber in the 1930s in western Borneo and the co-occurring international effort to restrict smallholder rubber cultivation (the IRRRA); and the lengthy history of productive native management of *Imperata* and disbelief in such management by plantation managers, government officials, and academics. Intense political conflict has dogged the histories of each of these three plants, which was essentially conflict over the validity of alternative systems of crop management. In the next section of the paper, I reexamined each of these historic events as moments in which the actors involved with these plants transcended tradition, orthodoxy, and even empirical reality to imagine, or not imagine, alternative systems of production; and I examined what conditions—an existential political threat articulated within the context of human-plant relations—are conducive to such leaps of the imagination.

Conclusions

Settlement and the imagination. All three of these plants' histories represent examples of settler colonialism, in which native societies and systems of crop production are displaced by foreign societies and systems of production. This displacement is all about difference: incoming settler systems of production are never the same as the ones they displace. Integral to the logic of settler colonialism is demonstrating that it is non-native, that it is different from the native, and indeed, that it represents the only rationale mode of production. The possibility of alternative systems of production (namely, other than the settler system) threatens the logic of settler colonialism, so the settler focus is on disputing the goodness of native systems of production. A key to the working of settler colonialism, in short, is a thorough-going displacement of native concepts of production with the concepts of the settler society. Settler colonialism of the sort described in this study operates through a reworking of not just the physical landscape but also the conceptual landscape.⁹

Resistance to the conceptual basis of settlement colonialism is intentionally intellectually challenging. It requires a huge exercise of the imagination. Certain historical circumstances seem to be more conducive to this exercise than others, in particular those that disturb the norms of daily existence. Both the early colonial encounter and the global tumult of the depression years seemed to be fertile ground for fantastic trains of thought regarding both the possibility and impossibility of alternate ways of life. Such times make the contingency of hegemonic systems both more visible and more susceptible to manipulation. When such circumstances enabled smallholders to imagine alternative

modes of production, this undermined disciplinary structures and changed power relations.

Some discourses seem to be more conducive to flights of the imagination than others. Those discussed here include humorous thought (the hot vapors of pepper), alimentary principles (the rice-eating rubber), and imagery of disease (the smallholder rubber) and infestation (*Imperata*). It does not seem an accident that they involve people and plants, which is to say people and nonpeople. As von Uexküll (2010 [1934]) argued, the difference between species in their perceived worlds or *umwelten* is the quintessential case of ontological difference. It makes sense, therefore, that contemplation of the human-plant divide facilitates contemplation of conceptual divides in systems of agricultural production. As Feinberg, Nason, and Sridharan (2013) write, "One of the greatest strengths of multispecies ethnography is the 'speculative wonder' captured in its ontological revisions, a wonder rife with potential to generate alternative ethical possibilities for living in the world" (2).

The case of oil palm. The approach taken here can be applied to the contemporary case of oil palm. There has been a vast expansion over the past generation of oil palm (*Elaeis guineensis* Jacq.) cultivation in the Indo-Malay region (Byerlee, Falcon, and Naylor 2017; Carlson et al. 2012). As with pepper and rubber, one of the most important characteristics of the plant at the center of this industry is its non-native origin: oil palm is an exotic from West Africa, first introduced to the East Indies in the second half of the nineteenth century.

Oil palm has been developed by the para-statal plantation sector in Indonesia and Malaysia strictly as a plantation crop. Governments have supported smallholder cultivation of oil palm only when attached to plantations: a succession of government projects over the past half-century, called nucleus estates, credit cooperatives, and partnerships, have organized smallholdings around an inner estate core, upon which they are dependent for credit and processing of their oil (Potter 2016:321–324). Independent smallholdings have been routinely appropriated by oil palm estates, resulting in widespread disruption of and conflict with rural communities (Cramb and McCarthy 2016; McCarthy, Gillespie, and Zen 2012; Potter 2016).

This exclusive emphasis on the estate model of development ignores the history of smallholder cropping in its African homeland (van Allen 1972); it ignores the robust history of smallholder commodity production in the region (Dove 2011); it ignores the fact that 80% of contemporary oil palm production comes from smallholders in Thailand, the region's third largest producer; and it ignores the spontaneous adoption of oil palm by smallholders, independent of government schemes, across Malaysian and Indonesian Borneo, by 2013 reaching 42% of total acreage under oil palm (Byerlee 2014; Cramb and Sujang 2013; Potter 2016). The emphasis on estate versus smallholder development of oil palm development directly benefits the plantation establishment in several ways: it reduces market competition from smallholders; insofar as this underpins land-grabbing by the plantation companies, it frees up land for plantation ex-

9. As Stoll (2017) similarly writes of the dispossession of rural populations in Appalachia, "Removal began with an intellectual process" (26).

pansion; and it creates a cheap labor pool for the plantations (Li 2017).

Byerlee (2014:591) attributes the dominance of the estate model to factors similar to those that favored it during the colonial era: high commodity prices, a convergence of state and investor interests, and a high modern belief in the virtues of agribusiness. Some observers regard the oil palm development as a quintessential example of “land grabbing” or “accumulation by dispossession,” which suggests a process of forceful assault on the traditional rights of local peoples (Gellert 2015; White et al. 2012). Before the physical landscape can be grabbed, however, the conceptual landscape must first be secured; before local people can be dispossessed, work must be done so that it does not appear like dispossession is at issue (Bissonnette 2013). The primary conceptual work of land grabbing and dispossession involves ruling out any possible alternative model, which explains the erasure of smallholders from modern oil palm development, just as has been done with other smallholder agricultural systems over the past half-millennium.

Smallholders contest this marginalization not only by planting oil palm themselves but by grappling head-on with the conceptual threat it represents. An example is the “rumor panics” that periodically sweep across Borneo’s new oil palm landscapes, warning of strangers who are kidnapping Dayak to traffic in their organs, which has led in some instances to the murders of outsiders (Semedi 2014). Fear that market representatives from the wider world are stealing their organs can be read as a fear of an incommensurate and fatal exchange, which in many respects resembles the historic deathbed speech against pepper or the rice-eating rubber dream. This is fear of the biopolitical discipline of the plantation model of production and an inchoate cry for an alternative.¹⁰

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References Cited

- Aso, Michitake. 2009. The scientist, the governor, and the planter: the political economy of agricultural knowledge in Indochina during the creation of a “science of rubber,” 1900–1940. *East Asian Science, Technology and Society* 3(2–3):231–256.
- Badan Pusat Statistik. 2016. *Statistik karet Indonesia/Indonesian rubber statistics 2016*. BPS-Statistics Indonesia.
10. Cf. the analysis by Montefrio, Ortega, and Josol (2014) of imaginaries concerning oil palm that migrant laborers bring back to Palawan in the Philippines from plantations in Sabah, East Malaysia.
- Bartlett, Harley H. 1956. Fire, primitive agriculture, and grazing in the tropics. In *Man’s role in changing the face of the earth*. W. L. Thomas, ed. Pp. 692–720. Chicago: University of Chicago Press, for the Wenner-Gren Foundation for Anthropological Research and the National Science Foundation.
- . 1957. *Fire in relation to primitive agriculture and grazing in the tropics: an annotated bibliography*, vol. 2. Ann Arbor: University of Michigan Department of Botany.
- Bissonnette, J. F. 2013. Development through large-scale oil palm agribusiness schemes: representations of possibilities and the experience of limits in West Kalimantan. *SOJOURN: Journal of Social Issues in Southeast Asia* 28(3):485–511.
- Bonneuil, Christophe. 2000. Development as experiment: science and state building in late colonial and postcolonial Africa, 1930–1970. *Osiris* 15:258–281.
- Bradley, Bethany A., David S. Wilcove, and Michael Oppenheimer. 2010. Climate change increases risk of plant invasion in the eastern United States. *Biological Invasions* 12(6):1855–1872.
- Bryson, Charles T., and Richard Carter. 1993. Cogongrass, *Imperata cylindrica*, in the United States: weed alert! *Weed Technology* 7:1005–1009.
- Burow, Paul, Samara Brock, and Michael R. Dove. 2018. Unsettling the land: indigeneity, ontology, and hybridity in settler colonialism. In *Indigenous resurgence, decolonization, and movements for environmental justice*. Special issue, *Environment and Society: Advances in Research* 9:57–74.
- Byerlee, Derek. 2014. The fall and rise again of plantations in tropical Asia: history repeated? *Land* 3(3):574–597.
- Byerlee, Derek, Walter P. Falcon, and Rosamund Naylor. 2017. *The tropical oil crop revolution: food, feed, fuel, and forests*. New York: Oxford University Press.
- Carlson, Kimberly M., Lisa M. Curran, Dessy Ratnasari, Alice M. Pittman, Britaldo S. Soares-Filho, Gregory P. Asner, Simon N. Trigg, David A. Gaveau, Deborah Lawrence, and Hermann O. Rodrigues. 2012. Committed carbon emissions, deforestation, and community land conversion from oil palm plantation expansion in West Kalimantan, Indonesia. *Proceedings of the National Academy of Sciences of the USA* 109(19):7559–7564.
- Carpenter, Carol. 1987. Brides and bride-dressers in contemporary Java. PhD dissertation, Cornell University, Ithaca, NY.
- Conklin, Harold C. 1959. Shifting cultivation and succession to grassland climax. *Proceedings of the Ninth Pacific Science Congress* 7:60–62.
- Cramb, Rob A., and J. F. McCarthy. 2016. *The oil palm controversy: smallholders, agribusiness and the state in Indonesia and Malaysia*. Singapore: National University of Singapore Press.
- Cramb, Rob A., and Patrick S. Sujang. 2013. The mouse deer and the crocodile: oil palm smallholders and livelihood strategies in Sarawak, Malaysia. *Journal of Peasant Studies* 40(1):129–154.
- Derrida, Jacques. 2008 (2006). *The animal that therefore I am*. Marie-Louise Mallet, ed. David Wills, trans. New York: Fordham University Press.
- Dove, Michael R. 1986. The practical reason of weeds in Indonesia: peasant versus state views of *Imperata* and *Chromolaena*. *Human Ecology* 14(2):163–190.
- . 2011. *The banana tree at the gate: the history of marginal peoples and global markets in Borneo*. New Haven, CT: Yale University Press.
- Ellen, Roy. 2016. Is there a role for ontologies in understanding plant knowledge systems? *Journal of Ethnobiology* 36(1):10–28.
- Feinberg, Rebecca, Patrick Nason, and Hamsini Sridharan. 2013. Introduction: human-animal relations. *Environment and Society: Advances in Research* 4(1):1–4.
- Foucault, Michel. 1995. *Discipline and punish: the birth of the prison*. New York: Vintage.
- Geertz, Clifford. 1963. *Agricultural involution: the processes of ecological change in Indonesia*. Association of Asian Studies Monographs and Papers, no. 11. Berkeley: University of California Press.
- Gellert, Paul K. 2015. Palm oil expansion in Indonesia: land grabbing as accumulation by dispossession. In *States and citizens: accommodation, facilitation and resistance to globalization*. J. Shefner, ed. Pp. 65–99. Current Perspectives in Social Theory, vol. 34. Bingley, United Kingdom: Emerald Group.
- Hadiwidjojo, G. P. H. 1956. Alang-alang kumitir. Paper presented at the Radyapustaka, Solo, Central Java, Indonesia, December 28.
- Hall, Matthew. 2011. *Plants as persons: a philosophical botany*. Albany: State University of New York Press.
- Haraway, Donna J. 2003. *The companion species manifesto: dogs, people, and significant otherness*. Chicago: University of Chicago Press.
- Hardin, Rebecca. 2001. *Concessionary politics in the western Congo Basin: history and culture in forest use*. Working paper. Washington, DC: World Resources Institute.

- Holm, Leroy G., Donald L. Plucknett, Juan V. Pancho, and James P. Herberger. 1977. *The world's worst weeds: distribution and biology*. Honolulu: University Press of Hawaii, for the East-West Center.
- Kirksey, Eben. 2015. *Emergent ecologies*. Durham, NC: Duke University Press.
- Kohn, Eduardo. 2013. *How forests think: toward an anthropology beyond the human*. Berkeley: University of California Press.
- Laris, Paul, Sebastien Caillaud, Sepideh Dadashi, and Audrey Jo. 2015. The human ecology and geography of burning in an unstable savanna environment. *Journal of Ethnobiology* 35(1):111–139.
- Lewis-Jones, Kay E. 2016. World-making with plants. *Environment and Society: Advances in Research* 7:1–7.
- Li, Tania M. 2017. The price of un/freedom: Indonesia's colonial and contemporary plantation labor regimes. *Comparative Studies in Society and History* 59(2):245–276.
- Lippincott, Carol L. 2000. Effects of *Imperata cylindrica* (L.) Beauv. (Cogongrass) invasion on fire regime in Florida Sandhill (USA). *Natural Areas Journal* 20(2):140–149.
- MacDonald, Gregory E. 2004. Cogongrass (*Imperata cylindrica*)—biology, ecology, and management. *Critical Reviews in Plant Sciences* 23(5):367–380.
- McCarthy, John F., Piers Gillespie, and Zahari Zen. 2012. Swimming upstream: local Indonesian production networks in “globalized” palm oil production. *World Development* 40(3):555–569.
- Montefrio, Marvin Joseph F., Yasmine Y. Ortiga, and Ma. Rose Cristy B. Josol. 2014. Inducing development: social remittances and the expansion of oil palm. *International Migration Review* 48(1):216–242.
- Ortiz, Fernando. 1995 (1947). *Cuban counterpoint, tobacco and sugar*. Durham, NC: Duke University Press.
- Pigeaud, T. G. T. 1960–1963. *Java in the fourteenth century*, 5 vols. The Hague: Martinus Nijhoff.
- Potter, Lesley. 2016. How can the people's sovereignty be achieved in the oil palm sector? is the plantation model shifting in favour of smallholders? In *Land and development in Indonesia: searching for the people's sovereignty*. J. F. McCarthy and K. Robinson, eds. Pp. 315–342. Singapore: ISEAS-Yusof Ishak Institute.
- Ras, Johannes Jacobus. 1968. *Hikajat Bandjar: a study in Malay historiography*. Koninklijk Instituut voor Taal-, Land- en Volkenkunde: Bibliotheca Indonesica 1. The Hague: Martinus Nijhoff.
- Reid, Anthony. 1993. *Expansion and crisis*, vol. 2 of *Southeast Asia in the age of commerce, 1450–1680*. New Haven, CT: Yale University Press.
- Robequain, C. 1955 (1946). *Malaya, Indonesia, Borneo, and the Philippines: a geographical, economic, and political description of Malaya, the East Indies, and the Philippines*. E. D. Laborde, trans. London: Longmans, Green.
- Ross, Corey. 2017. Developing the rain forest: rubber, environment and economy in Southeast Asia. In *Economic development and environmental history in the Anthropocene: perspectives on Asia and Africa*. G. Austin, ed. Pp. 199–218. London: Bloomsbury Academic.
- Roth, Henry L. 1896. *The natives of Sarawak and British North Borneo*, 2 vols. London: Truslove & Hanson.
- Semedi, Pujo. 2014. Palm oil wealth and rumour panics in West Kalimantan. *Forum for Development Studies* 41(2):233–252.
- Sheridan, Michael. 2016. Boundary plants, the social production of space, and vegetative agency in agrarian societies. *Environment and Society: Advances in Research* 7:29–49.
- Sherman, George. 1980. What “green desert”? the ecology of Batak grassland farming. *Indonesia* 29:112–148.
- Stoler, Ann. 1985. *Capitalism and confrontation in Sumatra's plantation belt, 1870–1979*. New Haven, CT: Yale University Press.
- Stoll, Steven. 2017. *Ramp Hollow: the ordeal of Appalachia*. New York: Hill & Wang.
- Tsing, Anna L. 2005. *Friction: an ethnography of global connection*. Princeton, NJ: Princeton University Press.
- . 2015. *The mushroom at the end of the world: on the possibility of life in capitalist ruins*. Princeton, NJ: Princeton University Press.
- Tsing, Anna Lowenhaupt, Andrew S. Mathews, and Nils Bubandt. 2019. Patchy Anthropocene: landscape structure, multispecies history, and the re-tooling of anthropology; an introduction to supplement 20. *Current Anthropology* 60(suppl. 20):S186–S197.
- Turner, Victor W. 1967. *The forest of symbols: aspects of Ndembu ritual*. Ithaca, NY: Cornell University Press.
- van Allen, Judith. 1972. “Sitting on a man”: colonialism and the lost political institutions of Igbo women. *Canadian Journal of African Studies* 6(2):165–181.
- Von Uexküll, Jakob. 2010 (1934). *A foray into the world of animals and humans*. J. D. O'Neil, trans. Minneapolis: University of Minnesota Press.
- White, B., S. M. Borras Jr., R. Hall, I. Scoones, and W. Wolford. 2012. The new enclosures: critical perspectives on corporate land deals. *Journal of Peasant Studies* 39(3–4):619–647.
- Wolff, John U. 1994. The place of plant names in reconstructing Proto-Austronesian. In *Austronesian terminologies: continuity and change*. A. K. Pawley and M. D. Ross, eds. Pp. 511–540. Department of Linguistics, Research School of Pacific and Asian Studies. Canberra: Australian National University.
- Worster, Donald. 1990. The ecology of order and chaos. *Environmental History Review* 14(1/2):1–18.