

Consider the Coconut: Scientific Agriculture and the Racialization of Risk in the American Colonial Philippines

THERESA VENTURA
Concordia University

Perhaps no commodity better conjures the tropical imaginary than the coconut. Whether depicted in postcards of tree-lined beaches or featured in rum-based drinks, the stone fruit signifies a life of ease and splendour in equatorial climes. The more recent embrace of low-carb and high-fat diets, however, elevated coconut oil to the pantheon of “superfoods”—fruits, vegetables, whole grains, and lean proteins hailed not just for their nutritive content but as aids to weight loss, disease prevention, and healing. In five printings between 1999 and 2013, Bruce Fife’s *The Coconut Oil Miracle* deemed it “the premier dietary fat of all time.”¹ Cherie and John Calbom’s *The Coconut Diet* (2005) touted coconut oil’s ability to make the consumer feel “Healthy, trim, energetic, and alive!” during a three-week journey “to a slimmer you.”² For proof of coconut oil’s enduring goodness, Fife pointed to “the natives who inhabit the islands of the South Pacific.” “These people in their tropical paradise,” he informed his readers, “enjoy a remarkable degree of good health, relatively free from the aches and pains of degenerative disease that plague most of the rest of the world.”³ Likewise, the Calboms held the pre-World War II Pacific, in which “people who ate traditional foods in countries such as the Philippines were rarely sick or overweight,” as evidence of the coconut’s healing power.⁴ Such claims launched a coconut cottage industry in which diet gurus and web-based influencers offered coconut oil supplements and extrarefined cold-pressed virgin coconut oil as an alternative to soy and canola oils. The coconut craze quickly extended beyond oil to include coconut flour pounded from the dried meat as a high-fiber, gluten-free alternative to wheat flour; coconut sugar

crystalized from flower sap as a low glycemic alternative to cane sugar; and coconut milk as a vegan alternative to dairy milk.⁵

The health food movement's latest trend in its ongoing rejection of carbohydrates in favor of fats alarmed cardiologists and public health experts. Studies in the journal of the American Heart Association noted a possible link between coconut oil's high levels of LDL cholesterol, colloquially known as the "bad cholesterol" which carries a higher risk for coronary disease.⁶ In a now infamous 2018 talk at the University of Freiburg, Harvard epidemiologist Karin Michels called coconut oil "pure poison."⁷ Delivered in German, the talk captured headlines in countries that are net importers of coconut products and also commanded the attention of exporting nations and industry trade groups. India's horticultural minister demanded that Michels retract her statement while the International Coconut Community (ICC), a twenty-nation member organization headquartered in Jakarta, issued multiple defenses of coconut oil's superfood status.⁸ Setting aside the merits of competing health claims, the ICC's response to Michels was a rare albeit brief instance in which the global political economy of coconut oil became visible to North American consumers. The North American demand for coconut products tethers small- and large-scale coconut planters and wage pickers in the South and Southeast to a multitude of producer associations, cooperatives, national governments, and multinational marketing companies who deliver the product to health-conscious consumers. Coconuts—an enduring symbol of tropical ease—are big business. The Philippines, which the Calboms held as evidence of the oil's benefits, produces an estimated 1.9 million tons of coconut products each year and account for forty-nine percent of the world's exports. Coconut farms are found in most of the country's eighty-one provinces, covering 3.3 million hectares or thirty percent of farmlands.⁹ This high output persists despite high poverty rates among coconut farmers, maturing trees with waning production, recurring infestations of coconut scale insects requiring tree felling, and an intensification of destructive typhoons precipitated by the climate crisis.¹⁰ Production depends on forest clearing for new planting, in turn exacerbating the climate crisis behind the industry's woes. How does a commodity produced by an ailing industry attain and sustain the allure of a natural superfood?

Adrienne Bitar's *Diet and the Disease of Civilization* (2018) offers an answer from the perspective of consumption. Coconuts, she writes, play a leading role in a larger North American "food story" in which eating against the (refined) grain can recapture "an original, innocent world and mourn the descent of the human race into modern disease."¹¹ Diet jeremiads decrying the "fall of man" include the Paleo diet, in which men and women are urged to eat like evolutionary ancestors and the Detox diet, which calls for abstention from refined and processed foods. Coconuts also feature in Pacific Islander efforts to decolonize the everyday dietary. Citing alarmingly high rates of diabetes and obesity, Dr. Terry Shintani's *The HawaiiDiet* positions the replacement of fried and refined foods with "foods eaten in Hawai'i before the onset of Western

influence” as part of a larger personal, cultural, and ecological healing from the ravages of colonialism.¹² But in making this case, fall of man diets “eternalize a timeless past,” homogenize diversity among Pacific Islanders, and sharpen alleged innate and biological differences between Pacific Islanders. The diets, Bitar writes, exemplify what Renato Rosaldo calls “imperialist nostalgia”—a romanticization of that which has been lost to colonial violence in the name of progress of development.¹³ This nostalgia for the coconut echoes outside of diet culture as well. Recall, for example, Lin-Manuel Miranda’s invitation to “consider the coconut” as the Motunui villagers of Disney’s *Moana* (2016) praise the tree, its husk, fibers, water, and meat as “*all we need*”.

Hsu and Vázquez’s “molecular intimacies of empire” can move us toward an account of the coconut’s superfood status that incorporates production. Indeed, the seemingly paradoxical relationship between “superfood” and “ailing agriculture” illuminates the processes by which US empire and capital accumulation extend across geographic space and render biological materials into component parts such as oil and synthetic materials while relegating the risks of those processes to producers and laborers at the supply end of the commodity chain. This essay’s focus is therefore on the American agricultural entrepreneurs, tropical research stations, and penal farms that built a coconut plantation economy in the southern Philippines after 1898. These Southern Philippine plantations were just one site in what others identify as a trans-imperial “coconut zone” extending west from the equatorial Pacific Islands to southern India and were also akin to Dole’s pineapple empire in Hawai’i and United Fruit’s banana empire in Central America.¹⁴ Coconuts, pineapples, and bananas constituted an American equatorial fruit empire that fed upon and nurtured discourses of tropicality—the late nineteenth century division of the globe into tropical and temperate worlds. Tropicality held that planning for temperate winters instilled Euro-Americans with traits conducive to industry while the heat and humidity of tropical climes produced a fecund nature and indolent natives who lived off, rather than mastered, the land.¹⁵ The exaggerated fecundity of the tropics was simultaneously a threat to white bodies and a justification for Indigenous dispossession that imagined precontact idylls in which fruits sprang forth from nature rather than human cultivation. The agricultural entrepreneurs of the fruit empire cast coercive labor regimes as necessary improvements on primitive agricultural methods. They neutralized fears of tropical landscapes by stressing their singular ability to “tame” jungles and domesticated foreign foods by emphasizing health. The promotional materials of United Fruit anointed the banana a “superfood” as early as the 1920s.¹⁶ A robust scholarship on tropical commodities has since reconnected the American appetite for bananas and pineapples to colonial plantation.¹⁷ The colonial plantations of the southern Philippines, however, were severed from this larger history of fruit empires largely because the sites produced copra, the dried kernels from which the oil is expelled, and coconut oil was initially valued for its industrial applications. Coconut plantations preceded the embrace of coconut as a food by decades.

The following essay offers an episodic accounting of the American coconut empire in the southern Philippines. It begins with the union of Euro-American industrialization and economic botany and colonial state power in the making of coconut plantations and a Philippine copra export industry in the early twentieth century. Coconut oil oozed unseen into soap, candles, and dynamite before making a more visible debut during the first world war as an ingredient in the butter substitute oleomargarine. Because Euro-American consumers already saw oleomargarine as unnatural, advertisers emphasized coconut oil's whiteness as a sign of purity, healthfulness, and closeness to nature. But in the interwar period, North American dairy and cottonseed farmers cast Filipinos and their copra as impure in their effort to restrict its import. Their campaign blurred what were already fuzzy boundaries between the natural and the primitive, and between individual bodily risk and risk to the body politic. Yet the nearly four million Filipinos linked to the coconut commodity chain ultimately bore a collective risk that scholars call the "body burdens" of toxic exposure.¹⁸ Imprisoned laborers risked malaria by clearing forests for plantations while planters and pickers later faced exposure to the pesticides and herbicides used to manage the ecological risks of monocropping. The US racialization of Philippine copra as impure placed what one Philippine official called a "black mark" on the country's copra in global markets.¹⁹ Independence and the looming loss of US markets in 1946 led Philippine planters to encourage Filipinos to bear the risks of monocropping by eating more of the coconuts they grew and to forge new alliances with other Southeast Asian producers. Such alliances paved the way for the International Coconut Committee. The marketing machinery of the ICC coupled with the interwar association of coconut oil as "unrefined," and a second world war literature on the coconut as a survival food primed the coconut for its reinvention as a superfood. Far from a traditional food of the tropical Pacific, the coconut's place in the Philippine economy and dietary is an exemplar of the edible and unequal intimacies of empire.

Scientific Agriculture and Colonial Plantation

Botanists have long debated the origins and migration of the coconut palm tree across the equatorial Pacific and Indian Ocean regions. Because the husks containing the kernel, water, and meat can root after exposure to seawater, nineteenth-century plant geographers speculated that maritime currents, rather than mariners, carried the husks from a singular origin point in either the Americas or East Asia. The thesis, much like tropicity, minimized the human role in plant propagation and has since yielded to a new consensus that allows for a multisited provenance and a guiding human hand.²⁰ Asian-mainland travellers likely introduced the tree to the Philippine archipelago between the fifteenth and sixteenth centuries, where it coevolved with the coastal ecology. Coconut palms thrive in sandy soils with circulating ground water. It gives back to the coast by blunting the impact of typhoons and absorbing "wash-over" into its dense root systems. The coconut palm also gave back to the communities who

tended to the trees. Coconut fronds became shingles that roofed nipa homes; its husked fibers caulked ships; shells and husks could be used as household tools and burnt for fuel. Food vendors sweetened rice cakes with coconut sugar and fermented the tree's sap into vinegar and *tuba*, a potent alcohol. Baked in open air under the hot sun, the kernels of the coconut formed copra, from which oil for cooking, washing, lubricating, and medicine was pressed. These myriad uses may have protected small cultivators from debt tenancy as financial capital encouraged the planting of sugar and hemp. The coconut was so ubiquitous that landlords in southeastern Luzon's hemp-exporting *Kabikol* region allowed fallen nuts to compost in the soil.²¹ This would change within two decades of US rule at which point copra constituted thirty percent of Philippine exports—third behind the far more established trade in sugar and hemp.²²

The rapid rise in copra exports points to the centrality of economic botany and scientific agriculture in making the American colonial state in the Philippines. The US declared war on Spain in 1898, the same year that the United States Department of Agriculture (USDA) opened an Office of Foreign Seed and Plant Introduction (OFSPI). The implications of this coincidence in timing were not lost on the USDA officials who rallied behind annexation of the Philippines. OFSPI director David Fairchild thought the USDA should “send an expedition with the invading army to gather together such information and material, plants, seeds, etc., as would give an idea to the resources of the country.” USDA Secretary James Wilson pushed for direct oversight of the archipelago.²³ Both men anticipated opening a tropical research institute in the Philippines modeled on the Lands Plantentium in Buitenzorg, Java—then the premier colonial research institute in equatorial Asia.²⁴ Fairchild, who had studied at Buitenzorg during his collection expeditions in Southeast Asia, wrote that the institute awakened him to “the possibilities there are in the organizing of such colonies if they are properly managed.”²⁵ American annexation of the Philippines the next year did not result in formal USDA offices in the colony. Instead, USDA botanists and crop and farm machinery specialists staffed a separate Philippine Bureau of Agriculture (PBA) that retained close ties with the USDA. Secretary Wilson urged the PBA's first director, Frank Lamson Scribner, to work with the needs of an industrializing American economy in mind. “Fibers, coffee, rubber, spices, and such things as we cannot produce should have most attention.”²⁶ Coconuts, notably, were missing from this list.

Coconuts came onto the radar of the Philippine Bureau of Agriculture through the food experiences of soldiers and trans-imperial scientific exchanges facilitated by research centers like Buitenzorg. Wary of canned commissary foods following the “embalmed beef scandal” in which cheap meat tinned in Chicago poisoned soldiers in Cuba, US privates flush with cash turned to the communities they were occupying for food. René Alexander D. Orquiza's mining of soldiers' letters shows how a taste for coconuts and native foods turned soldiers into boosters for the development of Philippine food industries.²⁷ Private Andrew Pohlman wrote home that, “[w]e learned that the interior of a young coconut tree would furnish a meal which was not complete for heavy marching but it did not make us sick, as some meals in the company mess.”²⁸

The PBA sent economic botanists and plant explorers to Java, Sri Lanka, and Ceylon to investigate tropical crops. These travels resulted in the PBA's first report on the coconut plant and copra trade, authored by William S. Lyon in 1903.

Lyon's report detailed the impressment of the coconut into an emerging military-industrial complex as an oleochemical, a general term for a vegetable fat with industrial applications. "Chemical science," Lyon wrote, "produced from the cocoanut a series of food products whose manufacture has revolutionized the industry and placed the business of the manufacturer and of the producers upon a plane of prosperity never before enjoyed."²⁹ French chemists in Marseilles distilled from copra lauric acid, an essential washing agent, and incorporated coconut oil into *oleomargarine*, a solid fat composed of beef tallow, water, and a vegetable oil such as coconut valued for its shelf stability. By 1902, four or five large factories in France met the "world's demand for 'vegetaline,' 'cocoaline,' or other products with suggestive names, belonging to this infant industry."³⁰ The high triglyceride content of coconut oil led British chemists to investigate its potential as a source of nitroglycerin when heated under pressure with an alkali such as lye. According to one mid-twentieth century account, the "recovery of [nitro]glycerin" from copra was twenty-five to thirty percent higher than that of other high lauric acid vegetable oils.³¹ The coconut tree—and by extension its planters, pickers, and Pacific landscapes—were incorporated into an industrial war machine. So valuable were coconuts during the Great War that the British Home Office imposed high duties on copra exports from the colonies. The shredded husks, meanwhile, became gas mask filters protecting soldiers from chemical weapons. The war that began as a response to the geopolitical rivalries of technological imperialism was fought over and with the biological materials of empire.³²

In addition to detailing the economic potential of copra, Lyon offered a set of proscriptions for the growth of a Philippine copra export industry. This included bioengineering a tree best suited to the needs of a plantation economy. Coastal palm trees fruited infrequently due to the need to expend more energy on root growth in search of subterranean nutrition. Inland trees, by contrast, directed that energy toward trunk growth which, when paired with top pruning, encouraged greater flowering. Far from the spindly tree of the tropical imagination, the coconut tree of the plantation economy was a short and squat prolific flowerer. Further travels through the coconut zone endowed PBA botanists with insight into how to manipulate trees to frequent flowering. Thomas P. Hanley, a special agent in charge of farm machinery, reported that a chance train ride from Colombo to Kandy placed him "in the acquaintance of an educated Singalese" who owned a plantation "upon which he made coconut growing a specialty." The unnamed informant shared that the trees generated best when spaced twenty-five to thirty feet apart, which in turn mandated more acreage for each plantation. The resulting dwarf trees better withstood strong winds and "the fruit can easily be gathered by our native boys, who are accustomed to the work."³³ The biggest challenge to the potential coconut planter, though, was attracting investment capital while the tree took seven years from planting to mature.

Here, agents of the colonial state filled in, proving the efficacy of large coconut plantation by using forced labor on penal farms.

PBA scientists and colonial administrators moved seamlessly between service to the colonial state and their own private agricultural entrepreneurial schemes. Key to this rotation was their access to unfree Filipino laborers and their ability to attract American investors to the archipelago. No figure better embodies this set of relations than Dean Conant Worcester. Worcester, a University of Michigan-trained zoologist, made two late-nineteenth-century collecting expeditions to South America and Southeast Asia along a Brazil to the Philippines route first blazed by British naturalist Alfred Russell Wallace.³⁴ Worcester may have remained in Michigan had not the American war against Spain generated press and political interest in its largest Pacific colony. Worcester and his former expedition partner, Frank S. Bourns, published a series of articles detailing the history of Spanish misrule, the archipelago's untapped natural wealth, and the Philippine "types" too divided to constitute an independent nation.³⁵ Worcester's deft pen and expert self-promotion earned him a post on the governing Philippine Commission, a seven-member body appointed by the US president. Worcester served as the commission's "director of the interior" until 1913, making him one of the longest-serving US administrators in a colonial government known for short tenures. Worcester's longevity was due, in part, to his portrayal of US rule as a defense of upland "tribal peoples" from more Hispanicized yet vicious lowland "Malays." The portrayal earned Worcester the enduring ire of the Philippine land-owning elite but was nonetheless embedded into the racial geography of empire. While elite power forced Philippine commissioners to work out power-sharing agreements in the form of an elected Assembly, commissioners and the American military retained direct oversight in areas deemed "non-Christian." The racial division effectively gave Worcester's Interior Bureau an open hand to mine Luzon's upland Cordillera for mineral wealth and to work alongside the US military government in the southern "Moro Province," a vast area that included the island of Mindanao. Among Worcester's many initiatives were explorations into gold mining in Benguet, Luzon; the introduction of cattle grazing in Bukindon, Mindanao; and ample assistance to Bourns's Philippine Lumber and Development Company, which maintained interests across the islands. Finally, with the PBA under his purview, Worcester was in close touch with Lyon and the chemists who had turned their attention toward the copra.³⁶

Worcester's 1911 pamphlet, "Coconut Growing in the Philippines," beckoned investors to the islands.³⁷ His rhetoric is an exemplar of the strategies agricultural entrepreneurs invoked to draw financial capital to the growing fruit empires in the Pacific and Central America. Agricultural entrepreneurs balanced their praise for the natural capacity of equatorial lands with a condemnation of the "native" practices that failed to develop robust export economies. "The agricultural methods of the natives," Worcester wrote, "have violated every known rule. Seldom has the ground been really prepared for planting. The trees invariably stand too thickly. The Filipino cannot rid himself of the idea that the more seed he sows the greater will be his harvest." Such

carelessness produced the dreaded “tall spindling trees” that bore “nuts sparingly.” Yet, despite the waste, “the Philippine Islands produced during the fiscal year ended June 30, 1909, approximately 231,787,050 pounds of copra ... This output excels that of Java, of the Straits Settlements, of Ceylon, or of the South Sea Islands, and places the Philippines at the head of the list of coconut growing countries. In fact, during the year mentioned the Philippines produced about one third of the world’s output.”³⁸ Worcester asked his investor-reader to imagine the potential if Philippine labor could be disciplined to scientific methods. “If this result has been obtained under the haphazard methods in vogue, what may be anticipated when due care is exercised in selecting suitable land, when it is properly cleared and planted, and when suitable cultivation is continued while the young trees are growing and after they begin to produce?”³⁹ The pamphlet paid immediate dividends. Worcester boasted to the army general Frank McIntyre that he was “glad the publication was insisted upon, because it has already brought a good bit of money out here for investment in coconut growing. There are two men in the islands now hunting land. One of them has \$250,000 available, and the other has \$50,000 with the assurance of more as fast as it is needed.”⁴⁰

The prison was the institution by which Americans disciplined Philippine labor to copra exports. The declared end of war in 1902 saw the transformation of insurgents from enemies of the state to criminals. The Philippine Constabulary, an archipelagic-wide police force composed of American leadership and Philippine recruits, continued the wartime practice of concentrating subversive communities, policed new crimes such as vagrancy, and accompanied US land surveyors and scientific expeditions throughout the islands. The Constabulary’s arrest policies effectively created a pool of laborers to build an extractive infrastructure of roads, plantations, and penal farms. Five hundred “well-behaved” prisoners constructed a road between the Province of Albay’s Tabaco and Ligao municipalities. “In this way,” wrote one commissioner, “one of the most beautiful roads in the archipelago was constructed, and served a most useful purpose, as it tapped a region very productive of Manila hemp.”⁴¹ In southern Luzon’s Laguna province, an additional five hundred prisoners constructed roads to serve the young coconut industry. Laguna Provincial Governor Cailles requested that “Moros, Ilocanos, Bicolis, and Visayans, but not Tagalogs” be sent to the Tagalog-speaking province so that the prison laborers would not escape. Cailles ordered each man to wear a “light chain welded around his ankle and fastened to his belt, so that he cannot move without making a slight clanking sound” and displayed the bullet-ridden body of one unfortunate soul who attempted to escape.⁴² In Mindanao, military governor Leonard Wood oversaw a prison labor road-building project between Overton and Marahui, an area that American officials hoped to devote to rubber plantations.⁴³

Penal farms were laboratories of economic botany and labor control. The two largest were the San Ramon colony in Zamboanga, Mindanao and the Iwahig colony on the island of Palawan. The San Ramon penal farm in Zamboanga, Mindanao housed Muslim dissidents and an early order called for the planting of cacao, rubber, hemp,

coffee, and a variety of vegetables in addition to coconuts on the prison's approximately one thousand four hundred and fifteen hectares.⁴⁴ The cacao orchard failed, and rubber did not take but coconut thrived. Bureau of Agriculture officials "urgently" recommend that "labor, farming tools, and draft animals be found to ready the ground for an additional 200,000 coconut trees."⁴⁵ By 1915, the colony's coconut plantation had twenty-five thousand mature trees, nine thousand seedlings awaiting transplanting, and five thousand sprouts in seed beds. The penitentiary also included a state-of-the-art drying house, which sped the drying process by controlling the heat. Officials selected Iwahig for a penal farm due to its proximity to the deep-water port, Puerto Princessa. As "virgin" land, that plantation required vast amounts of wartime labor to clear the site's dense and biodiverse rain forest. Each penal farm produced enough copra for direct sales to oil refiners, in turn encouraging Americans to point to each as exemplars of progressive penology and labor control. Official reports of the Philippine Commission differed little from promotional pamphlets. San Ramon, one report boasted, "well merits classification as an educational centre rather than as a penitentiary."⁴⁶ All four hundred and seventy-two prisoners were "employed in productive labor ... their employment is limited to the sort of work in which training will be of the greatest value to them upon their return to their homes, whether these be in the mountains or in the most remote fishing villages"—a remarkable assertion given that a third of prisoners were serving life sentences and excepting what the report elsewhere referred to as the occasional "escape of prisoners from San Ramon Farm and the Iwahig Penal Colony."⁴⁷

Prisoners absorbed the risks inherent to the large-scale planting of a tree that takes seven years to come to maturity. But once this period had passed, private investors flocked to the southern Philippines and financed the operations of the coconut empire. The largest was the International Banking Corporation, the first American bank with a charter granting it the power to open branches outside the continental United States. Its executive board and shareholders included rail and shipping magnates, many with close connections to the administration of Theodore Roosevelt. Roosevelt, in turn, authorized the IBC to act as the fiscal agent of the state in the Caribbean, notably Panama during the canal's construction, in China, to collect indemnities from the Boxer Rebellion, and in the Philippines.⁴⁸ IBC credit smoothed the transition of colonial administrators to private business. Worcester and the former director of prisons, ML Stewart, used an IBC loan to form the American-Philippine Development Company (APDC) in 1913. The company operated a private plantation near San Ramon managed by a former San Ramon superintendent. The connections and proximity effectively created a prison-to-plantation pipeline filtering freed prisoners into contract work on the APDC plantation. Ever the agricultural entrepreneur, Worcester portrayed the conversion from Muslim dissident to disciplined laborer as complete. "Our laborers," he wrote to a family member in the US, "are all either Samal Moros or ex-convicts from the San Ramon penal station, and they are real workers, who work by the hour, and complain of a SHORT day, never of a long one."⁴⁹

Wartime demand for oleochemicals and nitroglycerin sparked a rush to clear more land for coconut plantations and to open facilities for oil refining in the Philippines. In 1915, Worcester took over the management of the American-owned Visayan Refining Company's \$2 million (peso) facility in Cebu, strategically located near that island's deep port and a short distance from the penal colony and plantations of Northern Mindanao. He would amalgamate this facility with two other firms, selling a large share of the capital stock to Lever Brothers, Ltd. of London.⁵⁰ The Philippine National Bank, meanwhile, extended credit to Philippine landowners and businessmen eager to enter the market and limit American control of the economy. Cebuano tycoon Vicente Madrigal opened a competing oil refining facility near Worcester's. A promise from the Philippine National Bank to compel a Manila-based shipper to buy from Madrigal at an inflated price allowed him to offer local growers and pickers higher prices than that paid by Worcester. Such competing infusions of capital, high demand, and inflated copra prices brought small farmers into the coconut market. By the end of the war, the total area planted to coconuts had trebled.⁵¹ Between 1910 and 1918, imports of copra into the continental US grew from 9.914 million pounds to a staggering 326 million pounds.⁵²

The expansion of the coconut economy carried significant environmental and economic risks. In 1924, the American Dean of the Philippines's College of Agriculture, Charles Fuller Baker, received a "gift" from Fiji—"a little box containing a specimen of a very small blackish moth ... [that] is devastating the coconut plantations of Fiji, and the government of this group of islands, in alarm, has sent abroad for men to come and study it and try to control it. Through this one extremely insignificant thing, the chief source of income of Fiji is imperilled." Baker ordered an investigation in Mindanao and discovered another moth, "which may, on occasion, be nearly as bad and which may someday spread all over this Archipelago."⁵³ Baker's investigation also uncovered a bud-rot, "which is destroying more and more of our trees" and necessitated cutting and burning of the infected plants.⁵⁴ Baker turned the need for the scientific management of the risks of plantation agriculture into a reason for extending the American occupation. "In the Philippines," he wrote, "we have as yet barely emerged from the 'Dios cuidao' stage of cultivation."⁵⁵ The moth, the rot, and plummeting postwar demand for copra rendered the nearly four million Filipinos linked to the coconut commodity chain precarious. Thirty-four refining facilities closed, all of which were Filipino owned. US and European firms owned the majority shares in the remaining seven mills. The US remained the main market for ninety percent of Philippine copra, rendering the coconut plantation economy more dependent on the United States at the very moment American dairy and cottonseed farmers responded to the economic crisis of the 1930s by decrying "unfair" Philippine competition.⁵⁶

The Racialization of Risk

Just as the logic of tropicality informed the production of copra, so too did tropicality shape North American consumption of copra. More often, this logic emphasized the risks that tropical environments and goods posed to white Americans. The logic was not unique to copra. Louisiana cane and Western beet sugar growers, fearful of competing with Philippine and Puerto Rican sugar, invoked images of the tropics as overly sexual and damaging to white health in their campaigns to impose tariffs on insular sugar. Drawing on an assemblage of forms that April Merleaux calls “anti-imperial populism,” continental sugar growers framed the “sugar trust’s” exploitation of “cheap” tropical labor as a move to undercut the well-being of white settler family farmers.⁵⁷ United Fruit countered suspicion of the banana with mass marketing campaigns and cookbooks that domesticated the fruit.⁵⁸ Shippers and food manufacturers of coconut oil, however, had to overcome both suspicion of the tropics and an older oleomargarine controversy. Beginning in the latter nineteenth century, North American dairy farmers retaliated against the competition posed by vegetable fats by waging a campaign for “pure food.” The campaign tapped into the consuming public’s anxieties over the growing complexity of food processing in an age of rapid industrialization and urbanization.⁵⁹ In this campaign, the golden yellow of butter signified purity whereas the coloring of an otherwise white oleomargarine marked it as artificial and hence impure. The campaign culminated in the 1886 “Oleomargarine Act,” which imposed a prohibitive tax rate on the import and sale of oleomargarine, then defined as any dairy butter alternative. Additional state laws prohibited oleomargarine manufacturers from dyeing the product yellow—a ban that crossed the northern border and was not lifted in Quebec until 2008. Other states required manufacturers to dye the product pink, further reducing oleomargarine’s likeness to butter by drawing a color line around foods considered pure and ingestible.

The earliest campaigns for coconut oil products in the United States played with tropes of the tropics and the pure food controversy. The Troco Nut Butter company of Chicago and Wisconsin blended coconut oil with milk into a solid spread. The company’s landscape advertisements acknowledged the amalgamation but sought to contain the larger threat of racial miscegenation and food adulteration by depicting dairy cattle vacationing on tropical shores. The cattle lolled under the shade of tall and spindly coconut trees. The landscapes, not surprisingly, were devoid of the stout dwarf trees engineered by economic botanists and the Filipino prisoners who had picked the nuts. The company also turned the state-regulated whiteness of oleomargarine into a selling point. Far from a pale imitation of butter, Troco was “made from the white meat of tropic coconuts,” “wholesome natural ingredients,” and “appetizing natural foods we especially like to eat. The dainty white meat of coconuts churned with pasteurized milk are inviting ingredients.”⁶⁰ The company’s 1918 *Troco Cookbook* further domesticated the coconut by guiding readers on how to use the product in place of butter, the price of which skyrocketed to a high of sixty cents a pound during the war. Authored

by domestic science educator Ida Bailey Allen, the *Troco Cookbook* urged readers to think of coconut oil as part of a “balanced ration as a promotion of family health and a means toward economy.”⁶¹

The substitution of the oil for butter and other cooking fats contributed to a popular perception that coconut oil and butter were indistinguishable. This conflation hid the myriad industrial uses of copra, from the manufacture of nitroglycerin to detergents. It also positioned North American dairy farmers to wage a protectionist war on coconut oil when prices for butter slumped after the war. Agricultural producers on both sides of the Pacific experienced a postwar slump but dairy farmers allied with cottonseed oil manufacturers (a key ingredient in Crisco) and blamed “the ‘coconut cow’ for their plight.”⁶² Beginning in 1921 and escalating during the crisis of the 1930s, organizations from the National Board of Farm Organizations to the National Conference of Dairy Organizations passed resolutions against the menace of “Oriental and foreign oils.”⁶³ These groups joined with the Southern Tariff Association to form a “Tariff Defense Committee of American Producers of Oils and Fats.” Drawing on the template set by continental cane and beet sugar growers, the dairy campaign “employed racial tropes that connected the hygiene and safety of Philippine imports to the race of the workers who produced and transported them.”⁶⁴ The *Butter and Cheese Journal* depicted a shipment of Philippine copra as “impossibly filthy,” smelling “like stable manure or worse” with “an army of naked Malays sweating under the tropical heat, tramping copra that is going to be made into the poor man’s butter. Think of it!” As Paul Kramer notes, the “journal’s nightmare vision joined dark visions of bodily corruption and racial invasion.”⁶⁵ The visions contributed to the “American liberation of the Philippines” in the form of the 1934 Tydings-McDuffie Act creating the Philippine Commonwealth with the promise of independence in 1946.

The Philippine planters who had embraced the coconut boom now found themselves atop a 2,000,000-acre plantation hierarchy faced with ecological crises from the black moth to bud-rot, and the loss of duty-free access to its largest market.⁶⁶ In 1939, Manuel Quezon ordered the Philippine National Assembly to investigate the coconut industry at home and abroad. The resulting commission headed by Maximo Kalaw traveled throughout the islands, Ceylon, and Marseilles, then on the eve of German occupation. Kalaw found that the attacks of North American farmers had reverberated loudly and globally. “Everywhere one goes, be it in Europe or Asia, and inquires about the copra market, he finds that Philippine copra has that black mark. It is generally placed at the bottom of the list. This has been the sad history of Philippine copra.”⁶⁷ In addition to being held in low esteem, Philippine copra faced obstacles that had resulted from the crop’s symbiotic relationship to the US Pacific coast. The ports of San Francisco and Los Angeles removed copra from ships through sucking pumps, which meant Philippine exporters were better off packing in bulk rather than bags. The Port of Marseilles did not have this capacity. Entry into French markets therefore meant Philippine exporters would have to change copra packing methods, take on the

expense of building bag factories, and forge regular shipping links to Marseilles, Antwerp, Rotterdam, Hamburg, Copenhagen.⁶⁸

Kalaw's proposed solution to the loss of the American market and barriers to European markets was twofold. The first was to develop a National Coconut Corporation with the goal of improving copra production and consumption. The organization Kalaw wrote should tackle the taint on Philippine copra by imposing new measures of standardization and regulating the sanitation of copra drying facilities. Kalaw also imagined a postindependence economy fuelled by coconuts not just as an export commodity but as a domestic food: "The diet of the Filipino is very deficient in fat, and that is why the average Filipino is not found to be so strong. Increase in the consumption of coconut products will give this necessary fat to the average Filipino."⁶⁹ Filipinos, in short, needed to eat more of the plantation crops they grew. For inspiration, Kalaw turned to the planters of Ceylon, who had formed a Coconut Board that had "undertaken a campaign of education to make people eat more coconut." This board offered an annual competition "among confectionary firms using the largest quantity of Ceylon desiccated coconut."⁷⁰ The second strategy was to join forces with regional coconut producers in an international congress. Acknowledging that coconut oil faced competition from cottonseeds, ground nuts, and olives, Kalaw hoped the international congress would produce and disseminate "a great need for information and propaganda on coconut and its uses."⁷¹ Thus the spectre of exclusion fostered the seeds of today's International Coconut Community headquartered in Jakarta—"a world organization for the coconut, so that this most valuable plant may come back into its rightful place and raise its millions of dependents from economic degradation."⁷²

Conclusion: Toward Superfood Status

If the aftermath of the first World War contributed to the racialization of the copra, the second World War paved the way for the coconut's ascent to a superfood. With war raging in the Pacific theater and the high likelihood of soldiers stranded on isolated Pacific atolls, the US Army commissioned a series of educational pamphlets on the coconut as a survival food. The botanists of the tropical stations that had contributed to the commodification of copra now provided soldiers with the knowledge needed to "banish fear of the jungle and so-called barren lands."⁷³ Such pamphlets recalled the myriad uses to which indigenous Filipinos and Pacific Islanders had put the coconut. Strips of bark, soldiers learned, could provide mosquito netting; its water protected from dysentery, and its meat warded off hunger. While this is admittedly a leap from today's promise of weight loss and healing, the coconut of the Second World War promised survival from an untouched nature, further severing the tree from the industrial plantations of the copra trade.

Though the superfood status of coconut oil may rest on imperialist nostalgia for the tropical primitive, the infrastructure of coconut production and marketing was forged in Euro-American laboratories and on prison plantations far from the shores of

idyllic beaches. American empire in the Philippines subsidized the visions and efforts of agricultural entrepreneurs—imperial boosters, prison wardens, and self-styled experts with access to financial capital and the labor of convicts they presented as redeemable if properly managed. Prison plantations were living laboratories for the racial management of labor and for the bioengineering of stout trees that, kept in a suspended state of sexual production, flowered and bore fruit throughout the year. Monocrop agriculture carried ecological and economic risks borne by Filipinos however unevenly. As early as the 1920s, black moth and bud rot began to appear, leading to the felling of old trees and the planting of new. Today the Philippine government subsidizes the chemical fertilizers and pesticides required to keep trees productive. While the ICC promotes coconut as a superfood, those that grow coconut are asked to eat the excess. Behind this intimacy of eating cast as patriotism is the logic of US capital accumulation and expansion that rendered Filipinos into commodities. Connecting the colonial plantation to the coconut's superfood status reveals the ways in which discourses of risk are racialized and consumed. It is not the body of the laborer who risks exposure to fertilizers and pesticides nor the loss of biodiversity that North American consumers consider when asked if coconuts are a health food.

Notes

- ¹ Bruce Fife, *The Coconut Oil Miracle*, 5th ed. (Penguin: New York, 2013), 6. First printed in 1999 as Bruce Fife, *The Healing Miracles of Coconut Oil* (Colorado Springs, CO: Health Wise, 2000).
- ² Cherie Calbom, MS, and John Calbom, MA, *The Coconut Diet: The Secret Ingredient that Helps You Lose Weight While Eating Your Favorite Foods* (New York: Warner Books, 2005), 3.
- ³ Fife, *The Coconut Oil Miracle*, 1.
- ⁴ Calbom and Calbom, *Coconut Diet*, 4.
- ⁵ Kristina Mahr, "The Coconut Craze," *Time* 180, no. 25 (2012), 44–47.
- ⁶ Nithya Neelakantan, Jowy Yi Hoong Seah, and Rob M. van Dam, "The Effect of Coconut Oil Consumption on Cardiovascular Risk Factors," *Circulation AHA* 141, no. 10 (March 2020): 803–14. <https://doi.org/10.1161/CIRCULATIONAHA.119.043052>
- ⁷ Karin Michels, "Kokosöl und andere Ernährungsirrtümer [Coconut oil and other nutritional errors]," public lecture, Albert-Ludwigs-Universität Freiburg, July 10, 2018. The talk is no longer available online.
- ⁸ See, for example, Joanna Slater, *Washington Post*, "A Harvard Professor Called Coconut Oil Pure Poison. Now India Wants a Retraction," September 5, 2018. <https://www.washingtonpost.com/world/2018/09/05/harvard-professor-called->

coconut-oil-pure-poison-now-india-wants-retraction/

- ⁹ Statistical material compiled in *World—Coconut (Copra) Oil—Market Analysis, Forecast, Size, Trends and Insight* (February 2021). Report ID: 4701104. [https://www.researchandmarkets.com/reports/4701104/world-coconut-copra-oil-market-analysis?utm_source=dynamic&utm_medium=GNOM&utm_code=h27n79&utm_campaign=1352794+-+Global+Coconut+\(Copra\)+Oil+Markets+to+2025%3a+Production%2c+Consumption%2c+Imports+and+Exports+by+Country&utm_exec=joca220gnomd](https://www.researchandmarkets.com/reports/4701104/world-coconut-copra-oil-market-analysis?utm_source=dynamic&utm_medium=GNOM&utm_code=h27n79&utm_campaign=1352794+-+Global+Coconut+(Copra)+Oil+Markets+to+2025%3a+Production%2c+Consumption%2c+Imports+and+Exports+by+Country&utm_exec=joca220gnomd)
- ¹⁰ Monica B. Castillo and Princess Alma B. Ani, “The Philippine Coconut Industry: Status, Policies, and Strategic Directions for Development,” *Food and Fertilizer Technology Center for the Asian and Pacific Region Agricultural Policy Platform (FFTC-AP)* (June 2019), <https://ap.ffmpeg.org.tw/article/1382>
- ¹¹ Adrienne Bitar, *Diet and the Disease of Civilization* (New Brunswick, NJ: Rutgers University Press, 2018), 59.
- ¹² Terry T. Shintani, *The Hawaii Diet Cookbook* (Honolulu, HI: Health Foundation Press, 1999). Quote from Terry Shintani, Sheila Beckham, Helen Kanawaliwali O’Conner, Claire Hughes, and Alvin Sato, “The Wai’anae Diet Program: A Culturally Sensitive, Community-Based Obesity and Clinical Intervention Program for the Native Hawaiian Population,” *Hawaiian Medical Journal* 53, no. 5 (May 1994): 136. The research from the 1994 study informed Shintani’s 1997 *Hawaii Diet*. See also Bitar, *Diet and the Disease of Civilization*, 59.
- ¹³ Bitar, *Diet and the Disease of Civilization*, 59. Renato Rosaldo, “Imperial Nostalgia,” *Representations* 26 (1989): 107–22.
- ¹⁴ Philip Jan Cerepak, “Establishing the Intimate Link: 20th Century Tropical Agriculture and the Establishment of the Coconut Zone,” *Journal of Maritime Studies and National Integration* 4, no. 1 (2020): 1–11.
- ¹⁵ David Arnold, *The Problem of Nature: Environment, Culture, and European Expansion* (Oxford: Blackwell, 1996); and Gary Okihiro, *Pineapple Culture: A History of the Tropical and Temperate Zones* (Berkeley: University of California Press, 2009) expands on the relationship between tropicality and plantation agriculture.
- ¹⁶ John Soluri, *Banana Cultures: Agriculture, Consumption, and Environmental Change in Honduras and the United States* (Austin: University of Texas Press, 2005).
- ¹⁷ In addition to Okihiro and Soluri, see in brief, Richard Tucker, *Insatiable Appetite: The United States and the Ecological Degradation of the Tropical World* (Boulder, CO: Rowman and Littlefield, 2007).

- ¹⁸ See, for example, various essays in the section “Exposure and Invisibility” in Gregg Mitman, Michelle Murphy, and Christopher Sellers, eds., *Landscapes of Exposure: Knowledge and Illness in Modern Environments*, *Osiris* 19 (January 2004): 203–296. <https://www.jstor.org/stable/i370367>
- ¹⁹ Maximo M. Kalaw, *The Coconut Industry* (Bureau of Public Printing: Manila, 1940), 68.
- ²⁰ Cerepak, “Establishing the Intimate Link.”
- ²¹ Norman G. Owen, *Progress Without Prosperity: Manila hemp and Material Life in the Colonial Philippines* (Berkeley: 1984), 177; Rigoberto Tiglao, “The Political Economy of the Philippine Coconut Industry,” in *Political Economy of Philippine Commodities*, ed. Third World Studies Program (Quezon City: University of the Philippines Press, 1983), 181–272.
- ²² George L. Hicks, *The Philippine Coconut Industry: Growth and Change* (Manila: Center for Development and Planning, National Planning Association, 1967), 6.
- ²³ Hicks, *Philippine Coconut Industry*, 6.
- ²⁴ On Buitenzorg as a transimperial model see Florian Wagner, “From the Western to the Eastern Model of Cash Crop Production: Colonial Agronomy and the Global Influence of Dutch Java’s Buitenzorg Laboratories, 1880s–1930s,” in *Agrarian Reform and Resistance in an Age of Globalisation: The Euro-American World and Beyond, 1780–1914*, ed. Joe Regan and Cathal Smith (London: Routledge, 2019), 137–52.
- ²⁵ Fairchild to Joseph Beale Steere, 11 May 1898, *JBS Papers*. On Fairchild and the OFSPI more generally see also, Stuart A. McCook, “The World Was My Garden: Tropical Botany and Cosmopolitanism in American Science,” in *Colonial Crucible: Empire in the Making of the Modern American State*, ed. McCoy and Scarano (Madison: University of Wisconsin Press, 2009), 499–507; Amanda Harris, *Fruits of Eden: David Fairchild and America’s Plant Hunters* (Gainesville: University of Florida Press, 2015). On international science as transimperial see Jessica Wang, “Plants, insects, and the biological management of American empire: tropical agriculture in early twentieth-century Hawai’i,” in *History and Technology* 35, no. 3 (2019): 203–36. On OFSPI colonial extraction and plant transfer as a template for neoliberal seed-banking see Xan Sarah Chacko, “When Life Gives You Lemons: Frank Meyer, Authority, and Credit in Early Twentieth-Century Plant Hunting,” *History of Science* 56, no. 4 (2018): 432–69.
- ²⁶ James Wilson to F. Lamson Scribner, October 17, 1903, Letter Books, Vol. III, *FLS Papers*.
- ²⁷ René Alexander Orquiza, *Taste of Control: Food and the Filipino Colonial Mentality under American Rule* (New Brunswick, NJ: Rutgers University Press, 2019), 34.

- ²⁸ Qrquiza, *Taste of Control*, 35.
- ²⁹ William S. Lyon, "The Cocoanut" Bulletin No. 8, The Bureau of Agriculture (Manila: Bureau of Public Printing, 1903), 6.
- ³⁰ Lyon, "The Cocoanut," 6.
- ³¹ Veterans Rehabilitation: Hearing Before a Subcommittee of the Committee on Finance, Seventy-Seventh Congress of the United States on S. 2079, a Bill to Authorize the Condemnation of Materials Which are Intended for Use in Process or Renovated Butter and Which are Unfit for Human Consumption, and for Other Purposes. July 2, 1942, 3. By the Second World War, other industrial uses of coconut oil included: ammunition, cordite explosive, protective coating for ordnance, alkyd resin, and the manufacture of shatterproof glass. In a nod to the links between the military and medical complexes, and nitroglycerin for the treatment of heart problems: https://books.google.ca/books?id=aTNKAQAIAAJ&pg=RA1-PA3&lpg=RA1-PA3&dq=nitroglycerin+from+coconut+oil&source=bl&ots=NYhqqIMrsf&sig=ACfU3U3i_ordMff9P33YGEamXttHxYCyLg&hl=en&sa=X&ved=2ahUKEwjBoqLGgM3qAhU5oXIEHe7ZDXUQ6AEwEXoECAoQAQ#v=onepage&q=nitroglycerin%20from%20coconut%20oil&f=false
- ³² Daniel R. Headrick, *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century* (New York: Oxford University Press, 1981) remains an essential source.
- ³³ Thomas P. Hanley, "Notes on Agriculture in Ceylon and on the Botanical Gardens at Peradeniya," *Report of the Philippine Commission* (Manila: Bureau of Public Printing, 1902), 630.
- ³⁴ The route ended at the "Wallace Line," the place where Asia and Australia met according to theories of continental drift. Andrew Berry, ed., *Infinite Tropics: An Alfred Russell Wallace Anthology* (Verso: New York, 2003), 115–17.
- ³⁵ See, for instance, Dean C. Worcester and Frank S. Bourns, "Spanish Rule in the Philippines," *Cosmopolitan* 23, no. 6, (1897): 587–600.
- ³⁶ Rodney J. Sullivan, *Exemplar of Americanism: The Philippine Career of Dean C. Worcester* (Ann Arbor, MI: Center for South and Southeast Asian Studies, 1991), 10–25. On Worcester's relationship with Bourns's timber company, see Gifford Pinchot Papers, LOC Box 640, Folder "XII," 5–7.
- ³⁷ Dean C. Worcester, "Coconut Growing in the Philippines" (1911), article found in Dean C. Worcester Papers, Box 2, Folder: 1898–1915, Bentley Historical Library, University of Michigan.

- ³⁸ Worcester, “Coconut Growing in the Philippines.”
- ³⁹ Worcester, “Coconut Growing in the Philippines,” 3.
- ⁴⁰ Worcester to McIntyre, October 30, 1912, DCW Papers, Box 2, Folder: 1898–1915.
- ⁴¹ W. Cameron Forbes Papers, Houghton Library, Harvard University, *Philippine Islands* (1928), I: 384.
- ⁴² W. Cameron Forbes Papers, Houghton Library, Harvard University, *Philippine Islands* (1928), I: 385–86.
- ⁴³ W. Cameron Forbes Papers, Houghton Library, Harvard University, *Philippine Islands* (1928), I: 384–85.
- ⁴⁴ Olivier Charbonneau, “A New West in Mindanao”: Settler Fantasies on the US Imperial Fringe, *Journal of the Gilded Age and Progressive Era* 18 (2019): 304–23.
- ⁴⁵ F. Lamson Scribner, “Report of the Bureau of Agriculture,” *Report of the Philippine Commission*, 1903, 656.
- ⁴⁶ *Report of the Philippine Commission* (1915), “penitentiary,” 357; “escape,” 355.
- ⁴⁷ Quotation, *Report of the Philippine Commission* (1915), 178. On the prisons see, in brief, Michael Vincent P. Caceres, “Colonial Penal de San Ramon: Images of the Oldest Existing National Penitentiary in the Philippines (Circa 1870),” *Liceo Journal of Higher Education Research* 5, no. 1 (2007), 133–53; Michael Salman, “‘The prison that makes men free’: The Iwahig Penal Colony and the Simulacra of the American State in the Philippines,” in *Colonial Crucible: Empire in the Making of the Modern American State*, eds. Alfred McCoy and Francisco A. Scarano (Madison: University of Wisconsin Press, 2009), 116–28. As models of colonial penology see Frank W. Carpenter, *Report of the Governor of the Department of Mindanao and Sulu (Philippine Islands) 1914* (Washington: Government Printing Office, 1916), 355–57. San Ramon is one of the largest penitentiaries in the Philippines today. Though outside the scope of this paper, it is important to place American penal farms in the wider contexts of convict labor in the US South and European empire. On the former see, in brief, Alex Lichtenstein, *Twice the Work of Free Labor: The Political Economy of Convict Labor in the New South* (New York: Verso, 1996). On the later see Clare Anderson, *Convicts: A Global History* (Cambridge: Cambridge University Press, 2022).
- ⁴⁸ Peter James Hudson, *Bankers and Empire: How Wall Street Colonized the Caribbean* (Chicago: Chicago University Press, 2017).
- ⁴⁹ Worcester to George Worcester, 1923, Dean C. Worcester Papers, Folder 57. Thetford Historical Society. Capitalization in the original.
- ⁵⁰ My numbers are drawn from Resil B. Mojares, “Worcester in Cebu: Filipino Response

to American Business, 1915–1924,” *Philippine Quarterly of Culture and Society* 13 (1985): 3, 1.

⁵¹ Mojares, “Worcester in Cebu,” 8.

⁵² Grayson L. Kirk, *Philippine Independence: Motives, Problems, and Prospects* (New York: Farrar and Rinehart, 1936), 74.

⁵³ Charles Fuller Baker, “The Stone Rejected,” *The Philippine Agriculturalist* (June 1924), XIII: 1, reprint in “Printed and MS Material on the Philippines,” W. Cameron Forbes Papers, Houghton Library, Harvard.

⁵⁴ Baker, “The Stone Rejected.”

⁵⁵ Baker, “The Stone Rejected.”

⁵⁶ Cited in Mojares, “Worcester in Cebu,” 5.

⁵⁷ April Merleaux, *Sugar and Civilization: American Empire and the Cultural Politics of Sweetness* (Chapel Hill: UNC Press, 2015), see especially chapter one.

⁵⁸ Soluri, *Banana Cultures*, 60–62.

⁵⁹ Benjamin Cohen, *Pure Adulteration: Cheating on Nature in the Age of Manufactured Food* (Chicago: University of Chicago Press, 2019), especially chapter 4.

⁶⁰ These are undated advertisements found in the online Gjenvick-Gjenvik Archives, <https://www.gjenvick.com/Epicurean/VintageAds/TrocoOleomargarine.html>.

⁶¹ Ida C. Bailey Allen, *The Troco Cookbook*. New York: Troco Nut Butter Company, 1918.

⁶² Kirk, *Philippine Independence*, 75.

⁶³ Kirk, *Philippine Independence*, 75.

⁶⁴ Paul Kramer, *Blood of Government: Race, Empire, the United States, and the Philippines* (Chapel Hill: University of North Carolina Press, 2006), 395.

⁶⁵ Kramer, *Blood of Government*, 395.

⁶⁶ The estimation of two million acres comes from Kalaw, *The Coconut Industry*, 33.

⁶⁷ Kalaw, *The Coconut Industry*, 68.

⁶⁸ Kalaw, *The Coconut Industry*, 36.

⁶⁹ Kalaw, *The Coconut Industry*, vii.

⁷⁰ Kalaw, *The Coconut Industry*, 26.

- ⁷¹ Kalaw, *The Coconut Industry*, 33.
- ⁷² Kalaw *The Coconut Industry*.
- ⁷³ Major-General Ralph C. Smith, preface to Kenneth P. Emory, *South Seas Lore* (Honolulu, HI: Bernice P. Bishop Museum Special Publication), 36.

Selected Bibliography

- Allen, Ida C. Bailey. *The Troco Cookbook*. New York: Troco Nut Butter Company, 1918.
- Arnold, David. *The Problem of Nature: Environment, Culture, and European Expansion*. Oxford: Blackwell, 1996.
- Baker, Charles Fuller. "The Stone Rejected." *The Philippine Agriculturalist* XIII:1 (June 1924). Reprinted in "Printed and MS Material on the Philippines," W. Cameron Forbes Papers, Houghton Library, Harvard University.
- Berry, Andrew, editor. *Infinite Tropics: An Alfred Russell Wallace Anthology*. Verso: New York, 2003.
- Bitar, Adrienne. *Diet and the Disease of Civilization*. New Brunswick, NJ: Rutgers University Press, 2018.
- Calbom, Cherie, and John Calbom. *The Coconut Diet: The Secret Ingredient that Helps You Lose Weight While Eating Your Favorite Foods*. New York: Warner Books, 2005.
- Caceres, Michael Vincent P. "Colonial Penal de San Ramon: Images of the Oldest Existing National Penitentiary in the Philippines (Circa 1870)." *Liceo Journal of Higher Education Research* 5, no 1 (2007): 133–53.
- Castillo, Monica B., and Princess Alma B. Ani. "The Philippine Coconut Industry: Status, Policies, and Strategic Directions for Development." *Food and Fertilizer Technology Center for the Asian and Pacific Region Agricultural Policy Platform* (June 2019). <https://ap.fftc.org.tw/article/1382>.
- Cerepak, Philip Jan. "Establishing the Intimate Link: 20th Century Tropical Agriculture and the Establishment of the Coconut Zone," *Journal of Maritime Studies and National Integration* 4, no 1 (2020): 1–11.
- Chacko, Xan Sarah. "When Life Gives You Lemons: Frank Meyer, Authority, and Credit in Early Twentieth-Century Plant Hunting." *History of Science* 56, no 4 (2018): 432–69.
- Charbonneau, Oliver. "A New West in Mindanao": Settler Fantasies on the US Imperial Fringe, *Journal of the Gilded Age and Progressive Era* 18 (2019): 304–23.
- Cohen, Benjamin. *Pure Adulteration: Cheating on Nature in the Age of Manufactured Food*. Chicago: University of Chicago Press, 2019.

- Emory, Kenneth P. *South Seas Lore*. Honolulu: Bernice P. Bishop Museum Special Publication, 1943.
- Fife, Bruce. *The Coconut Oil Miracle* 5th Edition. New York: Penguin, 2013.
- Hanley, Thomas P. "Notes on Agriculture in Ceylon and on the Botanical Gardens at Peradeniya." In *Report of the Philippine Commission*, 630-633. Manila: Bureau of Public Printing, 1902.
- Harris, Amanda. *Fruits of Eden: David Fairchild and America's Plant Hunters*. Gainesville: University of Florida Press, 2015.
- Headrick, Daniel R. *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century*. New York: Oxford University Press, 1981.
- Hicks, George L. *The Philippine Coconut Industry: Growth and Change*. Manila: Center for Development and Planning, National Planning Association, 1967.
- Hudson, Peter James. *Bankers and Empire: How Wall Street Colonized the Caribbean*. Chicago: Chicago University Press, 2017.
- Kalaw, Maximo M. *The Coconut Industry*. Manila: Bureau of Public Printing, 1940.
- Kirk, Grayson L. *Philippine Independence: Motives, Problems, and Prospects*. New York: Farrar and Rinehart, 1936.
- Kramer, Paul. *Blood of Government: Race, Empire, the United States, and the Philippines*. Chapel Hill: The University of North Carolina Press, 2006.
- Lyon, William S. *The Cocoanut; With Reference to Its Products and Cultivation in the Philippines*. Manila: Bureau of Public Printing, 1903.
- Mahr, Kristina. "The Coconut Craze." *Time* 180, no. 25 (2012): 44-47.
- McCook, Stuart A. "The World Was My Garden: Tropical Botany and Cosmopolitanism in American Science." In *Colonial Crucible: Empire in the Making of the Modern American State*, edited by Alfred McCoy and Francisco Scarano, 499-507. Madison: University of Wisconsin Press, 2009.
- Merleaux, April. *Sugar and Civilization: American Empire and the Cultural Politics of Sweetness*. Chapel Hill: University of North Carolina Press, 2015.
- Mitman, Gregg, Michelle Murphy, and Christopher Sellers, editors. *Landscapes of Exposure: Knowledge and Illness in Modern Environments*. *Osiris* 19 (January 2004): 1-296. <https://www.jstor.org/stable/j370367>.
- Mojares, Resil B. "Worcester in Cebu: Filipino Response to American Business, 1915-1924." *Philippine Quarterly of Culture and Society* 13 (1985): 1-13.

- Neelakantan, Nithya, Jowly Yi Hoong Seah, and Rob M. van Dam. "The Effect of Coconut Oil Consumption on Cardiovascular Risk Factors." *Circulation* 141, no. 10 (March 2020): 803–14. <https://doi.org/10.1161/CIRCULATIONAHA.119.043052>.
- Okihiro, Gary. *Pineapple Culture: A History of the Tropical and Temperate Zones*. Berkeley: University of California Press, 2009.
- Orquiza, René Alexander. *Taste of Control: Food and the Filipino Colonial Mentality under American Rule*. New Brunswick, NJ: Rutgers University Press, 2019.
- Owen, Norman G. *Progress Without Prosperity: Manila Hemp and Material Life in the Colonial Philippines*. Berkeley: University of California Press, 1984.
- Rosaldo, Renato. "Imperialist Nostalgia." *Representations* 26 (1989): 107–22.
- Salman, Michael. "'The prison that makes men free': The Iwahig Penal Colony and the Simulacra of the American State in the Philippines." In *Colonial Crucible: Empire in the Making of the Modern American State*, edited by Alfred McCoy and Francisco A. Scarano, 116–28. Madison: University of Wisconsin Press, 2009.
- Scribner, F. Lamson. "Report of the Bureau of Agriculture." In *Report of the Philippine Commission*, 656. Manila: Bureau of Public Printing, 1903.
- Shintani, Terry T. *The Hawaii Diet Cookbook*. Honolulu, HI: Health Foundation Press, 1999.
- Shintani, Terry, Sheila Beckham, Helen Kanawaliwali O'Conner, Claire Hughes, and Alvin Sato. "The Wai'anae Diet Program: A Culturally Sensitive, Community-Based Obesity and Clinical Intervention Program for the Native Hawaiian Population." *Hawaiian Medical Journal* 53, no. 5 (May 1994): 136–47.
- Soluri, John. *Banana Cultures: Agriculture, Consumption, and Environmental Change in Honduras and the United States*. Austin: University of Texas Press, 2005.
- Sullivan, Rodney J. *Exemplar of Americanism: The Philippine Career of Dean C. Worcester*. Ann Arbor: Center for South and Southeast Asian Studies, 1991.
- Tucker, Richard P. *Insatiable Appetite: The United States and the Ecological Degradation of the Tropical World*. Boulder, CO: Rowman and Littlefield, 2007.
- Tiglao, Rigoberto. "The Political Economy of the Philippine Coconut Industry." In *Political Economy of Philippine Commodities*, edited by Third World Studies Program, 181–272. Quezon City: University of the Philippines Press, 1983.
- Wagner, Florian. "From the Western to the Eastern Model of Cash Crop Production: Colonial Agronomy and the Global Influence of Dutch Java's Buitenzorg Laboratories, 1880s-1930s." In *Agrarian Reform and Resistance in an Age of Globalisation: The Euro-American World and Beyond, 1780-1914*, edited by Joe Regan and Cathal Smith, 137–52. London: Routledge, 2019.

Wang, Jessica. "Plants, Insects, and the Biological Management of American Empire: Tropical Agriculture in Early Twentieth-Century Hawai'i." *History and Technology* 35, no. 3 (2019): 203–36.

Worcester, Dean C. "Coconut Growing in the Philippines." War Dept., Bureau of Insular Affairs, 1911.

Worcester, Dean C., and Frank S. Bourns. "Spanish Rule in the Philippines." *Cosmopolitan* 23, no. 6, (1897): 587–600.