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REVIEW ESSAY

The Entangled Nature of Work: Histories of Humans and Nonhuman Labor

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Alex Blanchette, *Porkopolis: American Animality, Standardized Life, and the Factory Farm* (Durham, NC: Duke University Press, 2020).

Sharika Crawford, *The Last Turtlemen of the Caribbean: Waterscapes of Labor, Conservation, and Boundary Making* (Chapel Hill: University of North Carolina Press, 2020).

Ryan Tucker Jones, *Red Leviathan: The Secret History of Soviet Whaling* (Chicago: University of Chicago Press, 2022).

Thea Riofrancos, *Resource Radicals: From Petro-Nationalism to Post-Extractivism in Ecuador* (Durham, NC: Duke University Press, 2020).

Jonathan E. Robins, *Oil Palm: A Global History* (Chapel Hill: University of North Carolina Press, 2021).

Abstract
A survey of recent works of labor and environment reveal the centrality of hybridity to analyses of human and nonhuman natures. These are most apparent in analyses of labor, technology, and nature. While ways of knowing nature amongst the powerful have been oriented toward the ever-greater domination of workers and nonhuman nature, interspecies entanglements and solidarity erupt through the marginal, overlooked spaces. Taken together, the books included in this review suggest a way toward finding alternative, more just futures for living alongside nonhuman nature.

Histories of labor and the environment are not for the faint of heart. In a sampling of recent works, I read horrific accounts of working people committing terrible acts of violence against nonhuman nature or being victimized by other humans in pursuit of nature's "free gifts." Consider, for example, the eyewitness account of a Soviet whaler, who participated in the killing of a mother humpback whale in the 1960s. "The whale's young will be without milk, alone in the ocean," the whaler wrote. "In the near future he will probably be eaten by killer whales…milk flowed from the mother for a long time in long trickles. All the water around the catcher boat turned white. I

felt really sorry for the mother—I wanted to cry, but to whom would I complain?"[1] In another book on industrial hog farming workers described the "breaking-in" phase of their bodies, as their muscles, ligaments, and mental health "adjusted" to the demands of the modern slaughterhouse. Unaccustomed to the routinized, discrete cutting motions, employees suffered in agony at work and at home. As one recounted, "It feels like you're flammable or something. Your bones really hurt. Your hands hurt. Like sometimes I would get off of a shift…and I couldn't sit down, I couldn't lie down because my body was so sore."[2] A history of mariners and turtlers in the Caribbean Sea describes how "turtlemen" would catch hawksbill sea turtles, treasured for the "tortoise shell" plates on their back, and then bury them alive, upside down in the sand for weeks until the shells fell off their desiccated bodies.[3]

Histories of work and nature are full of suffering and loss. What's more, there are no happy endings. Species disappear. Ecosystems collapse. Capitalism accelerates. It's a field of scholarship that would make anyone grim about the mouth.

And yet, if you know where to look, the forces that drive the bloody destruction of the earth's living things contain within them the seeds of an alternative future. They lie at the intersection of the myriad, undeniable interspecies entanglements that build our world. Some call these phenomena hybridity; others, assemblages.[4] It began first with the framework of Actor-Network-Theory, which quickly spilled over into subfields within geography, history, and anthropology.[5] Ensuing theoretical debates critiqued and refined our understanding of such hybridity over the next three decades. These critiques reminded us that humans and nonhumans are not pre-constituted subjects, but are in fact coproduced and remade in their interactions with each other.[6] They paid attention to the overlapping, variegated actors and temporal time scales at work in hybrid phenomena. They deepened our understanding of concepts like "agency," while others opened new terrains for hybrid inquiry in the "ruderal ecologies" and "feral" phenomena that shape and reshape the world.[7] No matter what you call it, it is now impossible to write histories of humans and nature without putting these entanglements front and center. And this latest sampling of labor and environmental scholarship is no exception.

At first glance, the books under consideration in this review do not appear to be ones that belong together. Their topics, temporal ranges, and geographies are disparate and vast. The main characters include oil palm trees, seas turtles, industrialized pigs, rorqual whales, and anti-mining activists. The environments and geographies investigated extend from the waters of Caribbean, Antarctic, and Black Seas to the Western Pacific Ocean. They also include a focus on West African, Southeast Asian, and North American plantations and small cities on the edge of the Amazon all the way to the North American Great Plains. Several centuries, or at least many decades, pass in some of the works. In other cases, the period under study is just a couple of years. What's more, authors Alex Blanchette, Ryan Tucker Jones, Sharika Crawford, Jonathan Robins, and Thea Riofrancos bring different disciplinary approaches and questions to their research, grounded in history, political science, and anthropology.

And yet, interspecies entanglements shape each book. In Thea Riofrancos's *Resource Radicals,* a history of environmental activism in early twenty-first century Ecuador, a coalition of leftist labor, environmental, and indigenous activists found

an unprecedented political movement: "anti-extractivism," premised on the rights of people and nature to flourish together. In Blanchette's *Porkopolis,* the vast and multiple environments of the modern factory farm structure the labor, bodies, and health of thousands of workers around the radically regimented lives and deaths of millions of factory pigs. In Jones's *Red Leviathan,* the first scientific studies of whale intelligence, behavior, and social relations codified modern perceptions of whales as charismatic megafauna in need of preservation, even though that knowledge was accrued through the mass slaughter of millions of whales. In Robins's *Palm Oil,* myriad African cultures and societies developed working relations with oil palm trees that could build forests, stabilize ecosystems, and erect sustainable food systems where only wastelands had existed before. As Robins writes, "wherever there were oil palms, there were humans."[8]

Crawford's *The Last Turtlemen of the Caribbean* does much of the same, tracing the vast waters of the Caribbean Sea through the work of subsistence turtlers, who followed the migration routes, identified breeding grounds, and rendered turtle shells and meat into a meager income. Like the hawksbill and green turtles they pursued, these men lived in relative freedom on the margins of the captive Caribbean economies, out of sight in the mangroves, swamps, and keys of that vast marine environment. These assemblages, as Anna Tsing reminds us, possess great power. They might lead to entropy and decline. But they also lead to "unintentional coordination," where energies and lifeways commingle, and often erupt, into new kinds of interspecies flourishing.[9]

As each of these works show, hybridity is the rule in histories of labor and nature. This fact alone, however, has done little to slow the rapacious exploitation of nonhuman nature, or prevent the cruelty and violence against other humans and nonhuman nature. The epistemologies in which we "know" nature (say, as an object of conquest or an adjunct to economic growth) are deeply worn in human societies across the modern era. Merely observing the interconnection that runs through all living things is not enough. Quoting the anthropologist Marisol de la Cadena, Riofrancos writes, "Historically, what is new is not the imbrication of the human and the non-human, but the public visibility of such hybrid 'earth beings.'" Like the anti-extractivists in Ecuador, the task going forward is to make hybridity the default perspective for our politics. To study labor and nature is to look at the sinewy, bloody, mucky, frightening truth of our historical present and see another way forward, perhaps a "future past," in the illuminating words of Riofrancos, not just of "a politically potent nostalgia for what [we] have not yet lost," but even what we might save, restore, build, and grow with other living beings.[10]

A politics centered on hybridity, however, must upend the hegemonic perspective on labor and nature of those in power first. So, what is that view? In each of these works, the powerful—whether the state planners, capitalists, or imperialists—introduced novel machinery to accelerate the exploitation and demotion of workers and nonhuman life to a mere adjunct of production. The machine, however, carries with it a whole worldview for the systemic organization of life. In *Porkopolis,* the machine is actually an animal: the pig. Blanchette's exegesis on "capitalist animality" in early twenty-first century North America follows pigs, workers, and managers through every stage of production in a vertically-integrated hog farm. In the

anonymized town of "Dixon," somewhere on the Great Plains, a hog factory farm he calls "Dover Foods" demonstrates how the drive to standardize every aspect of porcine life has created a prolific yet unimaginably fragile animal, whose life and death by the millions depends on the absorption of the labor and lives of more than twelve thousand people in a small US town. It is a machine-made flesh, the culmination of more than a century of scientific, technical, and economic experimentation in pig farming.

Blanchette reminds the reader that in the Marxist tradition, the "machine" is a powerful structuring force, confronting the worker as a "pre-existing material condition of production," even though it is actually a product of "dead-labor" rendered into capital and transformed again into technology. The machine reorients the conditions of labor—its pace, the length of the workday, even the social value of that labor. "In other words," the author writes, the machine "puts the worker to work."[11]

Dover Food's managers deploy a novel concept, the "Herd," to describe the seven million hogs that pass through their facilities every year as a single, abstract species, undergoing various levels of transformation into animal and flesh. While mangers work "on the Herd" across various stages of production, farm laborers who work "with the Herd" are confined to their specific "lifecycle" stage of pork production, unable to enter other sections of the factory farm for fear of spreading disease to different pig populations. The triumph of this novel species is so total that it not only shapes the lives of workers in the plant but outside of it as well.

To emphasize this point, Blanchette relates the story of one farm worker, Cesar, who came to Dixon from Guatemala with his whole family. After several years, the processing side of the industrial farm, known as Berkamp Meats, hired Cesar's father into a managerial role, but then pulled back the offer when they found out that the rest of his family worked in Dixon's breeding facilities. The managers gave him a choice: either live separately from your family or force them all to quit their jobs in the breeding sheds.[12] Capitalist animality, Blanchette notes, puts workers to work even when they're not *at* work. The end goal, muses Drew Collins, an engineer and corporate manager for Dover Foods, might be the total "vertical integration" of the entire process, "includ[ing] everything from photosynthesis to the person eating the food."[13]

In the world's oceans, one machine, the whaling factory ship, played the central role in the greatest ecological crime of the twentieth century—the genocide of the whales. In *Red Leviathan,* Ryan Tucker Jones recounts this story, tracing the rise and fall of the Soviet whaling industry from the Russian Revolution and its maturation in the 1920s and 1930s, to its bloody climax in the 1950s and 1960s and halting decline in the 1970s and 1980s. The floating factory ship revolutionized the industry by opening up the world's largest hunting grounds, the Antarctic Sea, to nearly every country in the world. No longer dependent on access to islands for terrestrial processing, floating factory ships and their accompanying catcher ships could stay at sea hunting and rendering whales for months without stop. The factory ship was a truly monstrous technological advancement. Recalling his organization's first confrontations with the Soviet whaling fleet in the 1970s, Bob Hunter, president of Greenpeace, wrote that "it seemed we were staring into the face of a giant robot…a beast that fed itself through its anus, and it was into the inglorious hole that the last of the world's whales were vanishing before our eyes."[14]

In the 1920s and 1930s, Soviet whalers joined fleets from Japan, Norway, England, Germany, and Holland in pursuit of blue, fin, and humpback whales. But in the post-war years, when the Soviet fleet grew to seven factory ships with accompanying catcher ships, the Soviets hunted well-above their internationally-agreed-to quotas, taking up to 40 percent of the world's catch in 1964.[15] What's more, the vast majority of the whales killed in those years were never reported by the Soviet Union.

Many factors contributed to this mass killing. "Tonnage ideology" and Five-Year Plans certainly motivated ship captains, who, along with harpooners, enjoyed celebrity status both within their countries and abroad during the 1950s. The organization of labor around the so-called *kollektiv,* however, proved a decisive factor in the Soviet's destruction of the world's whales. As Jones argues, the kollektiv served as a microcosm for the ideal shape of Soviet society. These were groups of laborers oriented around a collective goal with a shared identity and fate. Kollektivs competed to butcher and render whales or raced to harpoon whales before other catcher ships. More than that, they were made up of men and women, some were members of the Communist Party, the Komsomol, or trade unions, and all were paid better than most Soviet citizens.[16] The state compensated kollektivs not just for exceeding their quotas, which whalers referred to as "long rubles," but also for time spent above or below certain latitudes—the so-called "polar bonus." And since they worked outside the territory of the Soviet Union, whalers often returned home with high quality consumer goods purchased at ports around the world. For the Soviets, the factory ship made whaling pay, fostered collective identities, and fulfilled desires for adventure. They also facilitated the near extinction of an entire species.

Many "machines," however, never realized such a total victory. A century earlier and on another continent, European soap and food manufacturers, liked Jürgens, Van der Berg, and the Lever Brothers, turned to machines and capital to remake the traditional labor practices of African farmers who cultivated and harvested oil palm trees. As Robins shows in *Oil Palm,* his five-hundred-year history of the tree's cultivation, Africans had profitably grown, processed, and sold palm oil to African and European traders for centuries. In addition to food, soap, detergent and cooking oil, oil palms could be used to make weapons, wine, medicines, roofing, and flooring in the pre-industrial era.[17] Amidst the second Industrial Revolution, palm oil also served as a key ingredient in explosives, cattle feed, tin-can coating, and most importantly of all, soap and margarine.

African palm oil cultivation, however, appeared backward and inefficient to European traders. Eager to win greater market share in Europe, firms negotiated concessions across West Africa and the Congo to operate palm oil mills and plantations. Their solution was to deploy new machinery, like seed presses and railroads, to modernize oil palm production. And when combined with cheap African labor, these machines would, in the words of Blanchette, "put people to work," operating the presses, harvesting palm fruit, and transporting its products.

Machinery and capital, however, did not lead automatically to European domination of oil palm production or even African labor. The reality was that few wanted to work in the grueling plantations or mills. African producers already made more money harvesting and processing palm oil with their own families, following the traditional gendered divisions of labor that had structured that work for decades.

Working in a European mill or plantation required a different kind of labor entirely. Robins recounts the story of one British mill seized from the Germans in Togo during the First World War. Under German control, the mill at Agou required 960 people to feed the machines around the clock. After the British took control, they could only get 184 workers to return.[18] Rather than consider why so few people wanted to work under these conditions, corporate directors fell back on the racist trope that Africans were lazy and then coerced them back into the mills and plantations through taxation, land seizures, and violence. As a result, corvée labor became the norm during the interwar years. A plantation and its expensive presses were useless without cheap labor to constantly feed them. As Robins writes, "The importance of humans in building, maintaining, and exploiting Africa's oil palms meant that any capitalist—no matter how impressive their machines—had to address the human factors in production."[19] By the 1930s, firms like Unilever turned to slavery. And shortly thereafter, they would move their operations to Southeast Asia, where rubber plantations had created a bevy of unfree labor, which now was funneled into oil palm production in the name of "development" and in service of postcolonial nationalist governments.

Although it represented a much smaller economic sector, Caribbean turtlers experienced a similar trajectory to Soviet whaling. As Crawford recounts, turtling was a traditional form of subsistence hunting, practiced by pre-Columbian indigenous peoples across the Caribbean for millennia. Before the Columbian Exchange, she estimates that the historical population of green turtles was between sixty-five and seventy-eight million, with over one million hawksbill.[20] Over the next five hundred years, however, the populations dwindled away through waves of overfishing. Turtlers first combed their own coastal waters before expanding their hunting range across the vast waterscapes of the Caribbean. By the early twentieth century, small capitalists in places like the Cayman Islands, consolidated and mechanized turtling fleets, looking to supply hungry markets, first in Europe and later in the United States.

The dramatic consequences of industrialization on turtle populations went unnoticed by many for decades. Compared to sugar and fruit plantations, which dominate the history of the region, turtling was perceived as a marginal economic activity practiced by "marginal" people. And live and work on the margins they did. Most "turtlemen" came from the Caribbean islands unsuited to plantation agriculture, like the Caymans. Their lives were peripatetic. Many worked part of the year as field hands in sugar and banana plantations, then as pearl divers, treasure hunters on sunken wrecks, guano fertilizer miners, and by the 1920s, booze runners.[21] Some turtlemen barely lived on land. In exchange for a cut of sales, independent contractors, known as rangers, hitched rides on turtle vessels to remote sandbars, mangroves, and coral reefs, where they lived for months in huts built three meters above the ocean's surface. There they caught and stored green and hawksbill turtles in water pens, known as kraals.[22]

Their labor, however, also signaled to turtlemen that their wild quarry was in danger. Turtlemen had to travel greater distances for smaller catches just to make ends meet, a sign that the turtles were disappearing. In the 1950s, these pressures were only exacerbated when Caribbean nations began feuding over fishing grounds and started arresting and harassing transient turtlemen in their maritime disputes. Neither political disruptions, diminishing catches, nor traditional knowledge,

however, could prevent overhunting. American canneries still demanded turtle meat. And so the practice continued into the 1970s, when few turtles remained.

In each of these books, a familiar story emerges. The powerful accelerate the exploitation of nonhuman nature through the dispossession and coercion of working peoples. Few, it seems, find an alternative way out. Or do they? In *Resource Radicals,* Thea Riofrancos highlights the emergence of a new environmental politics in Ecuador during the ratification of that country's 2008 constitution. The new constitution was a deeply contradictory document, as Riofrancos notes, simultaneously granting rights to nature and also assigning sole control over nature (most importantly in the form of fossil fuels and metals) to the state. What ensued was a battle over the meaning of the constitution, and with it, who decides the fate of the country's non-human denizens. On the one side was the government of then president Rafael Correa, which undertook what Riofrancos dubs "radical resource nationalism."[23] This ideology asserted the state's collective ownership over the country's natural resource and directed the proceeds from their sale toward alleviating poverty and expanding social services, education, and healthcare to as many people as possible. To his left were the "anti-extractivists," a coalition of indigenous nations, workers, and urban environmentalists, among others. They sought nothing short of a complete "civilizational" transformation, which radically "de-centered" humans in the democratic order. Under this model, "crude and ore were political protagonists; wetlands and mountains were moral agents."[24] In the new society envisioned by anti-extractivists, both people and the natural world would have a stake in democracy.

"Anti-extractivism," a political-economic critique developed over decades of indigenous struggle against the neoliberal state in Ecuador, identified the way the machinery and technology of extraction fundamentally shaped how people "knew" nature. Extractivism was more than just the acquisition and sale of hydrocarbons and metals. It was also the entire built world that supports this work: the infrastructure of highways, tunnels, and pipelines, not to mention the pollution that spreads through the air and water. "These pathways were carved out," Riofrancos writes, "by the constant egress of crude oil or semi-refined copper ore and the constant ingress of dollars to affected communities, whether to build schools or pay off local officials."[25] "Extractivism," much like Blanchette's "Herd," absorbs the lives, labor, and bodies of all the people who live within its orbit or consume its products. It also raises a fundamental question of political economy: Are people served by extraction or is extraction served by the people?

Ecuador's "anti-extractivists" represent a novel political formation, but not necessarily a novel epistemology. In each of these books, alternative ways of "knowing" nature surface through the cracks and fissures of each system of labor. Indigenous knowledge, myths, workers' embodied labor, and scientific observations, all offered alternative "future pasts," as Riofrancos calls these counter-hegemonies for living amongst nonhuman animals and nature. This is most apparent in her chapter on "*el territorio*"—the "sentient socio-natural landscapes" targeted for resource extraction by the government. In political debates, the Ecuadorian government asserted regularly that their opponents had "bad information" when it came to the "facts" of mining or fossil fuel production. In response, anti-extractivists turned this argument on its head. Privileging their own hard-won knowledge of el territorio—its

hills, waters, soils, and biota—activists argued that protection of this place was self-evident. It was up to the government to get the "good information," in this case, to see el territorio not just as "ecological and cultural landscapes, but also a moral-political agents."[26] Put another way by Riofrancos, "the solution was not more technical 'information,' but a fundamental reconfiguration of the relationship between humans and nature, and a different way of knowing *el territorio*."[27]

Workers at "Dover Foods" also possessed a counter-knowledge produced through their work. Take, for example, the role of workers in artificial insemination. For the factory directors, this was a process that has been incrementally automated and routinized to the point that every sow and every worker were expected to a follow a script. Workers performed a set of prescribed, discrete movements on the sows to prepare them for insemination. In turn, the sows responded to their touch, shaped by their predictable "instincts." Throughout this industrial form of human-pig intimacy, technology mediates the work of both actors, reinforcing the supposed divide between humans and animals. A "robo-boar," or moving cage, carried a breeding boar on a track around the shed to arouse the sows. Injections of mare blood serum and other drugs kept the sows in estrus only days after delivery. And workers were instructed to make an identical set of motions to complete the automated copulation: insert a spirette and bag of boar semen into each uterus, place a weighted band on each sow's back, and move on.[28] Underlying this system was a belief that workers and animals *both* possessed a kind of "embodied" nature, making them interchangeable and practically fully automated.

And yet as much as factory managers believed human and pig labor could be fully automated, workers knew a different truth about the pigs. As Miguel, an insemination worker remarked, "all sows are different."[29] Another insemination worker Felipe described how each sow responded to a different set of touches and movements for their arousal. He claimed the key was to become "like the boar" and even acted out differences in sow postures and hoof placement as signs to read before insemination.[30] Apart from the uneasy feelings Miguel's frank observations on interspecies sexual arousal created in his coworkers (and the reader), he was also articulating something more profound: that each sow was an individual, capable of "sentient desire," and thus not irreducible to simply an organic machine running on "instinct." Throughout *Porkopolis* Blanchette uncovers other places within the factory farm where novel forms of interspecies knowledge proliferate.

Soviet whaling was also replete with examples of how alternative ways of knowing nature emerged through the organization of labor. Soviet scientists, who accompanied whaling expeditions in service of the hunt, discovered much of what is known about whale biology, behavior, and sociality today. In 1933, cetologist Avenir Tomlin witnessed wounded humpbacks making distress calls to their family members, noting "an extraordinary range of communication capabilities" across several species. This was decades before it became common knowledge in the field of cetology. In the 1950s and '60s, Aleksandra Yablokov used Tomlin's research to identify the rapid decline in whale populations. In response, he argued for radical conservation practices that included tagging every single whale, monitoring populations year-round, turning whalers into whale shepherds, and even supporting aquaculture for whales. It was this same group of researchers who secretly recorded the Soviets'

undercounting of whale kills, which was only published in the 1990s.[31] Scientists were not the only ones to have advanced knowledge of whales. Aboard the ship, crew members quickly recognized the complexity of whales' social lives, noting differences in behavior between whale species and pods as well as their emotional intelligence—for example, their capacity for grief when a companion died.[32] Tragically, this knowledge did not precipitate the end of Soviet whaling. In fact, it only found greater acceptance in the country once the whales had mostly vanished from their hunting grounds.

The turtlemen of the western Caribbean offer another example of alternative epistemologies. With turtling waters decimated by the end of World War Two, side-lined turtlers and turtle captains put their knowledge to a new use by sharing their expertise with conservation-minded herpetologists. They taught scientists how to differentiate hawksbill and green turtles on sight, showed them where to find egg rookeries, and demonstrated how turtles basked in mangroves and unpopulated cays. Schooner captains told stories of the unparalleled homing abilities of sea turtles to herpetologists, who didn't know the animals traveled hundreds of miles across the Caribbean to find food, mate, and lay eggs. Archie Carr, the sea turtles most famous champion in the United States, turned the turtlemen's knowledge into the foundation of a sea turtle conservation program, tagging animals and even recruiting the US Navy to transport scientists and eggs around the Caribbean.[33] Eventually, Carr would push for the complete prohibition of turtle hunting, a fight that he won, but a victory that saved neither the turtles nor the turtlemen from near extinction.

As for African oil palm plantations, European imperialists and capitalists were incapable of understanding not just the needs of oil palms, but also how multiple African societies had already developed sophisticated practices of crop rotation, weeding, and plant breeding. Racism and European aesthetic preferences for monocultures were to blame. When Europeans tried to create their own plantations, they could only see palm groves as "wild" or "farmed," a binary that blinded them to very real labor that was occurring in ostensibly "wild" groves. Perhaps the best example of this was European ignorance of the rotational fallow period. During the fallow, Africans farmers pruned leaves and cleared brush, but didn't harvest fruit, clear cut trees, or clean weed the understory. For Europeans used to a "cleaner" aesthetic, these groves appeared overgrown and out of control. Even worse, Europeans believed, Africans were refusing to harvest fruit during this phase. In reality, each of the African farming practices contributed directly to production in subsequent years, through improved soil health, increased fruit growth, and suppressed pests and diseases. When a European looked at a "wild" African grove, they only saw waste, neglect, and laziness, not the labor that made palm oils and African societies flourish together.

As it turned out, European ignorance of oil palms made their plantations less productive than African groves. Despite spending decades trying to revolutionize oil palm production through mechanization, European plantations only accounted for one-fifth of a record palm oil and kernel harvest season in 1939. The other four fifths came from an array of small producers. As one European observer begrudgingly admitted, "The native farmers have evolved a system of palm culture which gives them the maximum output with the minimum labor expenditure, and must be considered eminently suitable and efficient for working natural palm forest."[34] The

European plantations owners, however, refused to change. Rather than give up their reliance on coerced labor, alter their cropping techniques, or change their harvest methods, they moved operations halfway around the world. As Robins reminds us, to embrace the African system of oil palm labor would mean allowing for the production of other plants in the grove, as well as other palm products for domestic consumption. For European producers, this would have required a rejection of the "market" and the demands of European empires. More fundamentally, it would have meant embracing an alternative way in which humans and nonhuman nature can live together.

And yet, does any of this really matter? In the age of climate catastrophe, violence compounds upon itself, extinguishing species and ecosystems, and with it, any hope that things might turn out different. Is there anything worth salvaging in these histories for our future or does only declension and despair remain? In the Soviet Union, indigenous myths would say no. In 1977, when the end of Soviet whaling lay just below the horizon, Yuri Rytkheu, a Chukchi writer, published *When the Whales Leave,* an indigenous origin story about a woman who marries a whale. Jones describes the myth this way: "Half the couple's offspring are humans, the other half whales, and the two species live in peace for a generation until one of their descendants…forgets humans' old kinship with sea creatures. Eventually he kills one of his whale brothers, which breaks the human connection to whales. The son dies and the whales leave Chukchi forever."[35] It seems humans were always fated to destroy our nonhuman cohabitants.

Blanchette puts the dilemma of studying histories of humans and nature in much clearer terms. He writes that, "What remains is something perhaps more honest: how people in this town, like so many of us, struggle with and against things they are a constitutive part of but do not know how to change."[36] Yet sprinkled through his work, as well as all the books considered in this review, are shoots of a better world. When discussing the many sites of abuse, exploitation, and interspecies immiseration, Blanchette notes that these same locations, whether farrowing sheds, slaughterhouses, or "runting rooms," are also the sites of "brewing struggle over…the shifting state of American industrial animality."[37] Our task is to be alive to these paradoxical spaces, whether on oil palm plantations, Soviet factory ships, Caribbean turtle "kraal" pens, or in Ecuadorian mines, locate the moments of "unintentional coordination" between living things, and seize upon them on our way to a better world.

Notes

1. Ryan Tucker Jones, *Red Leviathan: The Secret History of Soviet Whaling* (Chicago: University of Chicago Press, 2022), 125.
2. Alex Blanchette, *Porkopolis: American Animality, Standardized Life, and the Factory Farm* (Durham, NC: Duke University Press, 2020), 187.
3. Sharika Crawford, *The Last Turtlemen of the Caribbean: Waterscapes of Labor, Conservation, and Boundary Making* (Chapel Hill: University of North Carolina Press, 2020), 55.
4. In history, see Brett Walker, *Toxic Archipelago* (Seattle:University of Washington Press, 2010); on assemblages, see Anna Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton, NJ: Princeton University Press, 2021).
5. Bruno Latour, *The Pasteurization of France* (Cambridge, MA: Harvard University Press, 1988); Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory* (Oxford: Oxford University Press, 2007).

6. Donna Haraway, *Manifestly Haraway* (Minneapolis: University of Minnesota Press, 2016); Donna Haraway, *When Species Meet* (Minneapolis: University of Minnesota Press, 2008); Mara J. Goldman, Paul Nadasdy, Matthew Turner, eds., *Knowing Nature: Conversations at the Intersections of Political Ecology and Science Studies* (Chicago: University of Chicago Press, 2011).
7. Mrill Ingram, "Fermentation, Rot, and Other Human-Microbial Performances," in *Knowing Nature*, eds.Mara J. Goldman, Paul Nadasdy, Matthew Turner (2011), 101–103; see Bettina Stoezter, *Ruderal City: Ecologies of Migration and Urban Nature in Berlin* (Durham, NC: Duke University Press, 2021); "The Feral Atlas," curated and edited by Anna L. Tsing, Jennifer Deger, Alder Keleman Saxena and Feifei Zhou (Stanford, CA: Stanford University Press, 2021), https://feralatlas.org.
8. Jonathan E. Robins, *Oil Palm: A Global History* (Chapel Hill: University of North Carolina Press, 2021), 3.
9. Tsing, *Mushrooms,* 22.
10. Riofrancos, *Resource Radicals*, 160.
11. Blanchette, *Porkopolis*, 107
12. Blanchette, *Porkopolis*, 47–51.
13. Blanchette, *Porkopolis*, 23.
14. Jones, *Red Leviathan* ix.
15. Jones, *Red Leviathan,* 92.
16. Jones, *Red Leviathan*, 102–103.
17. Robins, *Oil Palm*, 18.
18. Robins, *Oil Palm*, 102.
19. Robins, *Oil Palm*, 120.
20. Crawford, *The Last Turtlemen*, 25.
21. Crawford, *The Last Turtlemen*, 4–5.
22. Crawford, *The Last Turtlemen,* 50–55.
23. Thea Riofrancos, *Resource Radicals: From Petro-Nationalism to Post-Extractivism in Ecuador* (Durham, NC: Duke University Press, 2020), 3.
24. Riofrancos, *Resource Radicals*, 61.
25. Riofrancos, *Resource Radicals*, 58–59.
26. Riofrancos, *Resource Radicals*, 140.
27. Ibid.
28. Blanchette, *Porkopolis*, 108–109.
29. Blanchette, *Porkopolis*, 112.
30. Ibid.
31. Jones, *Red Leviathan*, 133–136; 147.
32. Jones, *Red Leviathan*, 121–122.
33. Crawford, *The Last Turtlemen*, 125–131.
34. Robins, *Oil Palm*, 141.
35. Jones, *Red Leviathan*, 172
36. Blanchette, *Porkopolis*, 18.
37. Blanchette, *Porkopolis*, 20.

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