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## Life in the ruins

Anna Lowenhaupt Tsing

*The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* Princeton, Princeton University Press, 2013, US\$23.66, ISBN: 978-0691162751

Thom Van Dooren

*Flight Ways: Life and Loss at the Edge of Extinction*, New York, Columbia University Press, 2014, US\$24.00, ISBN: 978-0231166188

Jamie Lorimer

*Wildlife in the Anthropocene: Conservation after Nature*, Minneapolis, University of Minnesota Press, 2015. US\$25.00, ISBN: 978-0816681082

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“What obligations do we have to hold open space in the world for other living beings?” writes Thom Van Dooren in his book *Flight Ways* (p. 5). At a time when rapid climate change, accelerated species extinction, and growing wealth inequality have made ways of being in the world precarious for countless human and nonhuman actors, it is a fitting question. How to characterize this planetary moment is up for grabs, with Anthropocene, Capitalocene, or Chthulucene on offer. Despite the differences inherent in these epoch-making world views, each struggles to name what is

being felt, seen, and heard among diverse life forms inhabiting this Earth. The conditions faced by today’s creatures—rising temperatures, ocean acidification, leaky toxics, growing megacities, and vast monoculture plantations, to name a few—are essentially akin to the asteroid strike that brought an end to the Cretaceous period and ushered in a new era of life and life forms. Three books, all very good, all very different, all in conversation with each other, together offer a compelling collection with which to ponder what living, being, and acting in the world might mean for humans and nonhuman kin in this epoch end times. Written by Anna Loewnhaupt Tsing, Thom Van Dooren, and Jamie Lorimer, these books take us on journeys to the end of the world with matsutake mushrooms, albatrosses, whooping cranes, corn crakes, and Asian elephants, among other travelling companions, as we traverse the fields of anthropology and animal studies, critical geography and political ecology, history and philosophy. Inhabiting the edges of capitalism, extinction, and conservation, these authors offer provocative stories of life in the ruins; stories that make new worlds.

How, in just a matter of decades, has the ideal of Nature as an Edenic place of purity existing apart from the destructive hand of Man, animating more than a century of Western conservation efforts, so quickly collapsed? Dreams of mastery and control of Nature have come largely undone, though some still foretell a future where geo-engineering solves the planetary mess we are in. The promises of modern capitalism, too, heralding stable jobs, fair wages, and unlimited economic growth, seem, of late, more fiction than reality.

Economies are in flux. Global climate patterns are changing. The distribution and seasonal movements of plant and animal life are shifting. Futures are uncertain. What forms of critique, ethical responsibilities, pragmatic politics, and spaces of possibility does such a world invite? What stories are needed to imagine alternative ways of living and being, when the dominant Western narratives that have been told about humans and nature over the last two centuries are no longer up to the task?

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In *The Mushroom at the End of the World*, Anna Lowenhaupt Tsing looks to life in capitalist ruins to take notice of multispecies entanglements and collaborative survival. Her starting point is capitalism and its processes of alienation that turn human and nonhuman beings into resources, ripping living beings from the material, social, and historical relationships that build and sustain their life worlds. Tsing sees the colonial sugar plantation as emblematic of the ways in which alienation, interchangeability, and expansion became key to the scalability of capitalist projects that transformed landscapes and lives. Clone sugarcane, transplant it to the New World where it has few interspecies relations, and build a system of slave labour whereby humans become isolated as they are severed from past social relations, and you have a recipe for duplication in tropical environments across the globe. The plantation, she argues, following in the footsteps of Sidney Mintz, became the model for the modern industrial factory system. But the matsutake mushroom, a highly valued delicacy in Japan, defies efforts of alienation and standardization critical to the success of modern industrial landscapes and the making of commodities. Matsutake, despite the best efforts of Japanese research institutions, has never been successfully cultivated or cloned. The mushroom is the visible fruiting body of a vast underground vegetative structure of hyphae living in mutualistic association with certain forest trees, transforming dead and decaying matter into nutrients vital to other species. At the same time, matsutake supports the livelihoods of ethnically diverse groups of pickers, buyers, and field agents who gather in the Pacific Northwest, brought together by this mushroom, the different values and meanings it holds, and the commodity chains it has sprouted, reaching from Oregon to Japan.

“Why”, I once heard a sceptical audience member ask at a talk given by one of Tsing’s collaborators, “should we care about matsutake?” As commodities go, matsutake is hardly worth the attention of traders on the U.S., European, and Asian stock exchanges. But Tsing convinces us to pay attention. Her far-reaching, evocative, and imaginative telling spans the history of supply chains; encounters with forest foragers, including displaced Hmong, Lao, and Vietnam vets; the changing dynamics of forest species in Finland, Japan, and the Pacific Northwest; and the life world of the matsutake mushroom. This is a story, not of purity, but of contamination. Matsutake flourishes in the ruins of Oregon’s industrial forests, where highly prized and heavily logged ponderosa pine has given way to lodgepole pine, a species that thrives in disturbed soils

and enters into mutualistic relations with matsutake as the trees age.

Tsing looks to once divergent, but increasingly mainstream economies and ecologies to animate her story. The formal and informal economies that coalesce around matsutake occupy a kind of salvage accumulation. Here, capitalism, Tsing argues, is translation across sites of difference, where “value produced in unplanned patches is appropriated for capital” (p. 5). Neither labour nor raw materials are rationalized in this Japanese-sponsored supply chain. To foragers, living at the edge of capitalism, conditions of precarity also offer possibilities of freedom: an escape from formalized labour, a livelihood of one’s own making, and a return to the familiarity of the forest to relive and heal from war. Furthermore, the forests that make possible such livelihoods are the result of multispecies assemblages formed in the aftermath of industrial ruin; they are hardly the pristine, natural communities that became the objects of baseline research, preservation, and restoration by American ecologists and conservationists over much of the twentieth century. In the ecological community, so the theory goes, integrated division of labour operated to maintain and sustain the functional whole, that is, the climax state, and, thereby, resolve difference. Not so in Tsing’s accounts, where convergences can produce distinct multispecies gatherings—like the matsutake–lodgepole pine–human assemblage found on the eastern slopes of the Cascade forests—with futures that are indeterminate and ephemeral. Nor are species, in Tsing’s rendering, the self-contained units that drove much ecological and evolutionary theory in the twentieth century. Looking to a body of recent work on “symbiopoieses”, Tsing delights in the open-ended, contingent, and symbiotic nature of development that characterizes matsutake kinds and, as we are increasingly coming to (re)learn, much of the biological world. “Might population science need to step aside for an emergent multi-species historical ecology?” she provocatively asks us (p. 143).

There is much to admire in *The Mushroom at the End of the World*. Beautifully crafted and creatively told, Tsing’s story brilliantly melds ethnography, history, political economy, and biology into a seductive tale of living and surviving in precarious times and environments. Yet, life in the ruins is not all nice. Trauma and pain certainly make their appearance in Tsing’s telling, but do not make it to centre stage. Life in the ruins encompasses both tales of survival and tales of extinction. We need to be witness to both: to care enough to notice, to attend to other ways of being

in the world, and to ponder the ethical claims brought upon us by our entanglements with other life forms.

Thom Van Dooren's *Flight Ways* takes us deep into questions of life and loss at another edge at the end of the world: the dull edge of extinction. Why "dull"? Because, as Van Dooren eloquently writes, the deaths of the last individuals of a species "must be understood as singular losses in the midst of the tangled and ongoing patterns of loss that an extinction *is*" (p. 12). There is no razor's edge of extinction. When Martha, the last known passenger pigeon died in 1914 in the Cincinnati Zoo, her death marked not an abrupt rupture in the world, but the passing of the last tenuous relationships to a way of life, not static, but evolving, adapted and transformed by countless generations of Martha's ancestors over aeons of time. "To allow the term 'extinction' to stand for only the death of the last of a kind is to think with an impoverished notion of species", argues Van Dooren (p. 58). In a profoundly empathetic engagement with five groups of birds threatened by extinction—North Pacific albatrosses, Gyps vultures, Little Penguins, Whooping Cranes, and Hawaiian Crows—Van Dooren challenges his readers, much like Tsing does, to understand species, not as self-contained units or fixed forms, but as "vast intergenerational lineages, interwoven in rich patterns of co-becoming" (p. 12).

*Flight Ways* captivates with its moving prose, keen and surprising observations of avian life worlds, and haunting philosophical meditations. Curiosity is Van Dooren's entrée, empathy his method, and ethology his guide. The author uses these to show the interdependent relationships, patterns of behaviour, and temporal cycles that make up the flight ways of his subjects and the threats that promise to unravel these "knots of embodied time". In the middle of the North Pacific Ocean, 1200 miles from any human settlement, Laysan and Black-footed Albatrosses come to Midway Atoll to breed, nest, and fledge their young, and have done so for millennia. But today these birds are entangled with matter of a different temporality. Plastic rubbish from all parts of Earth swirls and gathers beneath the ocean's surface; Albatross species memory knows little of this matter, colourful plastics that fill birds' digestive tracts, long outlasting flesh and bone. These clashing temporal frames of animate and inanimate matter, and the resulting threat to these albatrosses' long-evolved patterns of life, are made visible through Van

Dooren's prose and in the disturbing photographs of Chris Jordan. In comprehending albatrosses and the evolutionary and ecological relationships that have sustained their being as a Cenozoic achievement, Van Dooren suggests that we must be responsible not just to the present, but to all living things that have come before during the last million years. The collective weight of such an ethical claim crushes any impulse toward human exceptionalism, which is precisely Van Dooren's intention.

But ethical claims made upon us are far more complex than simplistic appeals to value the interdependent web of life. "We may all be in the Anthropocene", notes Rob Nixon, "but we're not all in it in the same way".<sup>1</sup> The burdens of loss and suffering are unequally distributed. Some species will win, others will lose, in the planetary-scale experiment inextricably set in motion. With what other beings a way of life is most closely bound matters. Such is the case for three species of vulture in India. There, for hundreds of years, a symbiotic relationship among people, vultures, and cattle has existed. As efficient scavengers, vultures have cleansed the landscape of dead bodies—both human and bovine—helping to prevent the spread of pathogenic organisms, such as anthrax. But diclofenac, an anti-inflammatory drug used often by poor farmers to extend the life of their cattle, is toxic to vultures. Its use has decimated Indian vulture populations. And not only vultures have suffered. Poor communities are more vulnerable, as new less efficient and dangerous scavengers, specifically feral dogs carrying rabies, move in. More than 12 million poor people are bitten each year by dogs in India, where 25,000 to 30,000 rabies deaths occur each year. Such examples, Van Dooren argues, require us "to make a stand for some possible worlds and not others" (p. 60). In the absence of Nature, we have no easy moral guidelines for the multispecies worlds with which we must "cast our lot".<sup>2</sup>

And, yet, this is what we ask of wildlife conservation, forced to adopt a triage calculus, where some die so others live. Van Dooren brings us face to face with this conundrum and what he describes as "regimes of violent care" (p. 92) in his exploration of Whooping Crane conservation. Since the 1960s, efforts to rehabilitate the Whooping Crane, a North American migratory bird species whose numbers had dwindled to fewer than twenty birds at the start of the twentieth century, have centred on captive breeding and the imprinting of chicks. Coerced

1 Rob Nixon, "The Anthropocene: The Promise and Pitfalls of an Epochal Idea," *Edge Effects* (Nov. 6, 2014).

2 Donna Haraway, *Modest\_Witness@Second\_Millennium.FemaleMan@\_Meets\_OncomouseTM:Feminism and Technoscience* (New York: Routledge, 1997), 36.



restraint and abdominal massaging necessary to captive breeding stress male and female Whooping Cranes. Sandhill Cranes are harnessed as incubators of Whooping Crane eggs. Quail, too, serve as “royal tasters”, to ensure that a new batch of Whooping Crane feed is safe for consumption. Taking advantage of plasticity in the chick’s early development, costumed caregivers and ultralight aircraft take the place of Whooping Crane parents when it is time for fledged young to relearn ancient migratory patterns. One might marvel at the ingenuity and dedication of a restoration project that has resulted in healthier populations. But Van Dooren resists such a temptation. Instead, he asks us to dwell on this violence of care, to “stay with the trouble”, in the words of Donna Haraway, and to recognize and ponder the sacrifice of others necessary to bring a species back from the dead. Pain and suffering, it seems, are never far removed from care when “gardening in the ruins”.

*Flight Ways* ends on a note of mourning. In Western thought, the capacity to grieve for and remember the dead has served to distinguish the human from the animal. But Van Dooren looks to ethology to shatter that pretence of human exceptionalism. Drawing upon studies and anecdotes of crow behaviour suggestive of a capacity for empathy, if not grief, Van Dooren takes us on an admittedly speculative imagining of the meanings of death and dying in the corvid’s world. One can doubt such speculations while still appreciating Van Dooren’s larger claim. Grief points to a shared world. Our inability to acknowledge, let alone mourn, the passing of the Hawaiian Crow from this Earth suggests how we fail to see them as sharing our world. Such exceptionalist positions can no longer stand as the human species becomes increasingly implicated and entangled in the life worlds of other beings with whom we share this planet and depend upon for our mutual survival.

What might conservation after Nature look like when gardening in the ruins, rather than restoring the Garden of Eden, is the pragmatic reality we now face? “The future looks bleak”, argues Jamie Lorimer “for the vast majority of forms of life not blessed by charisma, adaptive enough to go feral, or productive enough to be domesticated” (p. 76). In *Wildlife in the Anthropocene*, Lorimer puts forth what he terms a “cosmopolitics for wildlife”, drawing on the work of Donna Haraway, Isabelle Stengers, Sarah Watmore, and others, that would foster not a return to past Nature, nor a “rendering of the present eternal” (p. 14). Instead, Lorimer, like other interlocutors in the environmental humanities, including Tsing and Van

Dooren, is committed to a process philosophy of life, in which species are not fixed forms but “ecologies of becomings” (p. 7). Conservation, then, becomes a performative strategy in facilitating the flourishing of open-ended assemblages of multispecies difference. Lorimer is wise to the fact that such hybrid and fluid natures may well be “more conducive to the demands of neoliberal capitalism than a fixed Nature” (p. 12). But he does not flinch.

*Wildlife in the Anthropocene* is particularly astute in making visible the different “affective logics”—the multiple ways of encountering, knowing, and feeling wildlife that animate the practices and strategies of conservation. The embodied encounters of the scientist in the field, technologies that extend the range of human perception, and the emotional attachments to organisms and places are all at work in the knowledge that gets produced and the valuation of species. So, too, is charisma. Lorimer offers some of the most thoughtful analyses I have read of how charisma—parsed out into aesthetic, ecological, and corporeal—operates to privilege some forms of interspecies relations and not others. Through charisma, certain species, such as elephants, are turned into “lively capital”, flagship, cosmopolitan species generating surplus value to finance conservation in an era of government retrenchment. Yet, this privileging of species with commodity value often comes at the expense of other ways of life. For example, the livelihoods of local farmers are threatened by the changing habits of elephants, who have newly learned crop-raiding as a survival strategy.

Lorimer, thus, brings us back full circle to Tsing. Scientists, tourists, mahouts, and Assamese farmers all have different encounters and value relations with Asian elephants. But the plurality of encounter values is effaced when it is reduced to a singular, alienating valuation based on monetary exchange, as when elephants become global commodities of ecotourism that trump all other relationships and valuations. A cosmopolitics of wildlife demands a politics and political economy that holds open the possibility of different forms of value. It is the best hope for the flourishing of multispecies difference when, as Lorimer argues, “the profit imperative of commodified encounters tends to foreclose on difference and the epistemic and ethical possibilities of curiosity” (p. 182).

At a moment when work in the ecology and systematics of the microbial world increasingly reveals how we, as humans, are but an entangled bank, a complex assemblage of animal–microbiome interactions, the Anthropocene strikes back with a vengeance, reasserting the primacy of *Homo sapiens*



in driving the evolution of life, for good or ill, on the planet. Stratigraphers will debate and ultimately decide whether the Anthropocene officially marks a new geological epoch in the annals of science. But we dare not cede discussion of its meaning and implications to those occupied solely with rocks, sediments, and chemistry. It is, after all, life—past, present, and future—that bears witness, in fossilized bones and living flesh, to planetary-scale change in which the human species and other life forms have been active participants. We concern ourselves with the Great Acceleration, failing to acknowledge that we are not the only species that have transformed the biogeochemistry of the Earth. Cyanobacteria claim precedent by almost 2.5 billion years. Their sedimentary remains in stromatolites provide evidence of the Great Oxygenation Event, when their photosynthetic capacities transformed the atmosphere of the Earth leading to widespread geological and biological

change. It is hubris to suggest that we are the only species that has reshaped life on earth.

In their embrace of multispecies ethnography and symbiopoiesis, Tsing, Van Dooren, and Lorimer help to make visible the existence of different perceptual worlds, inhabited by different beings, occupying different scales of time, that nevertheless meet. We need a polyphonic symphony of voices, from different knowledge disciplines, from people who occupy different places and walks of life on the planet, and from other nonhuman species to temper the hubris of the Anthropos and the homogenizing tendencies of the Capitalocene. Perhaps at the edge of capitalism, at the dull edge of extinction, where different beings with different histories gather, where different valuations, economies, and temporalities converge, perhaps here, among life in the ruins, unfolds a fable for our time.