Migrations and Radical Environmental Change

When Social History Meets the History of Science

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Bruno Latour 2018: Down to Earth. Politics in the New Climate Regime. Cambridge, MA/Oxford/Boston: Polity, brosch., 140 S., US\$ 14.95, ISBN: 978-1-50953-057-1 [Das terrestrische Manifest, Berlin: Suhrkamp 2018].

Sam White 2017: A Cold Welcome. The Little Ice Age and Europe's Encounter with North America. Cambridge, MA: Harvard University Press, geb., 376 S., US\$ 29.95, ISBN: 978-0-67497-192-9.

Hannah Holleman 2018: Dust Bowls of Empire, Imperialism, Environmental Politics, and the Injustice of "Green" Capitalism. New Haven: Yale University Press, geb., 256 S., US\$ 35.00, ISBN: 978-0-30023-020-8.

Marco Armiero and Richard Tucker 2017: Environmental History of Migrations. London: Earthscan from Routledge, brosch., 215 S., US\$ 36.99, ISBN: 978-0-36717-262-6.

Introduction

The category of climate or environmental refugees is new and ill fits the post-World War II framework of individuals' legal protection against persecution and violence.¹ Environmental migration is not a new phenomenon

though, nor is the historiography of environmental migration (Lübken 2012). Interestingly enough, two field-defining studies in environmental history that emerged from the history of science, technology and medicine, dealt prominently with migrations: Donald Worster's *The Dust Bowl* (1979) and Alfred Crosby's *Columbian Exchange* (1972). The two monographs reviewed here, Hannah Holleman's *Dust Bowls of Empire* and Sam White's *A Cold Welcome*, build on and look beyond these authors (see White's discussion on Crosby, 24–26; Holleman's discussion on Worster 6–7; 42–46). Both Worster and Crosby cast their net of historical inquiry wide to capture not only the actual dislocations and experience of people on the move, but also the perhaps remote political responsibilities, triggered events, as well as the origins and long-term effects. Relative comprehensiveness, it seems, best corresponds with the complex interrelations between migration and environmental change. *The Dust Bowl* is a history of US agricultural capitalism and its manifold migratory causes and consequences. Even though the book is dedicated to all “dispossessed and uprooted and anonymous *Okies*”, migrant farm workers fleeing the Great Plains in the drought years of the 1930s (viii), Worster devoted most of his pages to those who had migrated West one, two, or maybe three generations ago to the Plains and decided to stay put even throughout the dust bowl years. Worster explored these settlers' agricultural practices and their unfailingly overoptimistic notions of regional climate patterns, a misinterpretation ultimately kept afloat by state funding schemes. What was on the move though, was the environment. By 1938, ten million acres of the Plains had lost at least five inches of topsoil and continued to lose 850 million tons of earth per year in the late 1930s (29). Crosby's *Columbian Exchange* is a history of the colonial encounter between Europe and the Americas. Crosby studied the connections between the movement of communicable diseases and people, giving an early account of food commodity chains, and an analysis of population growth. The very material, biological exchange, he argued, disrupted the ecological balance of both world regions, with consequences that outmatched the accompanying political violence and trading of ideas in their impact on the creation of the modern world.

That many people will be forced to relocate, temporarily or permanently, because of ongoing local or regional environmental degradation (such as landscape consumption through mining, deforestation, soil erosion, or contamination) or recurrent extreme weather events causing habitat destruction, is the standard prediction when discussing climate and environment-induced migration. There will be easy-to-classify environmental migration due to rising sea levels, weather hazards, or geological disasters in some areas—without it becoming an uncontested step for those living in endangered environments (Farbotko 2018). Yet multifactorial explanations are

the rule rather than the exception in both migration studies and environmental research.

Rapid environmental change will have a more prominent effect on diverse causes of migration in the longer term. Every category of migrants—political refugee, asylum seeker, developmental refugee (Robert Nixon), economic migrant, seasonal worker—might end up being indexed ecologically. Global warming is likely to fuel political conflicts, shrink national economies, and unsettle or devalue long-held knowledge and uses of local and regional nature, even though its precise impact might remain difficult to measure. Another obvious factor that broadens the picture and hence the field of research is radical environmental change — albeit slow or rapid, may be both the cause and the consequence of (forced) migrations. The latter phenomenon is evident in histories of settler colonialism but also of labor migration. Many chapters in the volume *Environmental History of Modern Migrations* edited by Marco Armiero and Richard Tucker emphasize this. Uwe Lübken, in his 2012 introductory essay to the history of environmental migration is right to point out that a productive avenue of research aims “not so much to find clear cases of environmental migration, but rather to filter out the environmental components” (Lübken 2012: 12). The books under review here share this concern as well as a common thread: they address issues of scale.

Multiscalar Phenomena

The multiscalar and interdependent character of the issues at stake is the starting point for Bruno Latour’s 2018 essay *Down to Earth: Politics in the New Climatic Regime*. Latour begins by conveying his overall assessment in bold strokes. “Migrations, explosions of inequality, and the new Climatic Regime: *these are one and the same threat*” (9). He argues that political reactions to the twin phenomenon of political refuge and labor migration on the one hand, and our struggle to effectively address global warming on the other, are connected logically despite being unevenly embraced individually (9–10). Latour maintains that radical environmental change and migrations are epistemologically linked through specific notions of place, namely “territory” and “soil”. They are also linked through people’s experiences of loss by way of actual displacement, social exclusion, or degradation: deprivation might be the right word (6–12). And sometimes the environment in flux takes on migratory aspects: ongoing environmental problems play out over spaces that hardly ever coincide with politically defined territories. Whatever constituents and their governments do to protect their

territories from outside events, a specific class of “migrations” trespasses borders no matter how sophisticated or militarized: “Climate, soil erosion, environmental pollution, resource depletion, habitat destruction” (10).

We are well aware of the dilemma that Latour describes. Both the processes of migrations and radical environmental change are forcing us to stretch our political imagination. We care about our world at the intimate scale linked to the territories we inhabit. We are easily mobilized on their behalf, not only to defend them (the politics of “not in my backyard,” or NIMBY, readily spring to mind for the most diverse causes), but also in using and coproducing them, mapping and delimiting them, monitoring them, knowing their particularities, or registering their deterioration. In contrast, it is extremely problematic for us to think and act as earth dwellers and find ways of developing affinities not with territories but with the terrestrial. We therefore find it difficult, Latour argues, to establish inclusive notions of interdependency that counteract the current state of globalization, with dominant political economies based on the massive consumption of natural resources and a cheap migratory labor force, while yielding extreme income differentials and nurturing visions of quasi extraterritorial refuge for the extraordinary rich (18, 36).² As a political way forward, Latour proposes to redirect our efforts and conceive our socio-natural world not so much as a production system where nature represents resources; but rather as a (multispecies) system of agents that together engender or enable the specific layer of the earth that was called biosphere in the twentieth century and is now being reconfigured by some earth, soil, and social scientists as “critical zone” (74–82). To initiate such reorientation, Latour points to the much-studied *Cahiers de Doléances*, lists of grievances compiled by and among the French in 1789. Social historians of the French Revolution argue that the very act of writing down the grievances helped bring about new political notions and eventually ended the *Ancien Régime*. Similarly, stocktaking projects that account for individual and community interdependencies could create the political climate for meaningful, ultimately revolutionary political change today (96–97). I have one question though: an absolutist king had demanded to hear people’s grievances in the late eighteenth century. Nowadays, and for quite some time now, people have been facing the issue of who would coordinate such massive, if decentralized, endeavors; many smaller reassessment projects are already underway without having gathered the desired political momentum.

US historian Sam White studied community interdependencies within the imperial endeavors of settlement expeditions. His book *A Cold Welcome* focuses on small communities and their reliance on the colonial backup infrastructures in place for coping with everyday life. White describes the earliest British, Spanish, and French colonies that settled in North Amer-

ica following the first voyage of Columbus in 1492 and before the pilgrim ship the *Mayflower* landed in 1620, the event which heralded the Anglo-centered history of the United States (5). From the outset, these migrations were environmentally driven. The prospect of mineral wealth and an ideal Mediterranean climate for agriculture (29, 57) were major incentives for British project planners and investors to fund colonial voyages and settlement. New furnaces were even erected in Dartmouth, a port in South West England, ready to treat ores that never arrived (95–96).

The settler populations (in French and Spanish Florida, New Mexico, on Roanoke Island, in Virginia and Maine) ranged from several dozens to hundreds and were often severely decimated due to illnesses, malnutrition, hunger, cold, and drought. White details these local variations because each expedition and colony faced its own difficulties (252). At the same time, he scales up the temporal dimension of analysis by using recent methodological and empirical advances in climate history and the new academic interest in geohistorical concepts, to better assess the environmental components of his accounts. Patiently, he unfolds how tree rings, pollen, or other proxy data reveal where drought occurred, or that a specific year or decade was unusually cold. In this way he gains an additional framework for interpreting the interactions between migrations and radical environmental change he had found in archival and printed sources (93). If we are interested in the history of modern societies as co-extensive and interacting with earth history, such exercises of creative commensuration (Westermann 2020) will continue to be important.

The colonists migrating from Europe moved away from their changing, ever more unaccommodating weather conditions to supposedly milder climes. In North America, however, long-held assumptions about the equation of latitudes and their climates did not match the reality. Classical meteorology claimed there were concentric climate bands: an icy zone at the poles and a dry, hot zone in the tropics, with temperate zones in between. “It was only natural for educated Europeans to assume that today’s eastern United States would grow the crops of Italy or Israel” (11). They were rapidly proven wrong. The climate the Spanish encountered in New Mexico (also called Northern New Spain) with its exceptionally dry summers and cold winters resembled in no way the “Andalusia” they had expected. The settlers rhymed: “Ocho meses de invierno y cuatro meses de infierno” (175). Yet the newcomers could not grasp the other half of the truth, namely that they were facing years of radical climatic anomalies. Hence, they could not rely on any clues or terms of reference to understand what was the rule and what was exceptional about the new environment’s seasonal weather. White’s overall argument is that an environment subject to climate change, in other words in exceptional flux, rendered any attempts at adaptation

nearly impossible. The inconsistency and unpredictability made true disasters out of what otherwise would have been sheer difficulties or failures (156). One major conclusion White draws is that the Spanish became so disillusioned with their efforts to settle in Northeastern America, that they lost interest in keeping out their British or French rivals (251).

For White, the climate of the “Little Ice Age” (White 2014) helps to explain the complexity of why early colonialism got deadlier and more violent among the colonialists and towards Native Americans, despite the fact, as White underlines, that racism had not yet been cemented culturally (19–23). Strangely, the colonialists were oblivious to gaining indigenous knowledge about the startling and for them overwhelming weather conditions (217, 254). Due to the adverse climate patterns, some communities of native Americans started to migrate westward or reorganized their community life in a more hierarchical manner, decisions the Europeans failed to explore and interpret as measures of climate change mitigation.

Scaling Up the Dust Bowl

US sociologist Hannah Holleman argues that soil erosion is an unintended but largely accepted consequence of mass-industrialized monocrop agriculture, a business model repeatedly exported by colonial powers and their successor states. That is the reason she scales up Worster’s work, in which he had already pointed out that the Dust Bowl was an extension, not an exception to the rest of America and its capitalist ethos (43, 46; see Worster, 96–97). From an eco-marxist, postcolonial perspective (John Bellamy Foster is a colleague and mentor), she argues that the US Dust Bowl might be the most famous example of soil degradation. It was no singular phenomenon though. At the turn of the century already, massive soil erosion was observed by many other imperial state authorities colonizing and exploiting foreign lands as well as by their critics. Sam White seeks historical precedents as an analogue to understand societies coping with climate uncertainty and gauging the unprecedented; Hannah Holleman, however, looks at earlier instances of a continuing dynamic, that is episodes causally linked to the present, thereby uncovering structural or strategic blind spots in our approach to the problems.

Whereas White studies the adverse climate confronting the early colonialists in North America, Holleman studies the consequences of their massive arrival in the late nineteenth century. In chapter 1, she explains the present state of and knowledge about the world’s soils and their erosion by drawing on expert reports, political briefs, and academic literature. By

the early 2000s, 80 per cent of the soil had been affected by moderate to severe erosion. The book explains the practice and culture of “mining the soils” (22), what the United Nations Food and Agricultural Organization (FAO) describes in its 2015 *Status of the World's Soil Resources* as the conversion of once replenishable soils into exhaustible resources. Soils have become finite resources because their loss and degradation are not recoverable within a human lifespan (19–20)—due to a major shift in use patterns. Chapter 2 presents soil erosion, desertification, or “dust-bowlization” as the first globally recognized, environmental issue. From a large array of what Holleman calls “understudied”³ sources published in the British Empire, Russia, and the US before and around 1900, the author sketches the picture of what was known before the 1930s through special commission investigations in South Africa, or studies in India, Canada, and Australia (47–54). The metaphor “mining whatever fertility that had been accumulated over the ages” (48) conveyed the drama right from the start. Holleman scrutinizes these widely-circulating warnings about the ill-effects of soil erosion (especially 81–95). The author concentrates on yet another research interest: questioning why the vast amount of knowledge experts had acquired about soil erosion over the past century made little difference to stopping or reversing degradation. She explains the non-action towards environmental degradation or its sheer acceptance, as structural violence. In chapter 4, she recounts the “Prologue to the Dust Bowl” (66), that is the displacement and settlement politics on the Southern and Western Plains since the nineteenth century, arguing that capitalism is inherently violent towards both racialized social groups and the earth. “The domination of the environment is actually reflective of the domination of human beings,” Holleman quotes David Naguib Pellow, a prominent scholar in environmental studies, then highlights that many early twentieth century social scientists, such as Rudolf Hilferding, Max Weber, or W.E.B. DuBois, put forward the same argument in their analyses of capitalism (46 and 55–73). We know that the globalizing capitalist division of labor and the political domination of colonized societies were accompanied by nature conservation at home (Grove 1996; Spence 1999). Attention to soil erosion increased alongside the modernization of former plantation economies that relied on labor migrations to produce cotton, tobacco, sugarcane, or other food crops. An outgrowth of colonial development, the power elite’s conservationism might have been spelled out in holistic terms environmentally but failed to embrace politically inclusive terms, an asymmetry with long-term consequences (95). When in the midst of the Dust Bowl disaster, Congress passed the Indian Reorganization Act to end allotment and reinstate tribal governments, native people had already lost 90 per cent of their former land between 1890 and 1933. Both disaster and dis-

aster relief had very different outcomes for them, as well as white settlers, unlanded farmworkers, and Black-American communities (114–115).

While the New Deal solution to the Dust Bowl crisis is often cited as best practice for mitigating and adapting to recurrent droughts, there are other assessments: a study by the University of Chicago and NASA “simulating US agriculture in a modern dust bowl drought” found that despite the accumulated experience, ecological knowledge, and the technological advances in agriculture, today’s system is not more resilient, and the consequences of severe droughts becoming more frequent due to global warming would be unprecedented (122). Without addressing social and environmental justice components together, Holleman argues, we will not be able to deal with soil erosion as both a consequence and cause of migrations. Here she agrees with Latour. Holleman’s final chapters cover the critical reception of the UN climate change policies among non-Western countries, poor communities, and indigenous citizens in Latin America or Asia. Under the heading of the climate justice movement, they have exposed many political measures of the Paris climate agreement as being closely aligned to the colonial environmentalism of the early twentieth century and to the stakeholder language of resource economics (157). On a critical note: Holleman points to indigenous practices as alternatives to “green capitalism”, but does not provide details of indigenous or alternative concepts, community actions, or histories of degrowth in arid environments (Whyte 2018; Suzman 2017).

Body Politics, Water Politics

Historians of (cameralistic) science Marco Armiero and Richard Tucker edited a volume on their collaborative project with European and US environmental historians. The eleven case studies are mostly located in Hawaii, Brazil, and the United States, but also in China, the Russian Far East, Belgium, and Australia. The editors devised three analytical strands for studying the environmental history of migrations: “Changing natures” dealing with the transformation of landscapes by settlers and migrant workers; “racializing natures” intertwining research on the ideas of othering and nativism with environmental history approaches; and “naturalizing causes” exploring whether current debates on environmental displacement actually risk depoliticizing the reasons for migrations. The book’s overall perspective is distinctly grounded in social history.

This trend is exemplified in two essays, one dealing with the issues of scale, the other with soil erosion in arid environments. Let us start

with the somewhat flawed essay, Daniele Valisena's and Marco Armiero's "Coal lives: bodies, work, and memory among Italian miners in Wallonia, Belgium". The text catches the reader's attention by promising appealing research topics, the "memorial and corporal ecologies in which migrants are entangled" (90) and how Italian miners viewed Belgium's "metabolism of coal" (91). Valisena and Armiero downscale their analysis from the environment to the worker's body, which "becomes a methodological but also an epistemological site that widens the migration studies lens and bridges it with environmental history" (90). The concepts behind these notions, however, are never really applied. What the authors claim, in passing, has been better explained by others: the bodily experience of working environments and issues of occupational health can be studied productively within a framework of environmental history (Sellers 2000). That miners, also immigrant miners, developed strong collective identities and that the relative isolation of their workspace underground contributed to forming political identities and successfully claiming societal participation, are arguably the founding ideas of much of British and German social history. Timothy Mitchell recently emphasized these ideas, maybe in too idealized terms, in his *Carbon Democracy* (Mitchell 2011). Valisena and Armiero highlight the important role played by Italian miners in the fight for silicosis and occupational health compensation without including this fight in their actual analysis. It is also reasonable to assume, like the authors, that miners are knowledgeable about the ore bodies or coal seams they work and exhaust (98). Yet the authors never discuss how this knowledge was tied to, complemented, or challenged the more formalized mining knowledge of engineers, geologists, chemists, etc. While it is evident that mining not only eats away the landscape but also the workers' bodies, and the authors see the semantic fields of immigrant others, hygiene, and dirt or coal dust overlapping in ways well known from ethnic and race studies (96–97), their arguments remain strangely raw, and unworked. Their article aims to study a brilliant case, but ends up accomplishing too little.

In contrast, Angus Wright's "Environmental degradation as a cause of migration" tells "cautionary tales from Brazil" about the pitfalls of framing migrations, in the wake of climate change predictions, as environmental or climate migrations (159, 174). His chapter on drought experiences in the Brazilian Northeast since the eighteenth century provides a concise—if condensed—social history interpretation of the drought-accompanying mass migrations of thousands of people to urban, industrial centers on the Atlantic coast or the more prosperous southern regions (164). The Northeast is the hinterland of the Atlantic shore that had witnessed the early European settlement. From there, many riches had been exported since the sixteenth century: timber, sugar, and tropical export commodi-

ties as well as diamonds. Until 1888, when Brazil ended slavery, the far interior of the Northeast had also been a refuge for slaves and free laborers fleeing the plantations. Yet by the mid nineteenth century, the dynamic economic sectors, along with the investments of the old elites, had shifted southwards.

The Northeast began to be seen as backward. Its inhabitants left in droves whenever confronted with climate extremes, some of which occurred three or four times in both the eighteenth and nineteenth centuries, and periodically throughout the twentieth century (164). Like the Okies, these migrants, called *retirantes*, became popular cultural figures in their own right; their stories are the fabric of novels and current telenovelas (170–171). In contrast to the Dust Bowl refugees, there are many generations of *retirantes*. During the extreme drought of the late 1870s, photographs of “desperate people congregating in what would become known as ‘concentration camps’ scandalized the nation” (165). At the same time, these camps were a repository of cheap labor for regional ranches, plantations, or railroad construction sites. In World War II, the business and government sectors made recurrent and concerted use of the drought-induced migrations from the Northeast by enlisting refugees in the rubber industry. In the 1970s and 1980s, drought refugees were channeled into the colonization of the Amazon region (171–172).

Wright explains the successive reasons people gave for the Northeast’s endemic poverty. The first argument blamed the plantation system and the non-diversification of the economy: slavery maintained the monopoly of power and the wasteful use of land and labor (162). Others shifted the blame to (human) nature (161), holding the region’s largely uneducated population of mixed racial descent accountable. The late nineteenth century saw the racist discourse explaining declining productivity supplanted by yet another reference to nature: now the periodic droughts were causing the Northeast’s problems (163). This notion has never lost currency because it helped to marginalize the demand for social and political change. What is more, it even helped to maintain and modernize the political economy, establishing what Brazilians refer to since the 1950s as “the drought industry”: a complex political and economic scheme of national and international subsidies, funding, and industrial make-overs based on the technical infrastructure of large-scale irrigation and dam-building. Water storage has been steadfastly promoted at the expense of other development strategies (169). Wright analyzes a range of sources to convincingly argue that drought in Brazil has long stopped being simply a natural or man-made climatic phenomenon. “Instead it has become a politically and economically effective concept used to divert state resources

and support the inequitable and anti-democratic political and economic arrangements that are the underlying problem of the Northeast” (167).

Conclusion

What insights can the history of migrations and pronounced environmental changes offer the history of science? From the books under review I conclude: environmental migration is a topical field begging for interdisciplinary approaches of a forgotten kind. To explore the reality of epistemological pluralism in politics and society, historians of science will benefit from embracing—and enriching—the long and interesting path of social history since its heydays in the 1980s. In turn, familiarity with standard approaches in Science and Technology Studies might well be essential for studying the societal backup infrastructures (urban, communicational, scientific, political, communal, financial, religious) in place for communities facing environments in flux. As White’s book shows, this is a worthwhile way to extend our current repertoire of collective climate change experiences. The topic of migrations and environmental change has historians rushing to new sites, acknowledging new actors, exploring the interdependent, multiscalar relations between the terrestrial and the societal, and consequently reframing or extending the bodies of knowledge to be studied. On that note, Bruno Latour has made a decades-long planetary-terrestrial detour in order to study again, albeit from a radically expanded angle, soil science, which was the subject of his seminal article, *Circulating Reference: Sampling the Soil in the Amazon Forest* back in 1999 already.⁴

Endnotes

- 1 Discussions are, as a rule, legal in their outline (Corlett 2008; McAdam 2012; Hall 2016). For a recent overview see Klepp (2017).
- 2 A stunning example is Evan Osnos (2017).
- 3 For initial histories of soils science and drought, see Clarence Glacken (2017); William Beinart (1984, 2008). See also my discussion of Angus Wright’s chapter on Brazil in Armiero and Tucker below.
- 4 See the interview with Bruno Latour: “‘Science wars’ veteran has a new mission,” in *Science* 358 (2017) 6360, 159.

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