Conclusion

When I was a graduate student, my adviser recommended that I avoid writing in the "ethnographic present," which means speaking of a subject as if it existed in a perpetual now and claiming that cultural forms are somehow static. This remains good advice for a variety of reasons. This book, like many contemporary works of anthropological ethnography, is a kind of history, even if it is about how the members of AMBED and the residents of the Montelimar sugarcane zone worked to imagine futures amid a devastating epidemic. By way of a conclusion, I want to take a moment to think further about the temporal dimensions of CKDnt, of Nicaragua's sugarcane boom, of chemically driven monoculture, and of planetary health.

On one of my first visits to Montelimar, Saúl insisted that we take a break from our visits to CKDnt-affected communities and drive into the interior of the plantation for some real anthropology. Somewhere off the road that connects the village of El Apante to El Borbollón, the municipal reservoir serving

the town of Villa El Carmen, there is a small, mostly dried-up riverbed, with a tiny hut sitting just above. The signs welcome visitors to the "Archaeological Site of the Pozo de Danto Forest Reserve." Down in the riverbed are petroglyphs that, archaeologists reckon, were carved into the rock by Chorotega people between 800 and 1350 CE. There are faces, full human figures, a few images that look more like they could be monkeys, and a rendering of what the informational sign on the riverbank calls the Cruz Americana, the "American Cross," "a symbol of orientation to the four cardinal directions."

Here, amid the vast stands of cane, was evidence of the land's past occupation by Indigenous groups who relied on this and many other rivers for clay, stone, fish, and, of course, water. Here was a kind of ruin, evidence of a past settlement and a bygone way of living on this landscape. When scholars think of the state of the planet today, they frequently speak in terms of ruins. CKDnt seems like a paradigmatic example of late capitalist "ruination," a sign that the heyday of industrial monocrop capitalism is approaching its end. If workers are dying in such numbers, surely this is what some CKDnt scientists have argued is a tipping point for this form of production.[1] But such a view may be overly optimistic; after all, places like western Nicaragua have been sites of plantation-based ruination for centuries.[2] The sugarcane boom of the early twenty-first century is just the latest chapter. The violence runs deep. Problems like CKDnt may be signs of a profound pathology in monocrop production, but monocrop production has always been pathological. Workers, already low-paid and racially marginalized, have always carried a disproportionate risk of bodily harm due to faulty machinery, pesticide exposure, and chronic repetitive stress.

In most years, there is no water running beneath the petroglyphs. In reviewing the pictures I took all those years ago, glimpses of the faded remains of Chorotega presence in what is now the sugarcane zone, I am reminded of an article written by the journalist Francisco A. Guevara Jerez. The subject was Nicaragua's rural water crisis.[3] As an epigraph to a lengthy scholarly explanation of how a country that, despite its numerous aquifers, freshwater lakes, rainforests, and rivers, has become associated with a generalized thirst, Guevara Jerez quotes "Canto de la Guerra de Las Cosas" (Anthem of the War of Things), by the Nicaraguan poet Joaquín Pasos:

> Water is blood's only eternity.
> Its strength, made into blood. Its restlessness, made into blood.
> Its violent longing for wind and sky,
> made into blood.
> Tomorrow they will say that blood became dust;

tomorrow the blood will be dried.
Neither sweat, nor tears, nor urine
Will be able to fill the void of an empty heart.
Tomorrow they will envy the hydraulic pump of a throbbing toilet,
The living constancy of a faucet,
The thick liquid.
The river will take charge of the destroyed kidneys
and in the middle of the desert the cross of bones will ask in vain for
water to return to the bodies of men.

These words read like a contemporary meditation on climate change and its ravages on bodies and landscapes. Life transfers to the toilet and the faucet. Deserts are all that remain. Pasos wrote these apocalyptic verses, complete with explicit reference to "destroyed kidneys," some three-quarters of a century before the CKDnt epidemic emerged. I quote them here because they mention destroyed kidneys, and because they offer an oblique commentary on the charge in the field of planetary health to restore Earth's "life support systems." The poem looks forward to a future in which people and the Earth they once knew no longer exist. "When you reach old age, you will respect stone," the poem begins, "if you reach old age, if any stone is left."

Like many of the people whose lives are pseudonymously portrayed in this book, Pasos died young (he was thirty-two and was never published in his lifetime). I can find no clear record of this, but perhaps he linked his own mortality to that of the planet because the "destroyed kidneys" mentioned in the poem were his own.[4] Songs of the apocalypse like "Anthem of the War of Things" could be warnings to their audiences, but they also could be wishes for an ending. In a way, it would be nice to think that war, environmental destruction, and the human exploitation that drives them are coming to a self-induced conclusion.

In some ways, that is what the call for a new planetary health, sounded by the Rockefeller-*Lancet* commission in 2015, attempts to do—manifest an ending to a way of understanding the relationship between human life and nonhuman life that has proved ultimately "self-devouring."[5] As the historians James Dunk and Warwick Anderson write, "Planetary health represents our current response to what might be called the dark side of development, progress, and the 'civilizing process,' a means of contending with the consequences of our species' incessant assault on the planet's life support systems."[6] Dunk and Anderson add that while the movement for planetary health has been spearheaded overwhelmingly by "well meaning white male experts from the Global

North," it must begin to incorporate the insights of people from the Global South, women, and Indigenous people.[7] I agree—white, male, and northern as I am—and hope that this book and the story of CKDnt in Nicaragua prompt consideration about what such insights could offer.

Here are some possibilities.

AMBED and those who are affiliated with it recognized the apocalypse not only as the comeuppance for the overreach of plantation capitalism but also as the inevitable end that was always destined to come. Their search for nonsecular accountability in the face of certain death signals a belief that action in the face of irreversible destruction must start from a position of noninnocence. For medical anthropologists, persistent health disparities between farmworkers and nonfarmworkers substantiate the critical claim that economic inequalities can become embodied conditions, but attention to nonsecular accountability projects points to a slightly different story.

For people in the sugarcane zone, a diagnosis of CKDnt presented a puzzle. To make a claim to be an injured worker was at the same time to make a claim to participation in the deterioration of the broader environment. The question was how to do both: to talk about a body injured at work, and to talk about the damage to a landscape that transcends the occupational. Anthropologist Alex Blanchette, in his study of the toxic plumes of dust that swirl well beyond the industrial meat operations of the US Midwest, argues that this form of pollution is the product not just of corporate activity but of the labor of the very people who may later be affected by antibiotic-resistant microbes lodged in that putrid air. Blanchette uses this example to call attention to "how the actions of some people are made to more directly and disproportionately bear the weight of remaking and maintaining volatile worlds."[8] Building on observations like this one, I have tried to show that a movement for health in an age of irreversible environmental change requires a rejection of models for living that presume the possibility not just of ecological equilibrium but of social and environmental settlement.

In this way, AMBED's approach to confronting the epidemic reflects an observation by the French social theorist Georges Canguilhem. This book has described AMBED's efforts to achieve a kind of environmental justice, and how those efforts met awkwardly with both the efforts of an industry to limit its liability and the efforts of scientists and lawyers to explain a mysterious illness. In an essay titled "The Problem of Regulation in the Organism and Society," Canguilhem notes that while the organism has been seen as a metaphor for society, and vice versa, there is one big difference between the two. When it comes to (human) organisms, people may debate the nature of what ails them—in other

words, the cause of a disease may be uncertain—but "no one [debates] the ideal of the good," healthy body. By contrast, Canguilhem explains, "the existence of societies, of their disorders and unrests, brings forth a wholly different relation between ills and reforms, because for society, what we debate is how to know its ideal state or norm."[9] Canguilhem explains that a human body is made up of organs, which have been usefully compared to social institutions and even the organizational structure of factories, but what distinguishes the organism from society is that the organism has the capacity for self-regulation built into it. Its ability—within limits, of course—to overcome disturbance is built in, integral. Societies do not possess this self-regulating function. Justice is not a natural function of society but something that must be imposed on it from the outside.

Ecological theory once turned on a notion similar to the one that Canguilhem identifies about the organism, namely, that ecosystems were self-righting machines. But amid climate crisis, this notion of dynamic equilibrium has to be questioned.[10] We live on a planet where no stable state of equilibrium exists: one where, as the poet Pasos might have it, the flows of water through a toilet are as "natural" and contingent as the flows through a stream. We live on a planet where even the immortality of stones is dubious.[11] What AMBED seemed to recognize is that the body is surrounded by other organisms, and that the arrangements among them are always in the making. AMBED was a group of engaged participants in that making, but one lesson their story might offer to planetary health is that, as I have argued, "environmental activism" is not a large enough category to encompass what grassroots collective action for planetary health could be. AMBED's activities may have been less dependent on the sharp distinction between the organism and society than Canguilhem might have supposed, but AMBED was nevertheless less committed to a kind of environmental justice.

This leads me to a second potential takeaway from the preceding chapters. In short, the movement for planetary health must develop more sophisticated and complex ways of conceptualizing work. The making of occupational environments is at the same time the making of occupational subjectivities. In addition to establishing a clear border between the human and the natural, modernization in Latin America was also a project of establishing a clear border between work and nonwork, working environment and nonworking environment, body at work and body outside of work. Diseases of unknown causes underscore the fragility of these borders. They leave open the possibility that illness is not just a technical matter but a moral one. As Sarah Besky and Alex Blanchette put it, "Like the 'nature' shifting beneath our feet, work . . . is

a fragile category of practice tied to and changing within the worlds where it unfolds."[12]

And yet one of the shortcomings of efforts to address the novel pathologies that result from industrial modernization is that work continues to be treated as a stable, undifferentiated category, defined and delimited, by and large, by employers and financiers. The twenty-first-century plantation persists through its frugality, its constant struggle to limit its own spatial and human exposure. The same kinds of economic calculations that make it highly remunerative to use glyphosate to mature cane—calculations that also permit plantations to employ fewer and fewer people—perpetuate a process of what Jasbir Puar calls "debilitation," "a practice of rendering populations available for statistically likely injury."[13] The toxicity of plantation agriculture emanates not just from the pesticides but from the account books and financial projections of companies and states. But the Nicaraguan sugar industry is dogged by its own history—by things like the existence of cabras, the grainy records of lost garden crops stored on cheap mobile phones, and the fleeting collective recovery of environment and society precipitated by the Nicaraguan revolution. All these kept Montelimar entangled in obligations of care that exceeded its increasingly streamlined industrial design.

At Montelimar, the borders between plantation and nonplantation space are anything but clear. Personal histories of work at Montelimar exemplify an idea put forward by the environmental historian Linda Nash: it is in "those landscapes"—like plantations—"that are typically taken as symbolic of the human alienation from nature" that an entanglement between humans and nonhumans is most apparent.[14] There is no biosecure perimeter on a sugarcane plantation, and even if there were, no one could stop pesticides from drifting. And, of course, the social relations that plantation agriculture relies on are more than just those of labor to management. They include family connections, political ties, and more than capitalist relations of gift exchange and mutual aid. Nicaraguan sugarcane workers live in and around the plantation, and they can rightly claim the very occupational environment that they believe has harmed them not as an external environment but as something they built, their patrimony. The CKDnt epidemic thus poses a threat not just to the ability to do plantation work but to the ability to imagine nonplantation alternatives. The work of planetary health, as I suggested in the introduction, entails much more than conventional occupational health paradigms would assume.

Finally, I hope that this book might expand how we think about life support. *Life support* is a key term in planetary health, but it is frequently treated as a

function, as in the phrase "life support system." Both AMBED and the residents of the sugarcane zone had good reason to question the integrity of life support systems, and in each chapter, I have illustrated how they did so. Taken together, these chapters give us a picture of life support not as one closed system but as a set of interconnected, open ones. In this sense, life support encompasses the collaborative, noninnocent practices that sustain collective existence. I say that the ethic of life support is "noninnocent" for specific reasons. AMBED took action without believing that the damage done by sugarcane production could ever be fully rectified. Noninnocence is not nihilism or cynicism. Rather, it is a commitment to repair that acknowledges the impossibility of a cure.[15] For AMBED, life support included things as simple as getting from place to place in the plantation zone and processes as byzantine as seeking benefits from the Nicaraguan social security system. Life support included the work of securing biomedical treatments, but it also included the more-than-medical effort to confront a disease for which the exact cause remained unknown, and for which there was no possibility of a cure.

The barbed wire fence that protects the evidence of the ancestral presence of Chorotega people in the riverbeds of the Montelimar sugarcane zone is flimsy. Pasos, who may have encountered those same pictographs in his short life, warned his readers that they, too, would eventually disappear. This book has concerned itself with a set of projects aimed not so much at preserving evidence of a threatened way of life but at figuring out how to live life under threat. Much of that work takes the form of archaeology and archive: the contemplation of mineral and protein deposits contained in urine and blood, the layered accretion of chemical deposits in soils and bodies, the decaying stacks of unanswered grievance forms. It is tempting, then, to think that evidence for the ultimate source of the harm done to sugarcane plantation workers' bodies lies underfoot, in the ground or in the diminishing water table.

But I would be remiss if I did not close by turning our attention in a different direction. Maybe you can't hear it, and sometimes you can't even see it, but the helicopter is there, dropping the chemical ripener down on the cane. I feel compelled to end where I began, with the haunting of the helicopter, because one of the most consistent refrains among sugar plantation residents, from the beginning of the epidemic, has been to ask why aerial fumigation, which is so clearly dangerous and damaging, remains necessary to production. That helicopter is a kind of temporal black hole, where memories of past regimes of agricultural accumulation and land seizure—memories of methyl parathion and DDT—mesh with visions of a future where fewer and fewer people will need to give their bodies to the cane—at least not directly. The efficiency of

chemical ripening promises more, cheaper, and, if Monsanto's corporate parents at Bayer are to be believed, safer agricultural futures.

While the term *climate crisis* is often deployed as a means of sparking a sense of duty and responsibility among the wealthy and powerful, its material correlates in our lives are often hazy: a warmer winter, an unexpectedly timed hurricane, a summer picnic disrupted by clouds of opportunistic mosquitoes. For some, COVID-19 was a wake-up call, but a casual glance at an airport or city jail indicates that life in the Global North is quickly and alarmingly returning to "normal." It seems like a simple observation, but when people at Montelimar point to the helicopter and back at themselves, they are questioning the wisdom of such a return. Looking up and out, they can see not only into a history of agricultural violence but into a future where the crops of empire—sugarcane, cotton, oil palm, soy—will be stretched to their limits.

If we want lessons about how to make climate change feel real, how to endure destruction while still questioning its logics, we may not need to look to laboratories, think tanks, or celebrity soothsayers urging us to pay attention. To see the world as it is, one needs only walk to the edge—of a shortened life, of a chemically prepared cane field, of a dried-up tropical riverbed—and look up. The answer may be silently floating overhead.