Mapping Water in Dominica

Enslavement and Environment under Colonialism

Mark W. Hauser
Foreword by K. Sivaramakrishnan

UNIVERSITY OF WASHINGTON PRESS

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Mapping Water in Dominica was made possible in part by grants from the Andrew W. Mellon Foundation and Northwestern University Libraries.

Design by Copperline Book Services Inc.
Typeset in Garamond Premier Pro by PageMajik
25 24 23 22 21 5 4 3 2 1
Printed and bound in the United States of America

University of Washington Press
uwapress.uw.edu

Color versions of the maps are available at DOI 10.6069/9780295748733.s01.

Library of Congress Cataloging-in-Publication Data on file
ISBN 978-0-295-74871-9 (hardcover)
ISBN 978-0-295-74872-6 (paperback)
ISBN 978-0-295-74873-3 (ebook)

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M|P
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When you cite the book, please include the following URL for its Digital Object Identifier (DOI): https://doi.org/10.6069/9780295748733

To Jean and Bill Hauser for the questions they taught me to ask

CONTENTS

FOREWORD

Modern colonial empires were built in many places in the world by the simultaneous capture of human labor (in the form of slaves, indentured servants, indebted workers, and sharecroppers) and natural endowments (in the form of soil-water relations and varied nonhuman life) for the production of agricultural commodities exported to distant lands in service of global markets. In this book, we encounter one set of such capture processes in one Caribbean location, an island, that was the site of historical and archaeological research that informs the work.

Centered on the sugar economy that emerged in eighteenth-century Dominica to serve a world demand for sweetness, and on the power relations it forged,[1] Mark Hauser's wonderful study covers the environmental conditions in which sugar plantations, slave systems, and struggles over water and soil formed in the modern Caribbean. As an archaeologist writing colonial history, he brings talents and perspectives to this work that are often not found, even in some of the more careful historical studies. At the same time, he offers welcome analysis of the gradual, fitful, and often unpredictable ways in which local economies encounter global pressures and flows, and traces more precisely the transformations that are swept into current, rather un-nuanced, discussions of the Anthropocene and its variants, such as the Plantationocene.[2]

As Hauser notes, precolonial empires were built, particularly in the Americas, by directing local agriculture, and its command over water resources, to the production of crops and goods that served the purposes of large-scale polity building. In that sense, the arrival of Europeans in the Caribbean and the harnessing of land, water, and labor to the production of sugar and other crops for the world commodities market was another wave of such dispossession, redirection, and capture. It included the loss of many freedoms among the local communities and the importation of others in servitude, this time from Africa. To document this process—the ecological relations with which the production and decline of plantations are enmeshed—Hauser focuses on three issues: scarcity, mobility, and ideas of belonging. After discussing the material record of slavery and providing a description of the water channels

and systems, he shows how security, flows, and belonging are both experienced and expressed.

The best work on colonialism and its forms of capitalist development in European empires across Asia, Africa, and the Americas has increasingly paid close attention to the actual processes imperfectly realizing the ambitions and imagined plans of colonial powers and elites. Ruling groups are compelled to deal with various unexpected events and frustrations (including rebellions, wars, market volatility, calamities, and epidemics). Meanwhile, subordinated working people and marginal farmers end up innovating livelihood strategies that occasionally loosen the iron grip of slavery as they look for ways out of the stark inequality and poverty that shapes their lives. Hauser provides a perceptive study in this vein, discovering actual social and ecological conditions in which modern slave economies were built around agrarian commodities. Drawing on a decade of archaeological and historical research, he provides a sustained examination of conflicts over water that forge the actual exploitative regimes designed and executed over a century.

To address the uncertainties at the heart of the immense enterprise of domination and control that slavery embodied, and the ways in which conditions of acute inequality and un-freedom still engendered ideas of belonging and emplacement, Hauser builds a theoretical framework deeply influenced by the idea of slavery as a predicament, in which he is inspired by historian Vincent Brown.[3] His approach is made creatively possible by examining the material and social life of objects in ordinary Dominican plantation lives, even as he reckons the place afforded these things in wider circuits of meaning and profit making. At the same time, Hauser is attuned to the spatial characteristics of island geographies in oceanic networks, as well as the patchwork of enclaves in which people and production get sequestered through both intensification and neglect over historical periods when these islands are more or less imbricated in world-scale development.[4] His painstaking, long-term research is placed felicitously and generatively in conversation with some of the most influential recent writing in environmental anthropology, historical archaeology, and the study of slavery in South America and the Caribbean.

The outcome is a fine study in social archaeology that makes archaeological work, in its concerns and methods, respond to contemporary questions of environmental stress and human distress, even as perspectives on landscape modification for economic development and nature conservation are brought to bear on the material record of human action on the environment in the long-past times more familiar to archaeological discovery. A well-attuned historical sensibility

is alive to speeding up and intensifying human impact on natural environments, but the story told here resists a decisive epochal account of these processes. In that way, the "great acceleration" that historians J. R. McNeill and Peter Engelke describe[5] becomes an analytical understanding of the modern exploitation of places like Dominica that is not teleological in a simple fashion. People on the island repeatedly set to work solving problems they did not create; these engagements meant that some repair accompanied a lot of loss and disruption. Sadly, the struggle to ward off the baneful effects of conquest, colonialism, plantations, and being swept into world commodity markets produced a series of setbacks for those who had the most to lose.

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ACKNOWLEDGMENTS

Funding for the research presented in this book was generously provided by the National Science Foundation, Archaeology Program (BCS 1419672, BCS 0948578), the Wenner-Gren Foundation for Anthropological Research (Gr 8413), the Direction Régionale des Affaires Culturelles (DRAC) Guadeloupe, and Northwestern University's Faculty Research Grant. I would also like to thank the Faculty of Archaeology at Leiden University for providing me a NEXUS 1492 fellowship, during which I had time to read and write about Caribbean ethnohistory and waterscapes in archaeology.

I am thankful to the many individuals and institutions who made introductions, granted me access to their land, and generously gave of their time in facilitating this research, including the Ministry of Education and Island Heritage Foundation. The Lands and Survey Division of the Ministry of Housing provided geospatial data critical to this project. Lennox Honychurch provided intellectual, material, and social support throughout this project, opening his doors and his long list of contacts to enable my work. Landowners including Isidore Bellot, George Blue, Tony Burnet, Andre Charles, Michael Didier, Celma Dupigny, Christina Garner, John Henderson, Penny Honychurch, Daniel Langois, Jonathan Lehrer, and Joseph Xavier gave me access to their land. Wendy and Simon Walsh, in addition to allowing access to their land, were instrumental in organizing community events. I am also grateful to many other community members who supported this work by publishing magazine articles, hosting community events, and organizing school visits. Special thanks go to Paul Crask for years of conversation and his valorization of archaeological research in local publications.

Over the past ten years I have worked with many wonderful archaeologists from Dominica and elsewhere. Greg Alexander, Dean Bellot, Dora Bellot, Dorival Bellot, Carim Birmingham, Quincy "Q" Bruce, Walther Didie, Mitchell LaVille, Kirsha Reynolds, Michael "Togo" Sanford, Kiefa Stokes, Bradley Tavernier, Edward Thomas, and Dan Wade generously gave their time, and in so doing gave me a better sense of this world. I am also grateful to the many graduate and undergraduate student volunteers, some of whom have become

professors with their own projects. They include Pedro Alvarado, Lyndsey Bates, Kat Caitlin, Lacey Carpenter, Zev Cossin, Carmen Laguer Diaz, Demetrios Elias, Eric Johnston, Kalina Kassadjikova, Brooke Kenline, Addison Kimmel, Kristin Landau, Lauren Nadeau, Kushal Rao, Sophia Theodossious, and Ivan Yeh. Special thanks to those PhD students whom I have advised and have generously contributed their talents for this project in the field or in the lab, including Alan Armstrong, Khadene Harris, Bradley Phillippi, Jenn Porter, and Emily Schwalbe. Each of them has provided insight and nuance to this project. I would like to pay special thanks to Jenn, who read and edited an early draft of this manuscript, and Khadene, who was an on-the-ground collaborator in Dominica.

I am very grateful to those who have advised me as this project took shape. Douglas Armstrong, my advisor, continues to be an important interlocutor, supporter, and friend. Jerome Handler generously gave of his time and has pushed me from the very beginning to frame the project beyond its archaeological implications. This research began as part of a collaboration initiated by Kenneth G. Kelly, who continues to be an interlocutor and friend. Stephen Lenik and Zachary Beier did a lot of groundwork for historical archaeology during his fieldwork and generously provided his contacts to me. Jeff Ferguson and Michael Glasscock at the University of Missouri Research Reactor made the compositional analysis in the research possible. John Steinberg and Doug Bolendar at the Fiske Center at UMass Boston provided invaluable work on shallow geophysics of two sites showcased in this study. Jillian Galle and Frasier Neiman at the Digital Archaeological Archive of Comparative Slavery (DAACS) have been enormous supports in artifact cataloguing and analysis, also providing critical feedback on field methods and data structure. I am grateful to Tessa Murphy, Isaac Shearn, Sarah Oas, and Lindsay Bloch, who helped me generate the kind of evidence required to complete this research. Special thanks are necessary to Diane Wallman, who has been a close collaborator throughout this research.

My colleagues at Northwestern have been amazing supporters and advocates of this project from the beginning. My compatriots—Cynthia Robin, Matthew Johnson, Amanda Logan, Melisa Rosenzweig, and Jim Brown—have always been generous with their insights, expertise, and wisdom, much of which is dotted throughout this book. I would also like to thank those colleagues who have read drafts and provided critical feedback on portions of this manuscript. Shalini Shankar has been especially helpful in reminding me to highlight how archaeology is contributing something new to anthropological conversations about race and inequality. William Leonard was generous with information about energetics and metabolism. Tim Earle has read numerous drafts of proposals and

articles, pushing me to focus on the necessary. Micaela DiLeonardo has helped me attend to the foundations of political economy implicit in slave society. Jessica Winegar and Mary Weismantel were enormously supportive throughout this process.

Beyond my department, numerous people have left major imprints on this project. Thinking about water, environment, and slavery began with and continued through numerous conversations with Sherwin Bryant. Placing those ideas in the broader context of Caribbean and Latin American thought was something Jorge Coronado was always willing to contribute to. Sam Spiers provided material and intellectual support for this project, and friendship at a critical point. I am also grateful to many colleagues who have acted as sounding boards, including Gayatri Reddy, Chernoh Sessay, and John Karam. Corinne Hofman, William Keegan, Menno Hoogland, and Arie Boomert have generously guided me through the complicated and rich literature on pre-Columbian archaeology and Kalinago ethnohistory. Still others provided critical feedback on a published article that formed the nucleus of this book, including Charlie Cobb, Ian Lilley, Anna Agbe-Davies, Krysta Ryzewski, and Alice Samson. Special thanks go to those scholars who provide a model in contextually rich, nuanced accounts of the archaeological record, including Barb Voss and Laurie Wilkie. I would also like to remember Mary Beaudry, a mentor and friend who stood by me when I needed it most. Mary's approach was to begin with the thing and use that object to unfold a world. Her work was always with purpose. In her writing and our conversations, she deeply influenced the shape of this research and the approach that I took in crafting this book.

I am deeply indebted to the two anonymous readers who read an earlier draft of this book and provided excellent commentary. I am very grateful to Lorri Hagman and others from the University of Washington Press who made this a better book. I am also indebted to those who made the online distribution of this possible, including the Sustainable History Monograph Pilot (SHMP) and Northwestern University Libraries.

Finally, my family has been excited about this book from its early stages. My parents' curiosity about the world, about my work, and about the past continue to be an inspiration for me. My brothers continue to be a source of pride and critical feedback. My sister-in-law, Gayatri Menon, has the most amazing way of simplifying complex ideas so that I can figure out how to see them in the soil. Most important is Kalyani Menon—my first and last reader, my toughest critic, and my most ardent supporter. She saw this book for what it was before I did.

TIMELINE

200 BCE	Earliest evidence of human occupation
cal. CE 150–250	Major settlement in Soufriere
cal. CE 340–420	Volcanic eruption in Soufriere
CE 1200	Kalinago begin to settle Dominica
cal. CE 1410–1590	Second eruption in Soufriere
1492	Columbus arrives off coast of Wai'tu Kubuli (Dominica)
1590s	Sir Francis Drake visits Dominica
1590s–1680s	Kalinago export arrowroot, cotton, and tobacco
1627	Dominica granted by patent to Earl of Carlisle
1674	Massacre of Kalinago village by English
1692	Jeannot Rolle, "a free person of color," establishes first non-indigenous settlement at Grand Bay
1728	French Commandant appointed
ca. 1730	Coffee introduced
1761	British General Lord Rollo invades and captures Dominica for Britain
1763	Britain annexes Dominica as part of the Treaty of Paris
ca. 1770	Sugar intensified
1778–1783	French occupation
1807	Legal abolition of British trade in captive Africans
1831	Brown Privilege Bill
1834	Emancipation Act
1838	End of apprenticeship
ca. 1840	Coffee blight
ca. 1850	Lime introduced
1865	Made a Crown Colony
1884	"Entire or partial abandonment of sugar"
1903	Kalinago Territory established
1978	Dominica becomes independent nation

Introduction

Welcome to Nature's Island

In 1817, a legal dispute arose over a comparatively small estate in a much-overlooked corner of an island at the edge of the British Empire. The party claiming ownership sued the property's residents to recover rent and proceeds from the estate, which the complainants alleged was wickedly neglected. The probate that accompanied the suit included a detailed description of the property, documenting enslaved laborers, buildings, furniture, animals, equipment, and the disposition of the land. The estate in question was in the southwestern quarter of the island of Dominica (maps I.1 and I.2). For those acquainted with Caribbean estates, this is a familiar story. In their description, the document's authors stated that the buildings were "slight and can only answer a temporary purpose." Of the slaves, the authors agreed that all 120 were generally healthy and able-bodied in the minds of the attorneys. What struck me as I read the document was the state of the land. Aside from a few smallholders who were squatting on the property, most of the coffee fields had been left to nature. One parcel was "totally abandoned and [became] a common for cattle." Perhaps the most interesting comment was the one made about the cane fields: "One remark that has forcibly struck us is that the cutting down of the Galba fences where the canes are now planted was highly injurious, in a situation so much exposed to the wind and must prove extremely injurious to the canes." These fields were in the process of being abandoned. The probate ends with these damning words, "We deem it necessary to remark—under all the circumstances of this property, that on demanding of the present manager . . . what salary he was allowed . . . he stated it be 100 joes [a large sum in 1817] per annum."

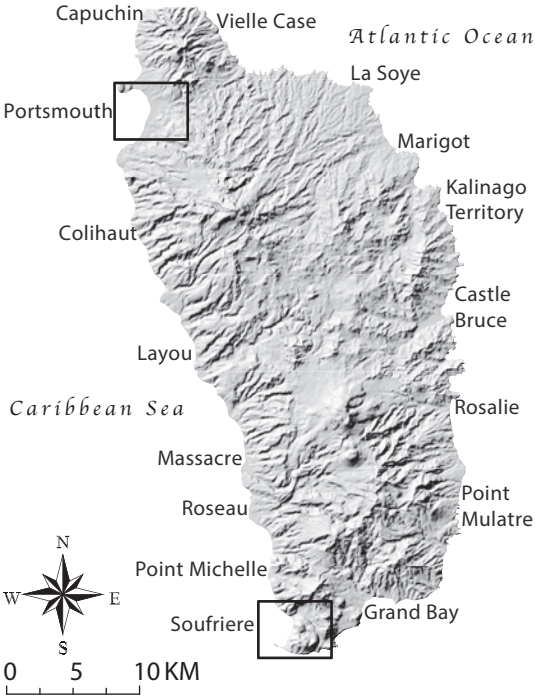
The account describes a Dickensian situation: a ramshackle estate with a few settlers and over one hundred slaves of all ages and origins, who use former coffee lands to graze their cattle and livestock, run by an incompetent manager living in a rotting estate house. The account is interesting in that it describes abandonment of prime land. The probate's authors' disdain for the defendants is evident in their account of the owners' misuse of the estate—converting prime

coffee lands into cane fields and hiring a manager whose ignorance was richly rewarded. The account is important because it describes a property and the people who lived on it in the wake of Dominica's sugar revolution, a short-lived agrarian transition that coincided with Britain's annexation of the island in 1763. By all accounts, the revolution failed. The lives and livelihoods of the people are not clearly spelled out in the document. From the ways that parcels were named we can infer that free people squatted on the land. It also tells us that enslaved laborers remained attached to the land even when their labor was no longer needed. Finally, it suggests that these people, living on the margins of empire, had to resolve problems that were not of their own making. An absence in the account above is water and its role in the everyday life of those left to live on the estate. Water animated the landscape; it brought life to the soil. Its absence speaks to how much the people writing the account took it for granted as part of their everyday life. Its absence is also noteworthy for those who had to rely on available sources to drink, cook, wash, and water their animals.

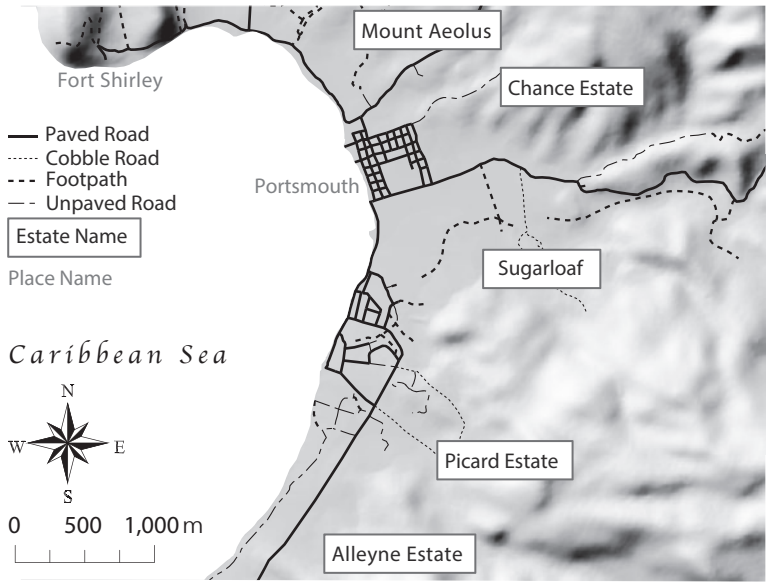
This book uses the lens of water to examine an environment modified by slavery on an island largely overlooked by historians (maps 1.3 and 1.4). The predicaments faced by enslaved people described above were not unique.[1] The sugar revolution, the "event" of this study, put into direct competition ordinary people's daily needs to access soil and water with the manufacturing demands of goods destined for distant markets. It was not the first political-economic transformation in the Americas that centered around local and elite tensions over soil and water. Hydrosocial manipulation and agricultural intensification, as well as their social control, are very much part of the story of states in the Andes, the Maya region, and central Mexico.[2] Nor was sugar the last commodity to transform the Americas, as recently noted in Mexico City, Bolivia, and the United States.[3] While the unequal distribution of water and its scarcity are very much part of the contemporary public transcript, we can understand this present narrative through its deep roots in the past. Archaeology as a field focuses on absent presences, mapping them in space and mapping how they change over time.

The sugar revolution put into motion something the Americas had yet to see. Monoculture supplanted agricultural practices in which farmers had cultivated different species as climate and soil conditions demanded. Sugar was the first botanical commodity exploited in the Caribbean that came from another part of the world. Whereas cotton, tobacco, and cacao were indigenous crops in the Americas, sugar originated in Southeast Asia and migrated through a long passage, in which its value and the social relationships attached to it evolved.[4] The revolution introduced into agriculture a high level of organization,

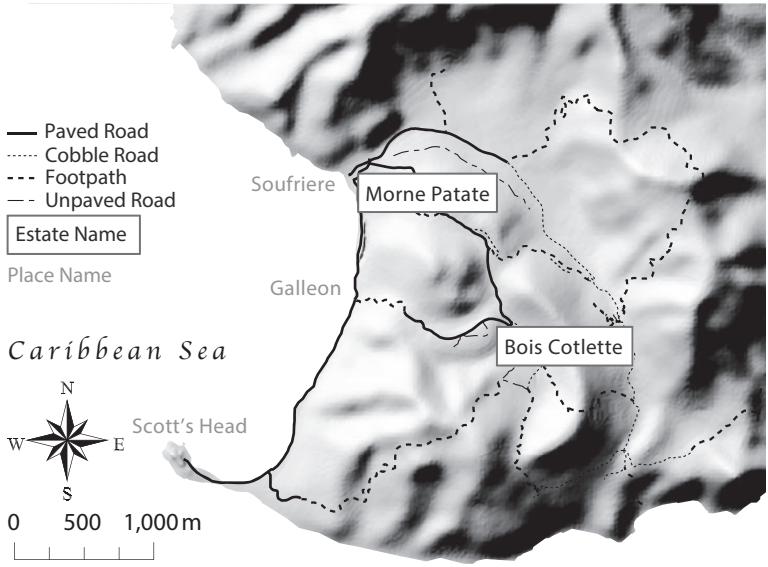
MAP 1.1. Location of Dominica in the Caribbean. Illustration by author.



MAP 1.2. Location of Dominica's Enclaves described by M. R. Trouillot, 1988. Illustration by author.



MAP 1.3. Dominica's Portsmouth enclave and its locations described in this study. Illustration by author.



MAP 1.4. Dominica's Soufriere enclave and its locations described in this study. Illustration by author.

interchangeability of labor units, extreme time-consciousness, and, most important, separation of both production from consumption and workers from their tools. At the same time, enslaved Caribbean people who had become experts on the land aspired to many forms of freedom: freedom from the legal status that defined them as property, freedom from the physical violence that accompanied slavery's legal and labor regimes, and freedom from the slow violence that emerged through very simple but long-lasting competition between production of commodities and reproduction of lives and livelihoods.[5]

Enslavement is forced labor extracted under the threat of violence, where people are compelled to solve problems not of their own making. To be enslaved is to face those problems as everyday predicaments surrounding security, mobility, and belonging. Because labor was extracted under constant threats of violence, slow and fast, securing life and livelihoods was a principal concern for those living in slave society. To secure life and livelihood, people were forced to move about the land in ways contrary to their captivity. Since the possession of captives was critical to cultural politics in slave society, those deemed property struggled to forge networks of community through different idioms of belonging. In the eighteenth-century Caribbean—a context known for its industrialized relations of labor, racialized forms of difference making, and enslavement defined through chattel property—people struggled to secure their livelihoods in contexts where mobility was differently policed to pursue the politics of belonging.

These predicaments were not natural states; they were the consequence of plans authored in distant places of power and materialized locally. While the ancestors of the indigenous Kalinago took captives from neighboring islands and more distant shores, it was only in the 1700s that people in Dominica started facing the predicaments described above. It was then that colonists and slaves from neighboring Martinique and Guadeloupe began to establish agricultural concerns on the island. Amid entrenched slavery and its violence, anxieties over security, mobility, and belonging intensified in 1763, when English and French planters pursued economic progress promised in colonizing discourses and undersigned by the cultivation of sugar. Archaeological and textual evidence provides clues about how enslaved people of African descent resolved everyday concerns over lives and livelihoods through their capacity to move about the landscape in order to pursue the politics of belonging. Forced to realize the plans of English-speaking elites, enslaved workers shaped the landscape by modifying traditional ways of doing things. Enslaved Dominicans also engaged in the global economy in novel ways. Unexpected economies emerged that formed a social and political infrastructure, bringing maroons, slaves, and Kalinago in daily

face-to-face interaction. People formed communities that frustrated imperial categories of difference based on skin color and dispossession, and households formed associations around both kin and non-kin.

Colonizing discourses described Dominica as an island of latent potential that could be realized only through the capacity of slavery and markets. Subscribers to these discourses invested their fortunes and the labor of others, only to find that cultivation of sugar was a failed project. In 1965, the Dominica Tourist Board branded the colony as "the Nature Island" to promote travel of "holidaymakers" from Europe. "Nature's Island" also alludes to a historical process, as Dominica was the last quarry in Europe's eighteenth-century land grab for growing sugar and implanting subjects in the Caribbean. The "nature" of the island changed in relationship to slavery and markets, and capital ambitions on the island failed when nature would not yield. "Nature's Island" also signals the boundary work of eighteenth-century colonial accounts, in which slippages between "nature" and "culture" rendered Indigenous people invisible and enslaved Africans governable. All who stood in relation to slavery felt the consequences of these imperial ambitions, but those who were legally categorized as property bore the most significant cost of their reproduction and resolution.

These accounts recognized that some people would pay more dearly for cultivating new Caribbean colonies than others. Some provided financial outlays to accumulate land, build factories, and commission infrastructure. In the historical record, little acknowledgment is given to costs for those whose labor was pressed into service to improve the land, work the factories, and ply the roads. Landowners needed workers for the commercial crops that increasingly blanketed the Eastern Caribbean: cotton, tobacco, coffee, indigo, and sugar cane. People of African descent were pressed into service to work these plants into commodities. For them, the landscape in which they labored was one of limited options. The slave trade inserted them into provinces or countries in which mobility required language skills and connections they were not expected to possess. Nor were they intended to move off the land where they labored to find a home somewhere else, because the laws had prohibited such movement as a capital offense. Some did run away and join communities of maroons living in the island's highlands, but such moves did not guarantee that their lives became free of servitude. Importantly, their labor bore much of the costs unaccounted for in colonizing discourses. As land was made available for the cultivation of commodities such as sugar, coffee, and cotton, people living in slave settlements were often challenged to locate and improve water and soil to meet basic needs.

This book puts into conversation the work of scholars who question the premises of capitalism and its workings in the environment, historians concerned with the role of slavery and governance in colonial settings, and archaeologists engaged with spatial relationships inscribed into plantation economies.[6] While contributing to a long-term conversation in which Caribbean scholars have centered these ecological relations in the making of social lives, it also considers a new way for archaeologists to conceptualize matter in conditions of intense social inequality and shows how archaeological data can contribute to broader conversations about nature, culture, and place.[7] It thus examines "what manages to live" despite slavery.[8]

With few exceptions, archaeologists write for one another, limiting their contributions to broader scholarly discourse. This is a shame. The material record they engage can contribute insights that move past apolitical commentary of the environment and situate political ecology in the violent histories of slavery.[9] More than three decades ago, Jamaican cultural theorist Sylvia Wynter described Caribbean history as a competition between two priorities.[10] One priority, that of the cane field, was framed in the idiom of property and improvement. Colonization of Dominica was a process of alienation where humans were transformed into labor "and nature to land." Here the slave was dually alienated.[11] The process of colonization was a physical alienation by which people racialized as black were held captive in the Americas. It was also a political alienation of the relationship between those people and the earth, which reshaped the social fields in which they operated. A second priority, that of the provision ground, was framed by idioms of reunion and cultivation. In provision ground spaces, Africans reunited with the earth through growing food. In so doing, they cultivated relationships on "the plot of folk culture," which became another basis of social order.[12]

I hope to work against the insularity of archaeology by putting into conversation Caribbean scholarship in my examination of the changing nature of Dominica in relation to an often-overlooked matter—water. The book is divided into two sections, Properties and Cultivation, to mirror Wynter's framing. Farms as an assemblage of plants, people, technologies, and animals became increasingly valued for their global relations, rather than more intimate ones. Sugar cane, chief among the crops valued for their ability to accumulate wealth, created particular predicaments for those forced to work the land. Gardens cultivated by the enslaved became a local articulation of alternative geographies. Here enslaved laborers sought "biotic," political, and social refuge in which noncommercial, threatened species could survive.[13] I hope to challenge the myth that on an island barely larger than Chicago, with 365 rivers, nature was abundant, and its

elements, such as earth, air, water, and fuel, were virtually free. Bringing these relationships into sharp focus, this book advances one account of how engagements with these elements emerged for residents of Dominica as a set of predicaments, reconstituting how people who did not set these processes in motion were able to socially and materially reproduce themselves.

Waterscapes

CHAPTER 1

Mapping Slavery's Material Record

> In Evening got opposite Roseau when several Boats came on board of us having the principal Gentlemen in the Island. . . In landing we went on board the *Africa*, a Negro [slave] ship. We saw Boys & Girls dance & sing keeping time with their open hands striking each other –while a male got a sword in his hand & he made a number of curious movements with it looking frequently to his own limbs & wriggling with his back side. One female began [a] song [and] all joined the chorus – much in a way in highlands in their own native dialect. The children have necklaces of beads on wrists & necks.
>
> —Journal of Jonathan Troup, May 11, 1789

JONATHAN TROUP ARRIVED OFF the coast of Roseau, onboard *The Duchess of Portland*. Troup was recruited to practice medicine among sixteen "Mullato, French and English" physicians in Dominica after he received his medical training at Marischal College in Aberdeen in 1788.[1] New to the Caribbean, and in search of his fortune, Troup spent the next year documenting his practice, taking histories of various patients, describing maladies, and detailing ingredients of the remedies he prescribed. His prose is inconsistent, containing incomplete sentences, half-written words, unfinished thoughts, and descriptive tangents. Topics include people, weather, diseases, terrain, and livestock, and how they played an active role on the island. Quickly drawn sketches of town scenes and the material culture that Dominica's residents used accompany some of these descriptions (figure 1.1). Historians have discussed how his manuscript is inflected with tones of sexual violence that pervaded colonial society, including accounts of Troup's own interactions.[2] Also important were the social lives of people on the island. The list of actors who play pivotal roles in his descriptions of everyday life includes estate managers, plantation proprietors, doctors, people classified as "free colored," Africans classified as slaves, and both free and enslaved skilled tradesmen. This last group is described most prominently in

FIGURE 1.1. Watercolor paintings found in Jonathan Troup's journal, highlighting some of the lives and livelihoods he encountered during his one-year stay in Dominica (UA, MS 2070, Journal of Jonathan Troup). Counterclockwise, from top left: "Water and Negroe Woman" (126), "Barber" (127), "Field Slaves and Town Slaves" (124), "Iron Bilboes and Wood Stockade" (123), "Hair Rings" (122v), "Ibbo Dancing" (121), "Negroes pulling a cart of goods" (133). Courtesy of University of Aberdeen.

Troup's account, which documents his observation of their social lives, language celebrations, and trials as he treated their maladies.

What Troup documented as he wrote about his walk across the slave ship *Africa* was one node in a global commodity chain that was not legible from his vantage point.[3] While Troup knew that the children were captured in Africa and brought to the Americas, he probably did not know that nearly 80,000 people had been brought to Dominica by May 1789, nor that nearly 30,000 would follow.[4] As a student at Marischal College, he might have been introduced to Adam Smith's critique of slavery as inefficient.[5] While some of the 103,000 people who arrived in Dominica were transshipped to other islands, colonies, or nations, he would not know which of those he had described would be purchased and put to work in this new West Indian colony. The number of written accounts documenting immediate experiences of the enslaved was limited. There were notable exceptions in the eighteenth century, including Phillis Wheatley, Olaudah Equiano, and Ignatius Sancho. Given their centrality to debates surrounding slavery and abolition, and Troup's uncritical musings, he most likely did not read them.[6]

In documenting slavery's material record, Troup also became part of it. There was a world of events yet to take place. The French revolution would continue for ten more years, during which the slaves in Guadeloupe would be freed briefly and the Béké of Martinique would choose to align themselves with Britain to avoid emancipating their slaves. The Haitian Revolution was still two years away. Its beginnings and aftermath would see a flood of French planters immigrating to Dominica to escape violence and establish coffee estates. Also in 1791, the "New Year's Day Revolt" would ensue in the southeastern parish of Dominica, shaking the confidence of the planting class. While the numbers of Africans imported to the island were decreasing by 1789, the slave trade would continue for another eighteen years. The institution of legalized slavery would continue for another forty-five years. This would be followed by eight years of apprenticeship. Troup could not have seen these events coming.

This chapter maps slavery's material record as an archaeological problem and an assemblage of predicaments. It introduces the cast of archaeological characters, who, when mapped in relationship to one another, reveal details of enslaved laborers' lives, their priorities and predicaments, during agrarian transition. I build on historical archaeology, while using a more social approach to probe more deeply into the lives of differentially positioned subjects to show how their ecological priorities shaped how slavery worked in practice.[7] For hundreds of landowners, the promise of colonization—that it would provide a pathway from merchant to landed gentry, from provincial port town to metropolitan

elite, from shop to manor house—had proved to be a mirage. For the thousands of enslaved laborers, the violence (slow or otherwise) of colonizing discourses would provide a harsh reality in which any such social, economic, or geographic mobility came with its risks and costs.

Enslavement

During Troup's life, livelihoods in much of the world were shaped by slavery's material record. Take, for example, the different people and industries required to produce a hogshead of sugar or a barrel of molasses, a task at which many of the Africans described in the above passage would be put to work. One quickly begins to realize that many people contributed to the production. Some might seem relatively obvious—there were enslaved laborers who cultivated the fields, boiled the sugar, built the houses, made the barrels, and cared for the sick and young. Others might not be so obvious. There were the miners in Sweden, Finland, Russia, Cornwall, or Wales who dug for the iron and coal used to make the cane bills and hoes in Atlantic port cities of Britain and France.[8] There were the sailors who gathered salt used to preserve the cod and herring fished out of the North Atlantic.[9] There were the enslaved laborers on farms in North America growing barley, wheat, and maize used as rations and feed in the colony.[10] Wage laborers in iron foundries in Liverpool and London would cast the rollers and kettles necessary for crushing sugar cane and boiling its juice into a concentrated slurry.[11] Massive potteries in the French and English Caribbean had to be built to manufacture the necessary vessels that refined the boiled slurry into sugar and molasses.[12]

Despite this complex and densely networked world, few have stopped to consider what is distinctive about slavery's material record. Fewer still have considered this record as part of a larger ecology of things. As a social problem to be studied, slavery has the appearance of a transhistorical institution and invites comparison across times and spaces, but its workings are best understood at a particular conjuncture.[13] As a historical problem, the term "slavery" introduces anachronisms and obscuring processes for which the term has become a shorthand, including captivity, human trafficking, domination, violence, displacement, and impoverishment.[14] As an archaeological problem, slavery's "relative social/economic status or rank can be defined archaeologically . . . legal or imposed status cannot."[15]

The formation of slavery's material record has been a central concern in the archaeology of "the modern world," where debates have centered on whether

traditional ways of doing things and the meanings attached to them were replaced by customs and practices introduced through slavery.[16] These are questions with political consequence. Many scholars have argued that the totalizing nature of the institution imposed new material practices and spatial regimes that pervaded everyday life through violence, captivity, and alienation.[17] Some scholars focus on the violence and alienation associated with captivity, charting what is lost as material repertoires change among enslaved over time.[18] Other scholars document what is retained despite violence and alienation in captivity.[19] Still others argue that enslaved people of African descent, especially plantation workers, whose control over their everyday life gave them some autonomy, were a radical force for change.[20] These are important debates, but the figures who populate them can be static, and their proponents too hopeful about what the archaeological record might reveal.

As one piece of archaeological evidence that might provide novel insight into the problem of slavery, human remains can reveal the origins of a person, their conditions of labor, and, through associated goods, what the community thought of them.[21] Human remains related to Atlantic slavery have shown the effects of the slow violence of malnutrition, repeated trauma, captivity, and intense and repetitive labor.[22] Unfortunately, mortuary practices remain the most elusive archaeological phenomenon in the Caribbean.[23] In comparison to the estimated 4.1 million bodies inserted into the island chain, the number of human burials uncovered is relatively small. Archaeologists, not for want of looking, have been able to document only ca. 130 skeletons of deceased slaves between the islands of Barbados, Jamaica, Guadeloupe, Montserrat, and St. Martin.[24] In Dominica, no human remains have been found in archaeological contexts associated with slave life, yet questions of belonging attached to death and its memorialization are no less important.

Vincent Brown, in analyzing the social lives of enslaved Africans in Jamaica, has called for a shift in perspective "from seeing slavery as a condition, to viewing enslavement as a predicament."[25] To use the laws produced by a plantocracy as ethnographic detail to understand slavery conflates slaveholder ideology with the world of meaning produced in enslaved and non-enslaved households alike.[26] Drawing on Brown's insights, I suggest that three predicaments framed everyday life in Dominica: security, mobility, and belonging. Contemporary laws threatened the security of marginalized peoples living with violence—immediate or slow. Slaves were discouraged from traveling from one parish to the next because planters did not trust them; yet mobility was necessary for survival and to forge belonging. For enslaved people and other marginalized individuals, to travel to

another valley was to risk brutal corporeal punishment at best, and cruel capital punishment at worst.

One of the significant departures in this book is to change the locations in which the predicaments of slavery are studied. A large body of scholarship in history, sociology, and anthropology suggests that provision grounds, located in the interstices of plantations, were important places in the social lives of the enslaved.[27] This literature has shown that slaves developed expertise in agronomy, financial planning, and capital management in these provision grounds.[28] Decisions regarding the feasibility and conditions required to grow certain plants, which crops might produce the most surplus to sell in the local market, and what to do with the cash obtained from such sales, required a mastery of local soils and crops, strategies of management, and anticipation of demand.[29] A spatial counterpoint to the plantation, provision grounds were sites where "enslaved Africans and their descendants never ceased to pursue the politics of belonging . . . and regeneration."[30] In them, the enslaved made "partisan use of the dead," burying captive Africans, regardless of regional background, to "reconstitute their social worlds wherever they landed."[31]

Despite the partial and limited nature of the archaeological record, as a component of slavery's material record it is amenable to mapping. Mapping involves locating in space and time objects that reveal the permeabilities between humans and nonhumans, ecologies and political entities.[32] The archaeological and archival research conducted for this book through repeated field seasons between 2007 and 2017 reveals different ambitions in the archival record and the built landscape, along with the responses of ordinary people in the material record of everyday life. While selective accounting on the part of literate and powerful populations did not record the specific challenges enslaved people faced on a daily basis, the archaeological record does represent an accumulation of solutions developed by enslaved people over many years.

Mapping compels the archaeologist to scrutinize the substantive nature of people's material worlds and the schematic frameworks that must be applied to make sense of those worlds.[33] It does so by asking four interrelated questions. First, there is a question of ubiquity. What elements of the past are visible in the archaeological record and why? Second is a question of relation. What systems of the world are carried within each object documented in archaeological survey, testing, and excavation? Third is a question of volume. Because those systems were not prefigured, we have to ask how objects found helped fashion those worlds. Finally, a question of bias. One of archaeology's principal concerns is the present absence—that is, seeing things that are there that shouldn't be there,

or identifying places where we should locate things and do not. We should ask, then, which systems of the world are more visible than others and why?

The disjuncture between the written and material worlds was integral to the creation of new problems—resource scarcity, provisioning, and soil loss, to name a few. Analysis of written and material sources of information discloses unexpected actions, decisions, and investments on the part of planters. For example, when I first visited Bois Cotlette, a "typical" coffee estate, in 2008, I was surprised to find a windmill and a sugar factory built during the estate's most productive years of coffee cultivation (1770s–1820s). I was even more astonished to learn that this was not the first sugar factory built on the estate. The estate, according to nineteenth-century almanacs, had never produced sugar in significant quantities, yet here was evidence of not only experimentation but doubling down on an investment with a crop that experience had shown to be ill suited for the land. At the time, I couldn't decipher how the lives and livelihoods of enslaved laborers were transformed by enterprises that never amounted to much.

Predicament

To analyze is to break down a problem, such as slavery, into predicaments. Predicaments are everyday concerns that marginalized people have to resolve.[34] These difficulties, and how people resolve them, shape peoples' lives in material and discernible ways. The analytic of the predicament allows exploration of how each detail sets the conditions of possibility for other details, in changing configurations. Archaeological details such as material, function, location, and concentration of things enable an examination of the "nature" of a person's surroundings. Ecological details, such as the plants present, the quality of the soil, the amount of rain, the presence of vermin, and the steepness of slopes, also shaped the lives and livelihoods of marginalized people who lived in Dominica. Customary practices and legal regulations could dictate where one could travel, on which land one could and must work, what one could have, and what one could own. While difficult to infer from the documentary and archaeological record, details such as social restrictions, values attached to particular places or invisible lines, and dispositions to how one should make a living also made a difference in individual lives and experiences.

To adopt predicament as an explanatory framework is to counterbalance the language of calculation or people acting on environments. It articulates Marxist critic Raymond Williams's discussion of the lived experience of society as it takes shape in the present moment, with "all the known complexities, the experienced tensions, shifts, and uncertainties, the intricate forms of unevenness

and confusion."[35] Great weight is given to a historically small group of people, like Jonathan Troup, who documented their experiences in parliamentary testimonies, unpublished physicians' notes, published political tracts, and natural history texts. Some of the writers speak in detail about their visions and plans for a colonial Dominica. Others offer on-the-ground commentary. The value of the small group of participants who left behind a documentary record also rests in their observations about everyday life. In transcribing these documents, I sometimes corrected spelling and punctuation, or finished thoughts (in brackets) with what I imagine the topic or subject of a sentence might be. They document slave lives and livelihoods, the antagonisms and solidarities of colonial subjects, and the use of material culture. For example, Troup's journal, like those of other poor whites and mid-level managers like Thomas Thistlewood, provides informative, if cursory, descriptions of the conditions of slavery and the lives of enslaved laborers during a critical juncture in the history of the Atlantic world.[36]

The priorities of imperial agents and colonial subjects invite us to examine how environmental policies and actions shape subjects. Agricultural intensification, actualized by labor on Nature's Island, created everyday hardships, and these were negotiated in everyday uses and conceptualizations of water. West Indian slaves and planters lived in a diverse tropical setting with different patches of soils supporting an abundance of floral and faunal species. Some soils in the Caribbean more readily accommodated Europeans' desires to grow commodities for export. Others did not yield. Because of these characteristics, the availability and potential utility of land impacted how people lived, built, and moved across the landscape. Additionally, people who lived in slave societies were particularly vulnerable to changes on the ground. Many decisions—including which trees to cut down, how to build houses, where to plant crops, and when to harvest—carried long-term implications for the health of the soil, the presence of the water table, and the people who cultivated the land.

Some predicaments evident on Dominica were put in place centuries before the French established their first farms; others were made as water mills were built and rivers diverted to feed their chases. The spatial scope varies: some of the predicaments connected the regulated villages, the fields, and the factories of Dominica to factories and farms in distant England. Others involved exchanges with next-door neighbors or workers in the next valley over. The nature of this engagement was not predictable, nor were the changes it inspired in the land. Whether elites of a parish were dominated by people who habitually spoke French or people who spoke English was the outcome of oceanic networks of investment and ambition, emerging senses of nationalism, and the movement of

specific groups into the valley or up a hill. Some predicaments were shaped by more immediate concerns. Boundaries drawn on a map were hard to maintain as local practices of boundary making emerged, and the practicalities of everyday life became increasingly important for the bottom line. For Troup, the problem of slavery was a problem of disease and malady inspired by a climate he took as foreign. These were problems of the immediate that never made it into the politics of slavery and abolition in which Britain's working class engaged.

There was a crisis of slave subsistence in the last quarter of the eighteenth century.[37] As the Windward Islands were divided into, more or less, two groups—one French, the other British—they did not simply co-exist side by side. Their residents were linked through a shared predicament, since the prosperity of some depended on food they could obtain from others. Colonial residents obtained food in three ways: rations purchased through merchants and chandlers in Atlantic port towns, an internal economy supported by slaves' part-time food cultivation, or some combination of the two. This predicament was uncomfortable for colonial administrators because it cut across colonial boundaries, prompted interaction between colonies, and provided infrastructure to forge belonging between people. The predicament was dangerous for those who had to cross the waters illegally.

Colonizing narratives stressed economies of scale and efficiency in production in plantation colonies. While a ration system inhibited the accumulation of capital, it linked technical efficiency with the amount of land and labor devoted to commodity cultivation. Planters provided clothes, household goods, and rations grown and processed for the express purpose of outfitting slaves.[38] Take, for example, the *Ordinaire*. In Guadeloupe and Martinique, Article 22 of the *Code Noir* obliged planters to provide two pounds of salt beef or twenty-three pounds of fish, and six pounds of cassava flour or seven and a half pounds of cassava. Yearly, enslaved laborers would receive two changes of clothes.[39] Some of the farms that provisioned the *Ordinaire* could be found in North American colonies, others in Martinique itself. Colonies also relied on their own "internal" economy. Planters allocated land and time for enslaved laborers to cultivate crops, raise animals, harvest fish, and hunt for food. The enslaved would be expected to purchase household goods by selling surplus agricultural goods through legally sanctioned Sunday markets.[40] The time allocated to working provision grounds varied. In most cases, these approaches were not mutually exclusive. In Jamaica, Sunday and every other Saturday were considered "free time," but less time was allowed during peak labor periods such as harvesting sugar or weeding fields. In theory, both models increased the efficiency of plantations and helped manage labor.[41]

Reducing the cost of providing for enslaved laborers and curtailing the flow of capital to neighboring colonies enabled some colonies to prosper. In Martinique, many planters did not adhere to the *Ordinaire*, opting instead for what was called the Brazilian system.[42] Between 1700 and 1800, the number of slaves increased dramatically as more land was devoted to sugar cultivation. Enslaved people developed multiple strategies, including hiring out their labor on Sundays (mostly men) and growing provisions to sell on the street market.[43] Despite metropolitan endorsement of the ration system and attempts to limit self-provisioning, eighteenth-century planters rarely followed these guidelines.[44] Their livelihoods changed very little when local councils passed ordinances that encouraged planters to cultivate land for slave subsistence six times between 1708 and 1751.[45] Household refuse recovered from regimented villages where enslaved laborers lived speak to this combination of strategies. For example, in Guadeloupe and in Martinique where the *Ordinaire* was in effect, dietary remains, including butchered animal bone and locally made goods, indicate that slaves supplemented their rations through proceeds gained in hunting, fishing, subsistence and cash-crop cultivation, or craft production.[46] These assemblages also show that the economic networks that circulated these goods extended beyond the confines of their respective shores.[47]

Reducing such costs could also make colonies vulnerable. Warfare could increase the coffers of colonial merchants but could interfere with trade. During the American Revolution in 1776, slaves living in Barbados faced one such crisis. Planters in Barbados relied on imported foodstuffs including maize, fresh and salt fish, and ground provisions intercropped with sugar cane. That same year, increased unrest among slaves in Barbados, including a crushed insurrection, brought the imposition of martial law. In addition to the increased troops requiring food, there was also a drought, making subsistence strategies even more precarious. Fearing rebellion, planters prepared for slaves' subsistence in St. Kitts, Antigua, and the Windward Islands, raising the costs of imported foodstuffs like rice and guinea corn. It would be a mistake to think that details such as natural disasters and political unrest impacted lives and livelihoods only in the islands where they were reported.

During hurricane season, food scarcities intensified for ordinary people, demanding on-the-ground alterations to food systems. Heavy rains and winds could blow down trees or wash away fields. On October 10, 1780, a hurricane made landfall in Barbados, killing 2,033 enslaved Africans and 6,000 cattle. One year later, the number of deaths rose to 5,022.[48] The importance of regional food networks increased as a series of hurricanes and earthquakes reduced the

amount of locally grown provisions available to enslaved laborers. At one estate, income declined to 20 percent while costs to feed the slaves increased by 124 percent, causing the owner to lose £1,130.[49] While it would be easy to describe such death and destruction as the result of natural disasters, the disaster itself is a social construction whose ultimate outcomes relate to vulnerability and risk as well as to hazards. The severe consequences of events such as the Barbados hurricane of 1780 followed directly upon the precarious nature of provisioning that evolved in the Caribbean.

In Dominica, which was perceived to have abundant land, crises also emerged. Before colonization, Dominica was a breadbasket for surrounding islands. It was during metropolitan attempts to limit self-provisioning in Martinique that farms discussed in the previous chapter were established in Soufriere. In the years immediately following the American Revolution, planters and merchants complained of desperate need for supplies to provision loyalists and their slaves who had been relocated to the island.[50] The loss of direct trade with North America forced merchants and planters to look to neighboring islands for provisions and lumber—items that the island putatively had in abundance. Colonial merchants, to supply the planters, sent large sums of money to the French West Indies to purchase lumber and provisions—a tactic fraught with problems. Governor John Orde of Dominica summed up the dilemma of the planters: "the difficulties they labour under, in now procuring those supplies with which they formerly abounded, are sensibly felt."[51] Intercoastal trade, which had been historically important in Dominica's economy and gained heightened significance in the wake of such shortfalls, prompted a series of complaints on the part of then-Governor Orde to the Board of Trade about such clandestine transactions.[52]

Enslaved laborers supplied a significant quantity of food staples consumed in the port towns: Portsmouth and Roseau. This food system developed out of the complicated network of provision grounds, slave gardens, and maroon activities. In 1799, the Dominica Assembly renewed the 1775 Slave Act. A commentary authored by the president of the Dominica Assembly accompanied this act when it was presented to the British Parliament. Enslaved laborers, it explained, grew "abundant quantities of yams, plantains, bananas, cassada [cassava], eddoes, potatoes, occraes, Indian corn, cale, pigeon pease, and several species of beans, and pine apples" in provision grounds in mountain woodlands. Many of these are fairly resilient crops that are relatively easy to grow. According to the governor, produce from these gardens would allow the enslaved to "purchase hogs, goats, and fowls, from the produce of their gardens."[53] Evidence from other islands

suggests that food was not limited to these starches. In Dominica, the most popular starches were root crops and cereals like guinea corn, Indian corn, and "mountain rice."[54]

In contrast to provision ground produce, workers grew "many kinds of European garden stuff such as cabbages, carrots, turnips, beet root, lettuce, asparagus, artichoke, radish, cucumber, cellery, and herbs of all sorts, besides tropical fruits" in gardens near their houses.[55] These crops require much greater care and fetched a premium on Dominican street markets. The owners of an excess supply often sold them at local markets. A 1789 report submitted to the House of Lords described the colonies in the Caribbean with special attention to conditions of the enslaved. It stated, "if they cultivate them [gardens] industriously, they may not only feed and clothe themselves comfortably, . . . and usually acquires a property of from 10 to 50 £."[56] The origin of that excess, however, could be a complicated set of relations. The material qualities of vegetable matter are relevant here. Herbaceous plants would rot if not quickly used. Tubers, such as tania, dasheen, and cassava, were more durable but would rot eventually. All were subject to the appetites of domesticated and wild animals such as goats and pigs. By the turn of the nineteenth century, colonial codes had accounted for the manufacture and sale of marketable goods by enslaved laborers; these codes merely legitimized commercial acts already in practice.

Of contemporary discussions of trade and subsistence through Dominica's markets, Troup's descriptions, though brief, are perhaps the most revealing. In notes that I transcribed, I documented thirty-nine transactions made by Troup at a local market first in Roseau and then in Portsmouth. For the most part, Troup's transactions were ordinary, including clothing and foodstuffs. Early on in his visit, he purchased a parasol, "of a French make from Martinique at five dollars."[57] Because the goods had to cross borders, they cost a bit more. In addition to parasols, and other costly items, such markets also afforded him the ability to procure supplies for his practice, including precursors for medicine such as sulfur stones, three good lancets for a quarter of a dollar, and items more particular to his professional ambitions.[58] That same market day he purchased an owl that "was found on a tree asleep & knocked down with a stick & killed in [the] woods" for a "bit and a half."[59] A bit was one eighth of a Spanish dollar. The previous month he purchased the remains of a horse partially digested in the stomach of a shark.[60]

That said, the market was dominated by foodstuffs. Troup described an August visit to the market where he purchased guava jelly, tanias, a large pineapple, pigeon peas, picked peas, limes, and a crab. His delight with the variety of

available foods is apparent in the text. He also remarked on the cost: "in a word the vegetables are pretty cheap considering the price of other articles."[61] These goods were only available seasonally. Later that month, he complained after one dinner, "The Peas at the table—2 bits for a quart in the pod—at home ½ penny."[62] In February, during the dry season, Troup remarks, "Bought a bit of Irish potatoes (10 small ones). Bought the last of sweet potatoes (40 large ones)."[63] By March, Troup had begun to live in Fort Shirley near Portsmouth. His rations per month were 3.4 lbs of pork, 1½ lbs of butter, 1½ lbs of peas, 1 quart of rice, and 3 pints of rum. In March, tired of the food at the mess, Troup left dinner and sent "a Negroe to town with Pork to see and procure for me vegetables and fish."[64] The person he sent was most likely a huckster attached to the fort.

The transaction Troup commissioned is also telling. While we will not know who was transacting the exchange, it is safe to assume that both the fish and the vegetables were harvested locally by enslaved laborers. That they were being sold on the market also suggests that these items constituted a surplus for those who were selling them. It also indicates that meat, salted or fresh, from domesticated animals had a higher premium. For example, Troup complained about the cost of lard due to excise taxes: "Spanish cattle for lard at 2 dollars & 2 ½ a piece. It will not sell less than 24 from the schooner because the duty takes greatly from the profit."[65] This cost was particularly burdensome for enslaved laborers. The animals they raised—hogs, chicken, and goats—were not necessarily for protein. Instead, they had household tasks: chickens laid eggs, goats provided milk, and pigs ate the detritus of everyday life. Butchering one of the animals would not have been done lightly.

Fish and wild game, as in other parts of the Atlantic world, provided a significant amount of dietary protein.[66] Troup described the popularity of crapeaux or the giant ditch frog (*Leptodactylus fallax*).[67] Sometimes called mountain chicken in Dominica, this large amphibian is found in the woodlands near streams and springs in elevations up to 400 meters. Although well camouflaged, these animals were relatively easy to hunt as they stood still for long periods. In addition to the giant ditch frog, agoutis, possum, lizards, wild boar, and goat were animals that were hunted in the landscape.

Fish was an important part of island diets. Fish could have been caught by the effort of individuals or small teams using lines and small nets. Fishing could have also employed large groups. Troup witnessed the netting of fish by a team of fisherman. He states, "I Saw as large a net spread . . . opposite Woodbridge . . . and a boat at each or canoe with another who throws stones—it is widely spread while twelve Negroes on shore draw it in in this Circular direction."[68] One of the

jobs assigned on plantations was that of fisherman. They were responsible for capturing fish to supplement the proteins provided in the ration.[69] Accounts like this allow us to think about the coordinated effort that went into supplying the markets with fresh fish. That coordination might have been among free people of African descent, but more likely it was among fishers who worked on different plantations. Importantly, fisherman tended to have access to small watercraft, which they could take out to sea, and, perhaps, across borders. Mobility was, therefore, embedded in the internal market system upon which island plantations relied.

Small, seemingly modest events can create devastating effects for lives and livelihoods in places thought of as disconnected. Elsewhere a colleague and I have described these events as "ripples that drown," a phrase borrowed from Ó Gráda's discussion of famine, death, hunger created by British imperial policy in India.[70] As a rock thrown in a pond creates ripples, intercolonial relationships were linked and dependent. On islands that lacked the kind of standing or unused land that was set aside for laborers to cultivate their food, planters and their agents imported food from elsewhere. The residents—enslaved and free, white and black—were far more reliant on intraregional food networks than regional and local networks. Without these, there was a greater likelihood for them to drown from a "ripple."

The list of details presented above is partial and dynamic, since the social, material, and political are not mutually exclusive. The prevalence of boom-bust markets and war in a matrix where political access was defined through a narrow franchise of sex, race, and landholding status meant that disease, hurricanes, and earthquakes had uneven political implications. Predicaments are shifting and dynamic, but they are not random. Instead, they are influenced by historical context and the decisions of multiple (sometimes spatially or temporally remote) actors. Every detail has an individual yet connected history. A predicament is a tangling of these histories, in some cases deliberately, in other cases unintentionally. In all instances, predicaments have consequences. Importantly, the details that make up a predicament can be mapped.

The details of subsistence provoke questions that should seem simple enough to answer: who got what, where they got it, and what they did with it. But because texts don't treat slave life with the same kind of granularity as does the archaeological record, they limit the maps that can be made. Details of subsistence are material and retrievable, if only partially, from the archaeological record. By bringing together material objects with site mapping, archival documentation, and visual representations, I examine a series of cultural acts that

had ramifications for survival, reproduction of social power and privilege, and ritual life. The mundane recognition that master and slave households contained different kinds of commodities becomes a history of how materials traveled across oceans, were filled with fluids, sold in markets, carried back and forth to freshwater stations, and poured from at the table. Artifacts render the labor of hauling, pouring, cleaning, and distributing (or refusing to distribute) legible on human bodies.

Assemblages

The image of plantations has become familiar through popular media. For some, it indexes a violent and traumatic past. For others, it is a site for monumental stately architecture, the aesthetics of manicured fields, and the possibilities for self-sufficiency. The realities of everyday life, however, cannot be reduced to the spectacle of corporal punishment, or the whitewashed landscape in which it happened. Among the distinctive forms of evidence regarding plantations is the name: depending on the context, West Indians used the terms "estate," "plantation," or "*habitation*" to refer to the dispersed agricultural settlements where intensified agriculture took place. While the plantation has been called a "factory in the field," plantations were not always seen as distinct, nor were they treated differently, from colonies.[71]

To this point, the Oxford English Dictionary includes thirteen different definitions of the term "plantation." In all of these definitions, creating a plantation entails either the act of cultivating, the act of colonizing, or the act of establishing an institution. The popularity of these definitions has varied between the fifteenth and twentieth centuries. If one were to use "plantation" in the fifteenth century, for example, one most likely meant an institution. In the seventeenth century, one most likely meant a colony. In the nineteenth century, one most likely referred to an agricultural practice. "Plantation" as used in the eighteenth century implied a combination of all three.

The main difference between a plantation and a farm is shifting cultivation techniques: opening up new plots of land from woodlands and leaving old plots to go fallow and graze. In plantations, people lived in concentrated hamlets rather than scattered throughout the landscape. While they produced an enormous amount of capital, subsistence was not always guaranteed. When people visited the island for the first time and documented their experiences, they did not meet anyone who pontificated on the benefits of these arrangements. What they described instead was a collection of acts, relationships, dispositions, and

objects of belonging. In short, they described the assemblages that composed the plantations.

I map predicaments through the lens of "assemblage geographies."[72] Geographers, philosophers, anthropologists, and others have adopted "assemblage" to refashion traditional objects of discussion (e.g., bodies, things, spaces) as networks of ideas and matter rendered socially. Some, for example, have recuperated Marx's ecological priorities by discussing society's metabolic assemblages. The past 500 years have witnessed an increasingly globalized rift where frontiers are sites where some problematic (e.g., the distinction between humans and nature) is resolved.[73] Here, tropes of alienation, accumulation, and dispossession attend to ecological crises that frame capitalism's different engagements.

Others have focused on the genealogy of assemblages, where "ideas and technology were not 'pure' forms brought to bear on a messy world of reality," but, "emerged from the mixture and were manufactured in the process themselves."[74] Building on this, I use "waterways" to put into conversation the historical subjects acting through particular conjunctures with an archaeological record created and shaped by different generations in particular ecological contexts. Although limited in the way that it can attend to "history at one point in time,"[75] by considering the assemblage as an accumulation of decisions materialized over time, we begin to see the predicaments that shaped people's lives and livelihoods most directly. In short, assemblages can tell us what is most important in people's lives, assuming we have a sample that is reflective of those decisions.

Still others insist that humans exist in a world partially constituted of and by objects where "beings do not preexist their relating."[76] By studying the assemblages of matter we call "objects," we can consider cultural and political acts of making categories.[77] Assemblages are composed of a constellation of elements where the relationships of those parts are neither stable nor fixed, and the relatings are more than the sum of their parts.[78] Such an approach works well with archaeology, especially as it relates to climate, as it translates these elements into "details" that can be mapped on the ground. Climate, for example, can be defined as "constituted by the interrelationships and dependencies among a multitude of different materials, things, and organisms."[79]

Indeed, environmental anthropologists have begun to recognize the value of examining slavery's environmental subjects, noting the "devastating transformation of diverse kinds of human-tended farms, pastures, and forests into extractive and enclosed plantations, relying on slave labor and other forms of exploited, alienated, and usually spatially transported labor."[80] Farms as an assemblage of plants, people, technologies, and animals became increasingly valued

for their global relations, rather than more intimate ones. Gardens maintained by slaves were a "biotic," political, and social refuge.[81] These refuges are spaces where "those species wiped out elsewhere" by disturbances, including the last interglacial period, "continued to thrive."[82] We can extend the latent potential of these spaces for "reworlding."

The questions posed by many archaeologists about the biases that inform the record we study can be added to this list. The durability of goods limits the visibility of past actions—we will find an estate house made out of stone more readily than a Kalinago *carbet* made from red cedar and *gommier*. The record is also affected by the questions that the excavating scholar finds worthwhile. Scholars have productively addressed the incompleteness of assemblages, whether one is talking about the site formation process, the inability of a conceptual apparatus to confront difference and variation, how the differential preservation of materials is linked to inequality, or what assemblages conceal.[83] By considering what is missing from the assemblages, archaeologists have brought about an ordered set of questions to some very messy and fragmentary data.

To understand the predicaments brought about and resolved in the wake of the sugar revolution, I consider assemblages of buildings scattered through the uplands of Soufriere and the lowlands of Portsmouth, two enclaves of Dominica (maps 1.3 and 1.4). Using the analytic of the assemblage, I detail where such structures were located, not just in relationship with each other, but in connection to other elements in the landscape such as soil, water, and woodlands. Constructing past landscapes always requires a bit of inference for archaeologists, but in this case such deductions are informed by evidence from repeated visits between 2010 and 2017 and by the work of others.[84] I also examine the assemblage of networks that frame the social relations of the plantations. Networks are helpful ways to map particular geographies, in that they enable us to explore the systems of the world carried within each object. As such, networks have the potential of providing a different map—one informed by the spatial practices of marginalized people. The maps generated by these networks are not incorrect, but they are incomplete.

To provide a fuller accounting of predicaments and their resolution, one must attend to questions of volume within those networks. While our knowledge of the exact quantity of goods or ideas circulated through these networks will always be partial, comparing different types of evidence that speak to these networks—including refuse pits and customs accounts—can help us understand what we might be missing. The final assemblage I examine is that of the household. Households are notoriously mercurial archaeological subjects. Family, professional, and life histories, among other elements, cannot be assumed based on

co-residence. Similarly, objects recovered from households and their associated yards do not represent in a one-to-one fashion the material worlds of those who lived there. These difficulties notwithstanding, houses are at the interface of political economy and the environment; as such, they produce key information about the predicaments of slavery.

One of the key predicaments faced by households in colonial Dominica was the scarcity of water. Household assemblages provide insights into Dominica's waterways, created by the enslaved to resolve the issue of scarcity they had to negotiate to live. Water has received considerable attention in recent years. Environmental resources are limited, and with neoliberal governance, public control over water is vulnerable to market inefficiencies. As a result, municipal governments and development agencies no longer consider substantive approaches to the land as viable possibilities. They instead promote optimistic, technological fixes, based on the assumption that rationalization will benefit everyone in the end. These questions have critical political stakes. Historical archaeology is well positioned to contribute to understanding the intimate implications of agricultural systems, tropical adaptations, deforestation, and climate change. For example, many rural areas in the colonial Americas, particularly those found among Caribbean sugar colonies, used a diverse set of strategies to integrate farming, trade, and settlement into an interdependent landscape. Slavery's material record often speaks to the struggles of transforming manifold soils into arable land and to the administrative process of refashioning diverse peoples into colonial subjects.

The emergence of new waterways governed by global markets was avoidable. On many islands, land was corporately controlled by families. The land was assigned to one family member or another in response to administrative pressures but was not necessarily treated as their property by the members themselves. Similarly, cash crops are grown in any number of land and labor arrangements. Today, land and labor may be organized along idioms of kinship on small farms, through mechanized and wage labor on industrial plantations, or a system of sharecropping. Each of these might lead to different relations to land and to the care with which labor stewards its resources. Under conditions in which economies of scale are not as much of a concern, they might use the resources, but they do not need to use those resources "efficiently" to sustain themselves or reproduce their relation with the land. Arising through some predicaments, and not others, such developments carry far-reaching consequences for people whose livelihoods depended on others' labor (a mill worker or slave), but who may never have met them face-to-face.

Planters had to squeeze resources from machines, humans, and the earth, each of which had a cost and a breaking point. Enslaved men and women salvaged usable water out of dirt, soaked gourds in it to fashion vessels, and sought refuge from its floods. We imagine the households of Dominica also nestled against rainstorms and withstanding, or not, winds and landslides. Water was a danger in its abundance, too. Ultimately, the relationships with and through water, what I call "waterways" in this book, were forged to meet these predicaments. My use of waterways builds on the work of cultural anthropologists and geographers to incorporate the archaeological record in the analysis of people's relationships with and through water.[85] They are a preservation of lifeways, ritual, physical need, and satisfaction, providing evidence of a life outside of and above slavery. Waterways are a starting point for understanding the weaving of nature and culture, capturing social, political, and environmental processes.[86] Waterways remind us of deprivations but also shared meals and libations and the reproduction of slavery's calculus in a variety of realms.

Research in Practice

The archaeological record is part of the set of predicaments it embodies, sometimes as a repercussion of predicaments felt in far-away places, but more often as an active set of processes encompassed in the related predicaments. As with most, the archaeological sites that inform this study, including the landscape, the buildings, and the detritus, have developed slowly. Changes in soil accumulation can signal changes in land use. The surface scatters of household furnishings and buried detritus allow us to infer the location of activities. Some of these activities took place in spots expected by witnesses' statements. Others did not. Attributes of the materials recovered from these deposits—sometimes including details invisible to the naked eye—allow us to tell a more complete story about how these fragments were found in a specific location. Coordination of fragmentary materials and documents in an eighteenth- and nineteenth-century landscape allows us to identify and understand intersecting predicaments.

My involvement in Dominica began in 2005, when I joined Ken Kelly to conduct postdoctoral research sponsored by *Direction Régionale des Affaires Culturelles* (DRAC) in Guadeloupe. The goal was to map, collect, and analyze pottery we believed to have been made in the Caribbean between 1700 and 1900. Using sources including a cadastral map produced in the 1780s, a dissertation written by a St. Lucian archaeologist working on Martinique, and site reports and surveys completed by staff members at *Institut de recherches archéologiques*

préventives (INRAP) in Guadeloupe, we identified, mapped, and described potteries, plantations, and colonial settlements throughout Martinique, Guadeloupe, and St. Martin. We focused on islands where French was spoken, either as an administrative language or habitually as part of Creole. At the time, a visit to Dominica was preliminary, potentially never to go back, but rather to fill in a sampling strategy so that we could complete a map of ceramics people used in the Lesser Antilles. But I kept going back.

Beginning in 2009, I started a systematic research project, the Archaeological Survey of Colonial Dominica (ASCD). The goal of this eight-week intensive archaeological survey was to identify and record discrete archaeological components associated with the transfer from French to British imperial control in 1763. This research was proposed to be a first step in a larger project to identify common characteristics and substantive differences between Atlantic-era empires in the Caribbean (including Spain, Britain, France, and the Netherlands) and compare them with the imperial strategies more commonly described archaeologically (i.e., Aztec, Inca, and Roman empires). By looking at the organization of space and economic networks represented in material remains, I hoped to examine how colonial empires "administered diversity." It built on my previous research in Jamaica, which sought to identify and explain how colonial settlers and slaves relied on local and global economic networks to provision themselves during the eighteenth century.[87] I was also hoping to continue the research Ken Kelly and I had started and explore the contours of trade and how it changed over time.[88]

The research was informed by the geography of the island—both past and present. In his book *Peasants and Capital*, Michel-Rolph Trouillot describes Dominica as a "patchwork of enclaves," where, until recently, different communities in the northern, southern, and eastern parishes were relatively isolated from each other, each producing separate cultural trajectories.[89] I focused on two enclaves, Portsmouth and Soufriere. Soufriere contains some of the oldest French settlements on the island. Access to Soufriere was mostly by canoe until 1968, when a long and precarious road was built connecting Soufriere to the capital, Roseau. While proximate along the southeastern and southwestern coasts, the rugged terrain, steep slopes, and narrow coastlines made Soufriere an island unto itself. At certain points in its history, Soufriere was a "spatial beyond the state" throughout nominal French control in Dominica.[90] Portsmouth, located in the northwest of the island, is the second largest city in Dominica, laid out only after the British annexed the island from the French in 1763. Because of the natural harbor, residents of the enclave have always had easy access to regional

and global trade networks. Creole was spoken in both enclaves, though habitually so only in Soufriere.

I use the case of these two enclaves to focus on the people, forced or otherwise, who made Dominica their home. These enclaves afford a broad coverage of Dominica, not only regarding history but also concerning the predicaments inhabitants faced. One such predicament was water insecurity. The people in Soufriere, for example, had far less access to water than people in Portsmouth (Grande Anse) (table 1.1).

The willingness of people to work with me and patiently guide me through the investigation also conditioned the research. There was and is little cultural heritage infrastructure on the island. Existing infrastructure came from the free time and effort of a few individuals, one of whom is Lennox Honychurch. Former radio personality, senator, and professor, he did the job that would employ four or five people in most governments, facilitating the research of anthropologists, botanists, zoologists, volcanologists, and archaeologists. I was lucky to know him, especially because during his doctorate in anthropology, he focused on the ethnohistory and archaeology of the island. Honychurch was instrumental in leading me to certain documents in the archive, suggesting a particular lead, and assisting with my research design.

Many people, from Dominica and beyond, assisted me with excavation. Part of building a heritage infrastructure meant training a local team in excavation techniques, site documentation, and site management. I did not do this work myself. I relied on the help of Edward Thomas, a village council chair, and Michael Sanford, a Kalinago estate caretaker. Both had worked extensively with archaeologists in previous years. As such, I had to organize the workday and seasons around their ability to contribute. In some cases, it meant starting earlier than some student volunteers were used to, or working later in the day than I would have liked. As a result, we got to see sites and landscapes at different times of the day. Contrasts in soil are highlighted as the sun rises and sets. The temporality of excavation attuned us to environmental conditions and how they affected archaeological visibility of the objects of our study.

Following what has become common practice in archaeological survey, I visited each of the enclaves—by myself, with Honychurch, or sometimes with the whole team—always after obtaining permission from the landowner. Honychurch and team members assisted me greatly in these moments. I relied on their goodwill and people's knowledge of them to vouch for me. At first, some of the landowners or community members were hesitant to grant me access. They worried that I was interested in purchasing the land, prospecting for minerals, or

TABLE 1.1. Names of administrative units in Dominica, enslaved population, and export crops over time

French Administration (1729–1761)							British Administration (1763–1778 / 1783–1978)						
	1743*							1799**	1827***				
Quarters	Enslaved (total)	Cacao Pied	Coffee Pied	Cotton Pied	Manioc Pied	Plantain Pied	Parish	Enslaved (total)	Enslaved (total)	Coffee (lbs.)	Sugar (lbs.)	Rum (gal.)	Molasses (gal.)
Roseau	448	1,200	232,400	30,600	292,000	69,400	St. George+	6,387	2,233	212,829	604,800	13,991	20,592
Boiry	226	800	104,500	9,000	987,000	19,500	St. Paul	2,377	1,670	160,717	583,700	12,370	14,500
Layou	177	—	36,000	43,900	108,000	11,500	St. Joseph	1,937	1,306	108,021	647,250	9,675	22,802
Grand Savanne	*453*	*1,000*	*60,200*	*19,130*	*630,500*	*203,400*	St. Peter	1,838	949	145,525	14,775	300	—
Grand Ance							*St. John*	*1,811*	*930*	*49,626*	*388,325*	*6,350*	*11,160*
La Soy	142	6,000	1,600	1,200	165,000	5,500	St. Andrew	1,713	1,502	68,067	895,355	27,490	10,000
Maho	194	—	38,600	8,100	144,000	10,900	St. David	818	525	—	523,000	10,800	12,600
Grand Bay							St. Patrick	2,377	1.708	34,275	960,200	32,025	3,700
Soufriere	***210***	*200*	*111,400*	*1,000*	*170,900*	*4,690*	*St. Mark*	*1,010*	*768*	*44,493*	*241,775*	*6,059*	*4,804*
P. Michelle							St. Luke	1,046	811	112,386	—	—	40

NOTES: Italicized parishes and quarters correspond to the enclaves of Soufriere and Portsmouth, the focus of this study. Also included is land use by crop and number of cattle (bête à cornes) in 1743. Typically, a pied was short for a pied du roi, a "French foot." In this case, as a measurement of land in cultivation, it more likely represents a pied carré. Pied carré (as well as, quarré, quarreau, and carreau) literally means "square," and may have referred to any piece of land bounded by equal sides and right angles. It was a small unit of measure, a little over 1.1 square feet (see Zupko, French Weights and Measures). The produce and population for Grand Savanne and *Grand Ance* were tabulated together; the same was true for Grand Bay, *Soufriere*, and P. Michelle.

+ Includes Roseau.

* De'nombrement General De L'isle Dominque Susiant Les Quartrers . . . 1743.

** Parliamentary Papers, 1805, p. 119.

*** "Returns of Produce given in under General Tax Bill 1827" Dominica Almanac and Register 1828.

assessing the land's "real" value for the government. Typically, people told me that there was nothing of interest, or feigned interest and never got back in touch. Several landowners told me about another archaeological team interested in doing work in the area and how they found no evidence of a village—though we were standing on a scatter of artifacts from the eighteenth century. I respected their wishes and only worked with those landowners who would allow me on their land. I was polite but stubborn, with every return visit asking if I might walk the property. After a while, most landowners consented and left us to our walks.

In the following years, I followed what is called a multistage research design, increasing in intensity from pedestrian survey to test excavations to the excavation of houses and their yards. Since variation in construction practices, settlement location, and intensities of occupation can create differential preservation of features of plantation sites, some settlement components can comprise "off-site" (slave villages) and "non-site" (provision grounds) deposits. In 2010, eight of us walked transects, that is, straight lines up hills, through brambles, and down slopes at set intervals. Team members on either end maintained the cardinal directions of the survey using a compass. This straight line often wound up being theoretical. Depending on ground visibility, forestation and topography, the intervals had to vary as we brushed aside leaf matter to see if there were any artifacts on the surface. Surface survey proceeded to identify evidence of foundations associated with the plantation complex, house platforms, agricultural terraces, known exotic fruit trees, and artifact scatter. Ruins of factories or estate houses could, in some cases, be easily discerned, and in other cases presented a challenge. Fast-growing ficus trees blanketed some structures, including factories and windmills. People, over time, often used rubble for agricultural terraces, nearby house platforms, or new enterprises, wishing to take advantage of a burgeoning tourist industry. Development in the twentieth century also meant that entire villages and estates were destroyed, with only a few subtle clues to signal their past presence. Of all the artifacts, the class most clearly identifiable on the surface on plantation settlements was bottle glass. Regional surveys conducted throughout the Caribbean have come across similar challenges.[91] While not unique, Dominica, perhaps because of its terrain, most prominently highlights these predicaments.

Climate also shaped my research design. While I did have a chance to visit the island during each of the major seasons, I spent most of my time on the island between January and July. Different times of the year offer distinct advantages and disadvantages for archaeological research. The dry season meant much better visibility on the ground—but it also meant hard soil and a constant need for fresh drinking water and shade for the team. The wet season carried risks.

Diseases are part of the yearly cycle, and between 2010 and 2017 there were outbreaks of Zika and Dengue fever. Beyond this, there was the general discomfort that accompanies the humid and heavy air of low-pressure systems approaching the island. These conditions meant that some elements of archaeological research could take place during the dry season while others were best accomplished at the onset of the wet season. During our time there, an earthen natural dam that contained a highland body of water called Miracle Lake burst during a tropical storm, flooding the Layou Valley. Tropical storm Erica devastated the village of Edward Thomas, the Dominican archaeologist who helped organize the research team and plan the excavations. Two years later—in 2017, when excavations were done—Soufriere was devastated by Hurricane Maria. Homes were destroyed and livelihoods were threatened—including those who worked on the ASCD, exposing many to the predicaments I discuss in this book.

Over the years, my eyes came to be more familiar with the vegetation—especially the kinds that often grow where humans once lived. At the same time, members of the team who had never looked for sites before came to recognize the difference between a glass bottle made in the eighteenth century and one that a local farmer carried into the field just a couple weeks ago. We had yet to understand, however, what was happening under the surface. On Dominica, laborer households were identifiable by the presence of platforms using a complex of terraces to level the steep slope of the land. If more recent agriculture made such terraces challenging to see, artifact scatters, including the bottle glass described above, were a clear indication.

Figuring out how these villages looked (including where they were located in relation to more visible structures), how they were organized, how many houses were there, and the age of those houses, required a series of techniques that I could not accomplish by myself. To answer such questions, archaeologists have traditionally relied on evenly placed test pits no larger than a half meter in circumference. By recording the absences and presences of artifacts, we began to develop a pointillist impression of the village shape. Test excavations also established a chronology for the plantation settlement. To map anomalies, we used other techniques, borrowed from geophysics, that record differences in the level of moisture or changes in the magnetic field. Theoretically, if enough anomalies make geometric patterns, we can infer the presence of architecture. Utilizing both strategies, we more clearly understood that within the past three hundred years, the enclaves around both Soufriere and Portsmouth underwent enormous modifications in the land. In some areas, soil layers dating to the eighteenth century could go so deep that excavators were physically unable to dig to the

bottom. In other areas, such contexts could be reached after only 20 centimeters of testing. Where soils contained materials from people living in Dominica before 1700, the strata tended to be relatively deep, but not always.

On some sites in the Caribbean, soil accumulates at a snail's pace. Dry conditions, shallow soil horizons, or low topography have led to some conditions where thousand-year-old sites could appear a few millimeters under the surface.[92] This is not the case in Dominica, where soil accumulation can occur at dizzying rates. In years where the dry season and the wet season were extreme, a particular set of circumstances could arise in which soil would lose its ability both to retain water and to anchor to underlying sediments. In such cases, landslides or increased sedimentation can occur. The differences in pre- and post-1700s stratigraphic soil depths were directly influenced by changing land use. Deforestation exacerbated these conditions. When high convection rainfall hits during tropical storms and hurricanes, soils can destabilize and slide. New residents often repurposed old village sites to create new villages. In some cases, agricultural activities that plowed the earth meant communities that were once home to two to three hundred people were practically invisible on the surface.

By the end of archaeological testing, we had examined the layout of five villages: two in Portsmouth and three in Soufriere. We made preliminary assessments about the location of houses, and ventured forward with household excavations. The team successfully identified a rich archaeological record from residences representing occupations both before and after this agricultural transition. Among these five estates, we excavated areas associated with twenty houses. This record included evidence of architecture such as iron nails, postholes, and foundation materials. The record also has evidence of diet and changes in procuring food. The team recovered a rich collection of plant remains. This evidence was retrieved from garbage middens, cooking hearths, and living surfaces in the yards.

To locate relevant sources, I relied heavily on published work, including secondary sources that included transcriptions or interpretations of documents. Archival research in Dominica is indebted to the work of Lennox Honychurch for his examination and organization of the archives into a form more readily usable by scholars. Polly Pattullo compiled rebels' testimonies recorded during trials in the aftermath of a maroon war in Dominica. These testimonies are some of the few firsthand accounts of enslaved life on the island.[93] Her work also includes the accumulated historiography and anthropology of the island. Travel writers and anthropologists in the late nineteenth and early twentieth centuries described language, folk histories, and material culture of island folk, including Kalinago and Dominicans of African descent.[94] Archaeologists who gathered

environmental data to interpret a pre-Columbian past, environmental scientists wishing to understand the affordances of the landscape better, and earth scientists who attempt to describe the complex evolution of island geographies conducted research in the last two decades that assists in the contextualization and interpretation of the archaeological record.[95]

Some interrelated factors hinder scholarship on slavery and slave life in Dominica. In part, the archive is dispersed across Antigua, Dominica, Grenada, Barbados, Guadeloupe, Martinique, Metropolitan France, the United States, and Britain due to a complex political history in which the island was only formally colonized in the second half of the eighteenth century. Before the island's annexation by the British in 1763, there was just a light French bureaucratic presence in Roseau, the seat of Dominica's commandant beginning in 1727.[96] *Archives nationales d'outre-mer* (ANOM) in Aix-en-Provence serves as the principal archive of interest for any scholarship during the French occupation. Subsequently, the island passed between British and French control twice, leading to a patchy archival trail in metropolitan France and Britain. Between 1763 and 1787, enumerations, maps, petitions, and laws related specifically to Dominica are located in Martinique and Guadeloupe.[97] Additionally, at different points in its British colonial past, Dominica was variably administered as an independent colony, as part of the Leeward Islands Colony, and as part of the Windward Islands Colony.[98] As such, relevant sources about the political and social history of the island can be found in Jamaica, Antigua, Barbados, and Grenada, in addition to the UK's National Archives (BNA) and Dominica.[99]

The conditions of the archives also hinder historical scholarship. Dominica's National Archives (DNA) is located on the third floor on Kennedy Street, in between Bath Road and Queen Street, a location much affected by various factors, notably environmental conditions. The flooding of the public records vault in 1979, after Hurricane David, and the June 1979 destruction of the Land Registry in the Old Court House by arson, have left many incomplete folios, damaged documents, and illegible manuscripts.[100] For example, of the 158 Deed Books, 6 were "fragmented," 24 in "poor" condition, 120 in "fair" condition, and 2 in "good" condition. Most (29) of the manuscripts described in poor and fragmented condition date between 1763 and 1829. In short, poor curation and document handling destabilized many papers and led to a particularly critical absence in the documentary record—especially as compared with larger, more extensively studied islands such as Barbados and Jamaica.

Perhaps most helpful here are administrative documents in circulation, such as testimonies, laws, and minutes taken on the island, in the region or across

the Atlantic—for example, the Parliamentary debates related to the cessation of the slave trade, which began 1787. At the same time, enslaved Africans played a role in abolition with regular and persistent resistance. The debates can be mapped through the Parliamentary Papers published by the Irish University Press.[101] Either through circulated letters or in direct testimony, planters appeared and described the conditions of plantations in the West Indian colonies. We also tracked official correspondence, including testimonies of Dominican planters, who testified in both French and English, which led up to the 1799 renewal of a slave amelioration act. In these deliberations, we can glimpse some of the distances between imperial designs of this island colony and its everyday life.

The thing I did not expect to see was that people's livelihoods increasingly depended on island-based resources as they became increasingly engaged in the global economy. Before the transition to sugar, colonists and slaves made use of many goods and foodstuffs from the island and beyond. After the agricultural transformation, slaves and colonists used a higher number of species of fish and local game as food. This shift meant that matter required for the everyday life of all actors, plantations, land, animals, and humans became more important and precious. The record also included evidence of economic activities. Trade goods—including pottery, coins, and other small finds—recovered from the gardens and yards immediately surrounding each of the houses speak to some of the market activities in which slaves were involved. These remains indicate how slaves were integrated with global markets as consumers. They also talk to poorly documented, locally organized, informal commercial networks. While preliminary, results seem to indicate two critical trends after the introduction of sugar. First, informal relationships with neighboring French Martinique continued and possibly intensified after the annexation of the island by Britain. It also indicated an increased difference between houses on the estates.

Comparing Waterscapes in Two Dominican Enclaves

To compare waterscapes is to document how slavery worked through the environment it created (map 1.1). Waterscape generally refers to the interface between land and water from the vantage point of humans. In 1763, this waterscape changed for all of the residents of Dominica. The United Kingdom annexed Dominica, encouraged monoculture plantations (coffee and sugar), and committed the island to a "sugar revolution." The "sugar revolution" as a crop boom can be defined through a number of dimensions. Landowners shifted their diverse agricultural base to monoculture, while labor was increasingly defined

through idioms of property, made up of people who lived in denser settlements and most often racialized as black. These new arrangements with labor, land, and things were put in place to produce more wealth out of a single acre of land than previous crops, such as cotton, cocoa, and foodstuffs.[102]

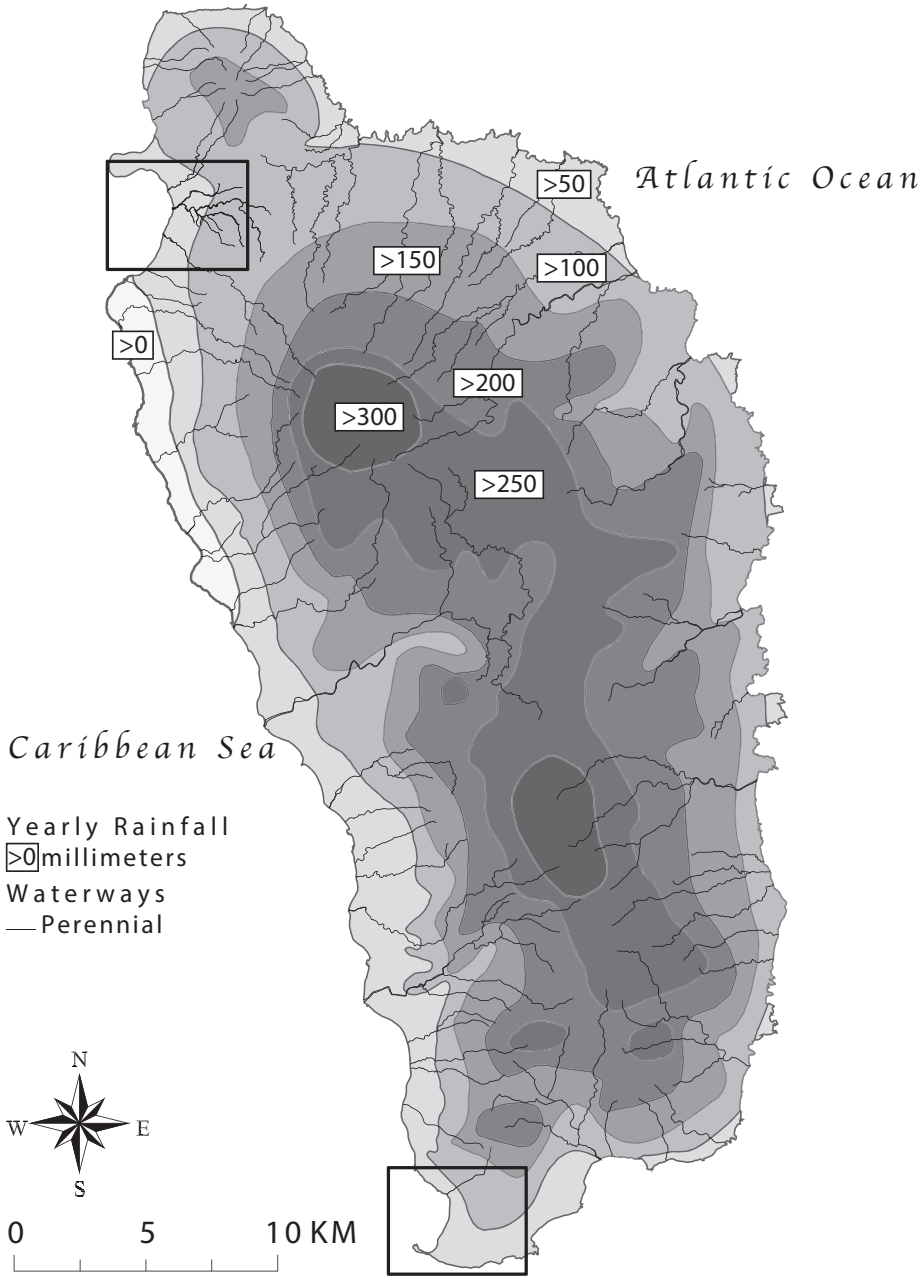
Despite the "ongoingness" of people's relationships with and through water, it is important to document how Dominica's waterscape varied from one place to the next. Dominica, relative to other territories in the British Empire, was environmentally, socially, and economically diverse. Despite being a "wet island" (some parts receive 9,000 millimeters of rain per year), some areas contain little surface water and receive far less rain (1,800 millimeters per year). The dry season (ca. January/February to May/June) creates a "green desert" where temperatures rise. The island can be divided into lowlands (23 percent), hilly uplands (27 percent), and mountainous highlands (50 percent) (table 1.2). Dominica's soils also vary significantly, but six types dominate: young soil, protosol, kandoid latosol, smectoid clay, allophanoid latosol, and alluvium.[103] Each has different potential to retain water, hold nutrients, and stabilize the land. These soils are not static. The mineral composition, drainage, and growth stability of the topsoil is informed by the subsoil. Likewise, the subsoil borrows organics and water from the topsoil that can, in turn, help recharge aquifers. This diversity is readily expressed in the two enclaves I studied.

Agricultural intensification in the eighteenth century was an ambiguous assemblage of local traditions and trajectories; different ventures of political, economic, and technological expansion; uneven potentiality of particular crops; and local engagements with water. The research for this book concentrated on comparing material practices in two regions constrained by mountainous topography and varied links to neighboring islands.[104] Portsmouth and Soufriere afford different potentialities and provide a means to examine how the imposition of new agricultural regimes affected the everyday life of enslaved laborers and free settlers (map 1.2). While these two enclaves differed in multiple ways significant to this study, key contrasts are: the birthplace of the residents and their inferred status, landscape modification and its effects on the land and its resources, the hydrosocial nature of trade through material circulations, and everyday conceptualizations and uses of water in households. Portsmouth was dominated by immigrant English settlers and enslaved Africans, both new to the Caribbean and Dominica, living in an environment with flat plains, year-round rivers, and rich alluvial soils. Soufriere was dominated by Creoles, many from neighboring islands (both enslaved and free people), living in a dry and mountainous environment with poor soils (map 1.3).

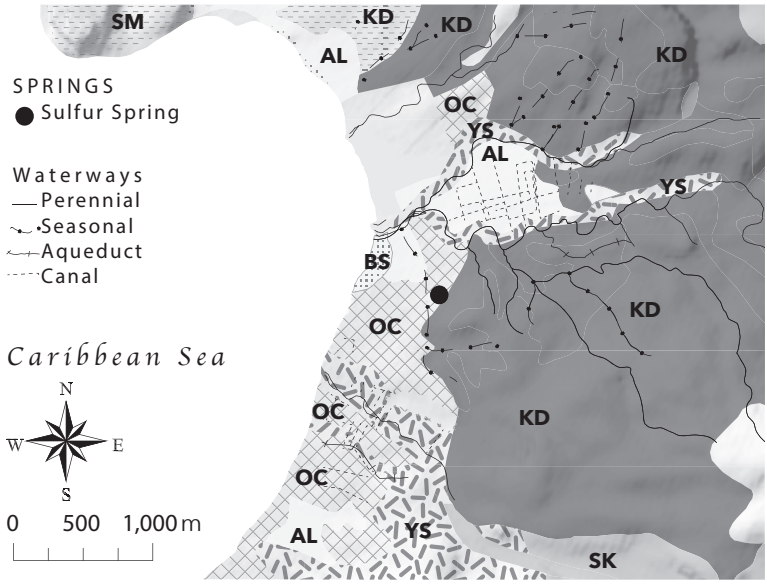
TABLE 1.2. Percentage of land area by elevation category, slope, and soil class

Elevation	Dominica	Portsmouth	Soufrière
Lowlands (0–70 m)	23%	71%	28%
Uplands (71–333 m)	27%	19%	39%
Highlands (334–1516 m)	50%	10%	34%
Slope	**Dominica**	**Portsmouth**	**Soufrière**
0° to 5°	6%	27%	3%
5° to 10°	15%	17%	6%
10° to 15°	18%	15%	10%
15° to 20°	17%	14%	11%
20° to 90°	44%	27%	70%
Soils	**Dominica**	**Portsmouth**	**Soufrière**
Allophanoid Latosol	42%		
Alluvium	1%	3%	
Beach Sand	1%	1%	
Kandoid Latosol	22%	48%	
Other	7%	2%	3%
Clay	1%	5%	
Protosol	2%		53%
Skeletal	11%	28%	12%
Smectoid Clay	5%	6%	
Young Soil	8%	7%	32%

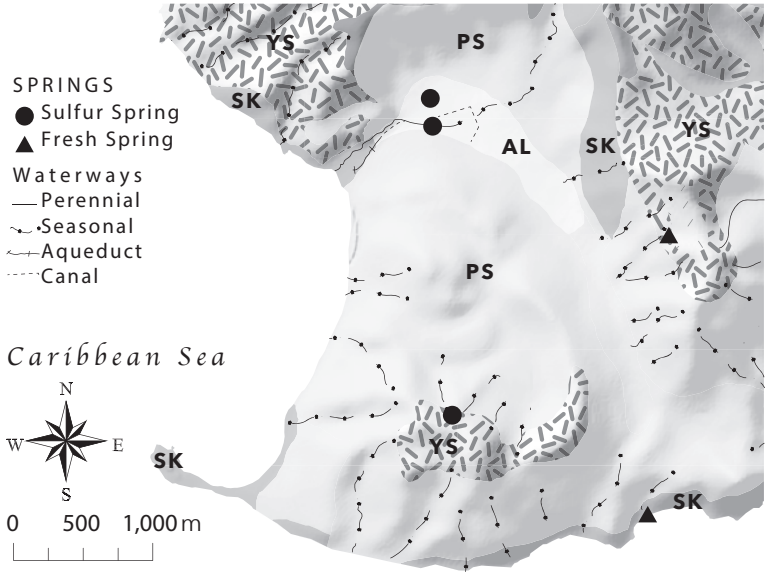
Between Portsmouth and Soufriere, the land varies considerably. Soufriere's enclave contains dispersed agricultural soil and limited groundwater. Soufriere's waterscape includes little in the way of surface and groundwater. The land is nearly evenly divided between lowlands, uplands, and mountains. It is remarkably hilly, with 70 percent of the land on a twenty-degree slope or higher. In 1978, the land was either under cultivation (60 percent), constituted of disturbed submontane forest, or "other." "Other," in this case, includes town



MAP 1.1. Dominica's rivers and annual precipitation. Rectangles designate Portsmouth (in the north) and Soufriere (in the south). Illustration by author.



MAP 1.2. Portsmouth surface water sources and soils. AL = Alluvial Soils, BS = Beach Sand, KD = Landoid Latosol, SK = Skeletal Soils, SM = Smectoid Latosol, YS = Young Soils. Illustration by author.



MAP 1.3. Soufriere surface water sources and soils. AL = Alluvial Soils, SK = Skeletal Soils, PS = Protosols, YS = Young Soils. Illustration by author.

settlements and sulfur springs. There is one perennial river, five drainages with wet season creeks, and three freshwater springs. A combination of freshwater and sulfur springs feeds the river, making it difficult to drink, especially in the dry season. For most estates, freshwater springs were close to two kilometers from their respective villages, with an ascent as high as 500 meters. Cisterns commissioned by and for planters dot this landscape. Transportation of water from other enclaves, or properties, was hindered by very steep topography and legal codes restricting unfettered movement of slaves. This created a predicament that needed to be negotiated. Soufriere's soils are shallow and relatively young, including protosol, young soil, skeletal soil, and Soufriere (sulfur-rich) soil. These soils are usually shallow and prone to erosion. They are, however, excellent soils in which to grow foodstuffs. These soils contain rich nutrients, including phosphorous, and drain well. As such, with sufficient rain, they have the potential to be fertile.

Portsmouth's enclave contains rich agricultural soil and abundant freshwater sources. Most of Portsmouth is low-lying and relatively flat. Today, most of the land is devoted to active cultivation (approximately 60 percent), or comprises submontane rainforest (25 percent), urban development (10 percent), or mangrove swamp (15 percent). Groundwater is plentiful, with a number of freshwater and sulfur springs. Three river-systems with tributaries feed fields and people within the enclave. In the wet season, rivers agitate sediment, while during the dry season they can become murky, creating pools of stagnant water. Rivers were diverted to create aqueducts that fed small reservoirs to control water flow to millraces and to water mills to crush sugar. Most villages were less than 500 meters from these reservoirs and races. The land in this enclave contains alluvium, smectoid soil, and kandoid latosol. Water drains poorly through these latter two soils, and the natural fertility of the soil is low. The combination of a shallow soil that is susceptible to hardening during the dry season with poor water drainage during the wet season means that erosion is a constant threat. They are, however, well structured soils and have good water- and fertilizer-handling capacity. Importantly, this soil is good for growing sugar cane, but only when fertilized.

This diversity is important because it speaks to the amount of land, the type of soils available, and how people conceptualized their potentials for export and subsistence agriculture in the eighteenth century.[105] Different environmental and landscape conditions favored certain export crops. The uplands and highlands favored coffee, and forests favored cocoa, while sunny and well-drained areas were preferred for sugar.[106] Certain crops, like plantains, cotton, indigo, and tobacco, were more flexible and often constituted a first stage in plantation

development.[107] Other crops, including coffee and sugar, were far more particular about soil conditions and the amount of water they would need to thrive. The soils interacted with these biomes in important ways. The lowlands of Portsmouth required fertilizer and drainage to cultivate sugar. The uplands of Soufriere required methods to stabilize the soil and retain its moisture content to grow coffee and sugar. Ultimately, some soils in Dominica more readily accommodated the desires of Europeans to grow commodities for export. Others could not bear them. Both were subject to the attention of plantation owners to bend the soil to the purpose of sugar.

This diversity is also important because it speaks to the different predicaments of water abundance and scarcity that new residents (enslaved and freed) would face when sugar was introduced. Plantation settlements and houseyards were our units of observation. Plantations are often defined, functionally, in terms of what they produced and how they served as a social institution.[108] Houseyards are often defined descriptively, containing houses and the small gardens attached to them. As I will describe in the next chapter, they both constitute an assemblage. Sidney Mintz, for example, defines a houseyard, "as a setting for daily activity" where "decisions are made, food is prepared and eaten, the household group—whatever its composition—sleeps and socializes, children are conceived and born, death is ceremonialized."[109] As an archaeological deposit, they offer a readily comparable set of information that allows us to determine substantive differences and similarities in material practices during the "sugar revolution."

Conclusion

In small-island colonial contexts it is easy to imagine a homogenous past. But given the intensity of interaction that accompanied the agrarian transition on small islands, the past becomes politically and economically complex. The sugar revolution created predicaments throughout the island in different ways. The two enclaves profiled here reveal differences in landscape transformation and water scarcity, the hydrosociality of trade and mobility, and material dispositions of residents and the politics of belonging. These reflect the varying degrees to which the sugar revolution brought about competing agendas of production and reproduction. The recovered evidence begs the question: given the same economic and political constraints, do waterways of laborers living on estates in different "waterscapes" look the same?

Properties

CHAPTER 2

Mapping Caribbean Waterways

> Dr. Fillan gave Mr. Andrew Smith Priestley's reputed machine for impregnating waters—He appears to think very much of it but very little of its application.
>
> —Journal of Jonathan Troup, August 3, 1789

In Troup's first few weeks, Dominica looked as though it was a colonial venture with a stable society (figure 2.1), functioning without threat of insolvency, whose populace thrived in the lush environment. The mountain forests, the bustling port town on the water's edge, and the orderly plantation fields between the two were misleading. Morning rains that fell almost like clockwork had given him the mistaken impression that water was everywhere. Water was not always abundant, and for those who did not own land its access was not guaranteed. Precipitation could vary significantly. The leeward slopes, just north of Roseau, were in rain shadow for most of the year. Groundwater also varied in quality. Wells dug close to the shoreline could become brackish in high tide, and many springs on the geologically active island were hot and contained elements of the earth that made it less than palatable. Surface water found in rivers and ponds could also vary. While the island is the putative home to 365 rivers, only one of those rivers, fed by sulfur springs, flows in the Parish of St. Mark. In Dominica, there were many types of water.

Water, a kind of material, mattered for those forced to enact the plans of English-speaking elites in eighteenth-century Dominica. In the above passage, Troup and his colleague Mr. Kemp are excited about a new instrument devised by Joseph Priestley, who was one of the preeminent chemists of the time. In his book, *Directions for Impregnating Water with Fixed Air*, Priestley provides a detailed account of how to add bubbles to water. As a physician, Troup was familiar with the book and its findings. While instructing the reader on the art of making carbonated water, it also described qualities of water and how those qualities could be changed. In the appendix, for example, Priestley describes a

FIGURE 2.1. Roseau, Dominica, drawn by Lieut. Caddy, Royal Artillery, and engraved by J. Harris. 1837. Hand-colored engraving. 255 × 330 mm. Courtesy of Library of Congress.

"decoction of a Peruvian bark," most likely the same used in quinine, to alleviate the symptoms of "fever, loose stool, and immoderate thirst."[1] What this book makes clear is that water was not just a natural substance. It could be crafted in a way that could transform its qualities. That said, people had been crafting water for years before Priestley came to the scene.

Water was both fluid and entangled with the environment, and was a key predicament of slavery. In the context of eighteenth-century slave colonies, people living on plantations were often challenged to obtain water to drink, irrigate their gardens, wash themselves, and cook their food. Some of their creative methods to get water were passed from one generation to the next. Others were borrowed from strangers whom they met for the first time in the Caribbean. Still others were improvised by undocumented inventors struggling to resolve the predicaments they faced in everyday life. These waterways stretch back in time, before the poorly documented date when strangers from across the ocean met on this island. They extend out to the cultural attitudes that people held on

those distant shores from which the strangers came. They anchor down immediate and concrete, such as where precipitation and soil conditions inform the availability of groundwater for cultivation, and metabolic and household needs. They gesture inward to the nearby and particular concerns that informed how strangers dealt with each other when they met face to face. The emergent waterways variously inscribed themselves into the landscape, household assemblages, and the way people talked about them.

Caribbean Waterscapes

A crucial element of waterways is the waterscape they inhabit. Typically, "waterscapes" include water and how people's relationship with and through it shapes life on land.[2] Waterscapes are an important part of the waterways through which people framed their lives. Anyone who has spent significant time in the Caribbean is forced to consider water as a central factor in everyday life—both in its scarcity and in its abundance. As with most regions situated between the Tropic of Cancer and the Equator, its climate is structured by dry and wet seasons. Droughts and hurricanes, while irregular, are not infrequent. Such events punctuated everyday life in terms of the food that grew, the water that people drank, and the degrees of freedom people had in moving about the landscape. As such, water was something people managed but never resolved. People's relationship with water reaches to the distant past, when they first entered the region and brought or developed new practices and ideas of how water could be managed. Analysis of waterways sets the stage for understanding colonizing narratives, including those that shaped colonial policies and distant markets, and the implications of these narratives for enslaved Africans and the people who claimed ownership over them.

Those familiar with the Caribbean know that the islands are a living landscape. The environment is not a pre-existing condition altered through the plans of English-speaking elites. Rather, relationships evolve with and through the environment. Certainly, there is a kind of agricultural intensification of this land that accompanies settler colonialism, where the indigenous frontier is "improved" in the minds of Europeans to commercialize its resources into commodities such as silver, sugar, and cotton.[3] But to describe the world in which Europeans entered as a "First Nature" would be to overlook the millennia of world-making that islanders had already accomplished.[4]

When Dominica was intensively settled by Europeans by the mid-eighteenth century, the landscape had already been modified by human settlement and land

use.[5] For a newcomer like Troup, the landscape he entered might have appeared wild despite millennia of humanization that shaped soil, biodiversity, and even climate. To be precise, humans entered and began to manipulate the insular landscape more than 6,000 years earlier. They and those who followed precipitated the extinction of a host of species, introduced others, and shaped the land through trees they felled, soils they modified, and plants they cultivated. Of course, the physical geography of the insular Caribbean also had important implications for relationships of people with and through water.

Wayfarers entering the Caribbean encountered a region rich with land and sea resources, some of which were vaguely familiar to those they had seen in South America. The sea contains several island chains that are typically separated into four major groups: the Greater Antilles, Lesser Antilles, Bahamas, and those adjacent to the South American mainland, including Curaçao, Bonaire, and Aruba. The 115 islands (not counting islets or cays) comprise approximately 240,000 square kilometers—roughly the size of the United Kingdom. Most of that landmass (95 percent) is the Greater Antilles. Cuba, Jamaica, Hispaniola, and Puerto Rico have large interiors, long rivers with wide valleys, and diverse landscapes that approximate those on the continents that surround the sea. Then and now, these islands were home to larger populations that could be supported on terrestrial resources, though not exclusively. The Lesser Antilles are smaller, with a total land mass just under half the size of Hispaniola. These islands contain far less diverse landscapes compared with the Greater Antilles, though they can look quite different from one another. Given the smaller interiors, their denizens relied heavily on a combination of maritime and terrestrial resources.

The terrain on which people lived looked different depending on the island they lived on. In this tectonically active region, earthquakes and volcanic eruptions can dramatically change the amount of land, its relief, and the resources that it can afford. Caribbean islands can be broken down to fault block, carbonate, volcanic, and mixed islands. In the Greater Antilles, mountains forming Cuba's Sierra Maestra, as well as the central spines of Jamaica, Hispaniola, and Puerto Rico, are extensions of mountains found in Belize and Guatemala. This chain was formed from the vertical displacement of land at the fault line of the Caribbean and North American plates. As such, many of these fault-block islands are prone to earthquakes. The majority of the Lesser Antilles belongs to one of two overlapping and parallel island arcs. These arcs were formed from the expanding Atlantic plate and the subduction of the South American plate underneath the Caribbean plate. The older, outer arc begins with Anguilla and St. Martin and extends in an irregular shape through to Grand-Terre and

Marie-Galante in Guadeloupe. These islands are characterized by low relief and carbonate bedrock formed from marine reef deposits on sunken islands uplifted or left stranded by receding sea levels.[6] The younger, inner arc begins in Saba and continues through Basse-Terre, Guadeloupe, and Grenada. These islands contain steep mountains, narrow valleys, and much less in the way of flat land.

The terrain that people entered continued to evolve. The Kalinago, an Arawaken-speaking people whose ancestors saw Columbus' caravels on his second voyage on Sunday, November 3, 1493, call Dominica Wai'tu Kubuli. This roughly translates to "tall is her body." It was given this name principally for two reasons. For people who lived on this island, "The earth was an indulgent mother who furnished them with all things necessary to life."[7] The mountain ranges that form the spine of these islands are, for the most part, extinct or dormant, including Dominica's five peaks. Kalinago ancestors experienced tremors, earthquakes, and eruptions, which would have reminded them of the earth's active and sentient nature. Sometime between 340 and 420 CE, the southernmost volcano in Dominica erupted, burying one of the villages documented by archaeologists on the island.[8] The same volcano erupted more than a thousand years later, between 1410 and 1590.[9]

No eruptions have been documented in Dominica since Europeans arrived in the sixteenth century; however, the region is still active. To the north, Montserrat experienced a devastating earthquake in 1995. In 1902, Mount Pelée in northern Martinique erupted with an explosive pyroclastic flow that leveled the town of St. Pierre and hurled massive stone boulders several meters from their perches. For some time, Pelée had been active. Relatively minor eruptions occurred in 1792, and in 1851 an eruption deposited a fine ash lens. In this way, the islands continue to be a living landscape that shapes everyday life.

The geological history is important because it informs, indirectly, the amount and kind of precipitation as well as the amount and volume of groundwater. Not all islands offer the same relief, and this topography affects the intensity and location of rainfall. Climate specialists generally talk about three kinds of precipitation: cyclonic, convective, and orthographic. Cyclonic precipitation results from high-energy events, including tropical waves, tropical storms, and hurricanes. This typically heavy rainfall is accompanied by high winds. People living in Dominica encountered hurricanes more frequently than islands to the south and less frequently than islands to the north. Convective precipitation falls when moist air is warmer than its surroundings. Relatively short in duration, intensity varies depending on the speed of the wind, the differences in air temperature, and the moisture content of the atmosphere. In Dominica,

convective rainfall can happen with some regularity in the wet season. In the dry season, precipitation can be quite negligible. Orthographic rainfall occurs when moist air, near the surface, is forced upward into cooler layers of the atmosphere when prevailing winds reach tall mountains. Moisture in the atmosphere is released. The regularity and intensity of rainfall has changed since humans first arrived on the island.

Precipitation informs both surface and groundwater availability. Groundwater that permeates into the soil and porous rock varies considerably. Layers of the soil saturated with water are the land's aquifer. The barrier between saturated rock and the nonsaturated rock above it is the water table. These water tables are rarely horizontal and often reflect the topography of the underlying geology. Different geologies have different levels of porosity and permeability, which means that water does not move around the same way, nor is it captured to the same degree. Carbonate bedrock, found in both the outer arc islands and Barbados, is both permeable and porous, leading to significant aquifers that feed springs or can be reached by digging wells. Weakly cemented volcanic ash, which underlies many of the dispersed soils in the inner arc islands, is permeable but has low porosity. This means that it drains well but cannot capture the water. "Perched" water tables can form, but only when the underlying rock is impermeable, creating subterranean basins. The water generally drains laterally from these basins into springs (Fr. *source*). In some cases, these interfaces are near active volcanic zones creating hot springs (Fr. *soufrière*). Aquifers are recharged through precipitation. Therefore, the depth of the water table can lower during dry seasons, or droughts, or if more water is being removed from the aquifer through wells than rainfall is able to recharge it.

The vegetation present can also affect the amount of groundwater. A combination of plants with shallow root systems and intensified precipitation cycles can lead to soil erosion, destabilizing permeable layers of soil that contain water. Monoculturing plants in areas where aquifers need constant rainfall to recharge can have the effect of lowering the water table and putting plants and animals in competition for the same resource. Plants are not agnostic when it comes to aquifers. Take, for example, cotton. It prefers "dry feet." That is, cotton prefers to grow in areas with a well-drained soil where the aquifer is relatively deep.[10] Other plants are more tolerant. Rice yields do not suffer as much from having waterlogged soils.[11] Sugar cane is somewhere between the two. Yields increase significantly when the water table is deeper than sixty centimeters.[12] In Dominica, where plants in some regions rely on perched water tables, new relationships between water, soil, and plants that accompany some crops could create new kinds of groundwater scarcity.

Landscape

Thinking about how humans related with and through water invites us to extend our scale of inquiry in time and space to consider the five-thousand-year history of settlement in Dominica. If we consider the important work on paleoenvironment in the region,[13] evidence collected by archaeologists, geographers, and environmental scientists provides a general picture of sea level rise. While such general data omits a more nuanced local picture of how coastal erosion, vegetation, and maritime animal communities shaped and were shaped by new coastlines,[14] there is consensus that Caribbean sea levels have risen during the past ten thousand years.[15] Climate is also thought to have changed enormously over the past ten thousand years—the Caribbean was once a much more humid place.

Humanization of the Caribbean began sometime around 5000 BCE. The exact path is of some dispute. Traditionally, archaeologists described an early eastward migration of people from Mesoamerica into Cuba, made possible by an archipelago that existed from the coast of Nicaragua to Jamaica (the Nicaragua Rise).[16] As relative sea levels rose through the Holocene, many of these islands and shelves were submerged, most disappearing between 3000 and 2000 BCE.[17] Simultaneously, people migrated northward from South America using the Lesser Antilles as stepping stones.[18] Archaeologists suggested this dual-path hypothesis to explain two seemingly discordant observations. First, the earliest human-made materials have been, by and large, recovered from the Greater Antilles. Second, canoe traffic was easier using the lesser Antilles as stepping stones. Recent research and reporting placing the earliest sites in the Caribbean's northern islands and its southernmost islands has shifted our understanding of the humanization of the Caribbean.[19] Computer modeling suggests a third pathway, where early South American wayfarers entered into the Caribbean near Curaçao and followed strong sea currents northward into the north Caribbean, bypassing the Lesser Antilles. People then moved successively southward.[20] While which of the pathways may be debated, it's clear that sea levels, currents, and the skill of the Caribbean's earliest inhabitants to navigate them were all key factors in the islands' humanization.

When humans began to occupy the Lesser Antilles, sea levels were still rising and the climate may have been in a particularly wet phase of the region's history.[21] The fluctuations in sea level challenged these distant ancestors and required resolution through the choices they made in locating their settlement, the way they made a living off land and sea, and the architecture they lived in. But so would changes in weather. Archaeologists suggest that El Niño prompted

a series of droughts with which people had to contend.[22] The annual cycle of hurricanes also challenged everyday life for the early migrants. While hurricanes are a fact of life, when and where they reach landfall seemed unpredictable. Hurricanes threatened settlements with flooding.[23] In some instances, settlements were built on artificial mounds to protect communities against tsunamis and heavy storms.[24] People began to reinforce their housing with seemingly redundant poles. These structures show a degree of resilience and planning for the high winds and heavy rains.[25]

The cycles of dry season and wet season were crucial for successful harvests among the horticulturalists that moved into the Caribbean beginning in the late BCE and who continued to occupy the islands through the subsequent centuries.[26] Slashing and burning areas of forest too early meant that the seedlings and tubers withered and died. Too late meant that preparing soil was more difficult, and immature tubers and seedlings rotted before taking root. The North Star, the Pleiades, and Ursa Major were all constellations whose position could be used to predict the annual cycles of precipitation.[27] Charting the stars was not just a matter of tracking the days. It was part of a complex cosmology in which rain and sunshine had both constructive and destructive elements.[28] It is clear that water figured prominently in settlement decisions for people in the Caribbean. It is also clear that people were not just reacting to the environment, but trying to account for climatic variation and plan for the vagaries of water differences in the islands they settled.

Mobility

The long-term history of human-environment interactions also allows us to make crucial points about the perceptions of geography that newcomers—including the islands' first nations, European colonizers, and foreign researchers—brought with them. The Caribbean on the eve of European conquest was a "cultural mosaic."[29] Its people held varying customs, organized through surfeit political institutions, and made a living on a range of environmental engagements.[30] The same could be said for the people who inhabited the coastal villages of Barbados, Grenada, St. Vincent, St. Lucia, Martinique, or Dominica as early as 400 BCE.[31] By CE 1500, shared styles of Cayo pottery in the Eastern Caribbean islands and the Koriabo style in Guyana provide the most direct evidence of durable circulations of people, animals, and things through raiding, trading, and intermarriage. Studies of the fabric that makes up these pottery traditions suggest that these clay objects recovered from the Eastern Caribbean are strongly affiliated with contemporary ceramics recovered from Guyana.[32]

A map of the Caribbean drawn by a Kalinago in the sixteenth century included the South American mainland. James Ley, the Duke of Marlborough, describes a map of that world: "The Carybes have tenn Rivers. . . . And one other little Iland . . ."[33] This map includes rivers like the Macouria, Kourou, Suriname, and Coppename in Suriname and French Guyana, as well as the islands of Dominica, St. Vincent, St. Lucia, and Grenada. In 1596, Lawrence Keymis explored the South American littoral coast and traveled the Orinoco Delta. He stated that the nation of *Iapios* on the mainland spoke the same language as the people of Dominica.[34] This geography maps well to what archaeologists know about the migration of people into the Caribbean and the continued circulation of people and goods in the millennia that preceded European colonization.[35]

This map differs significantly from the one that would be drawn by English-speaking elites at the conclusion of the Seven Years' War in 1763. For pamphleteers and cartographers working in the lead-up and aftermath of the peace, Eastern Caribbean islands shared a geographic affinity with North America, especially the colonies that would putatively benefit from their inclusion into the empire.[36] This discourse naturalized political and economic sinews that circulated foodstuffs such as rice and wheat—grown in South Carolina and New England, respectively—that would be used to feed the enslaved labor force, which cultivated and processed botanical commodities for elsewhere. Kalinago construction of territory did not configure easily with land or territory as understood by the Europeans. This is not to say that the Kalinago did not distinguish between islands.

Literary sources, including Père Raymond Breton's *Dictionnaire Carraïbe-Français*, can be useful in establishing how people who called themselves Kalinago understood these geographies.[37] Breton (1609–1679) was one of four Dominican missionaries who established a mission for the *Frères prêcheurs* in the Eastern Caribbean. He arrived in Guadeloupe in 1635 and returned to France in 1653. He carefully transcribed indigenous words, commenting on taxonomies and semantics. Most accounts did not record these subtleties, nor document the cultural and social milieu in which they were used.[38] The source, therefore, has been invaluable in offering some clues about everyday life of the Kalinago and their ancestors. Breton records different names for the windward islands: *Caloucaéra,* or Guadeloupe; *Ioüánacaéra,* or Martinique; *Ioüànalao,* or St. Lucia; *Iouloumain,* or St. Vincent; and *Camáogne,* or Grenada.[39] Names aside, the Kalinago also shaped the islands in important ways.

There are historical implications for the diverse structural geology described in earlier pages. Different geologies meant that different islands had different

things to offer. Because of the differences in how and when these islands formed, and their different compositions of geological matter, similar objects made on different islands can look quite different from one another. Subtle differences in these parent materials were recognized by the Kalinago. According to Breton, there were stones for women, stones for men, and one variety of stone that was counterfeit. These stones would be sourced from different islands. Some stones, while not semi-precious, were similarly important for their use in manufacture. There were different words used by Dominican Kalinago for the pumice stone used in making canoe paddles.[40] Pumice stone from Martinique was called *méoulou*. Pumice stone from Marie Galante was called *cherouli*.

Archaeologists have used these subtle differences to mark interisland traffic in everyday objects, such as pottery used to store water on long canoe trips, or semi-precious stones that were readily found on one island but not others. Various materials circulated within and between the Greater and Lesser Antilles at different points in time, suggesting interregional trade. Ceramic, lithic, and *guanín* (gold-copper alloy) objects, as well as tools and ornaments of coral, shell, and bone, were brought to the Caribbean islands from the South and Central American mainland.[41] These included items of adornment made from armadillo, opossum, deer, and jaguar bone. There are also shell objects made from fresh water mollusks available only in Venezuelan river systems. Archaeologists have also found beads and pendants made of semi-precious stones that are not found on readily exploitable geologies of the insular Caribbean.[42] These include agate, amber, amethyst, aventurine, barite, carnelian, malachite, nephrite, and olivine. There is also strong evidence that shells of queen conch, *Eustrombus gigas* (commonly found in the insular Caribbean), were circulated sometimes as far as the hinterland of what is today Venezuela.

Waterways enabled similar material repertoires. The circulation between Guyana and the islands of Dominica, Martinique, St. Lucia, St. Vincent, and Grenada—the heartland of the Kalinago, and the home territory of people whom the Spanish would later identify as Island Caribs—was particularly dense. A robust trade in semi-precious stones—amethyst, quartz, and greenstone—brought Caribbean trade to life. It is becoming increasingly clear that some islands specialized in stones, while others in some other kind of good. Take, for example, petaloids found throughout the region. Petaloids are stone axes made of diorite, rhyolite, or basalt. These stones are not part of Barbados's ecology; therefore, the axes found there represent trade with regions where such stones were quarried. The petaloid as a trade good was likely one element in a complex system of social, political, and economic interaction.

This mobility shaped the Atlantic world, and there is a political-economic aspect to it. Early in Europe's engagement with the Eastern Caribbean, Indigenous peoples were important commercial and political actors. As stated earlier, in the sixteenth and seventeenth centuries, the Kalinago of Tobago produced a significant quantity of tobacco for the European market.[43] In Barbados, the English relied on the Kalinago of Dominica to supply cotton hammocks and arrowroot for their domestic and overseas markets.[44] Finally, the French, English, and Spanish relied on Kalinago expertise in local waterways for turtle fishing, navigating canoes, and waging raids against European adversaries. There is also a hydrosocial aspect to trade. Goods, including petaloids, coins, beads, and other items, were a medium of foreign relations that marked the connectivity between shores. Beads and coins carried with them certain expectations on the part of the Arawak-speaking peoples. Channels of water, in these instances, were far from a territorial boundary. Rather, they signified a connectivity between shores. This connectivity contrasted with European conceptions of channels and the barriers they thought they should signify. This fundamentally different view of space would continue to shape the circulation of goods well into the twentieth century, identifying some goods, no matter how mundane, as contraband.[45]

Everyday Uses

In his *Dictionnaire Caraïbe-Français*, Breton documented that the Kalinago had a highly complex taxonomy of water. Relationships with water in this document parallel some taxonomies found in English, but with some significant differences. The term *tona* can be used interchangeably for both river and water. As a liquid, it can be contrasted with *arágoni* (urine), *araógane* (sweat), *conóboüI* (rain), *inhali* (manioc juice), or *ira* (juice or liquor), among others. As a landscape feature, it can be contrasted with *acoúllou* (a pond, pit, or abyss), *balánna* (sea), and *icópoüi* (brackish pond). As a substance, water can be qualified. It can be a fishy river (*káricheti tona)*, but it can also be combined to create something other than the sum of its parts. The word *amoyen* means "cold," but, when used in combination with *tona*, means "fresh water." The prefix *bácha* signifies heat. When combined with water, *báchuetitona* can mean "stomach fluids" or "brackish water." *Inchiali* means to smell bad, but, but *inchiénli tona* means "saltwater" or "troubled water." Such terms are useful in reconstructing some of the taxonomies that might have been salient for the Kalinago during the seventeenth and eighteenth centuries.

Water could purify, but water is defined narrowly according to this taxonomy. Liquids holding these latent qualities must come from the river. The act of

bathing, *nicobi niabou*, was a way for water to wash away other kinds of liquids. Breton commented that every morning, Kalinago men "go to wash at the river (women and children go there at another time)," especially in the places where the river is "heated" from sulfur springs. He goes on to say, "If they are wet with seawater, rain, or if they are dirty, or if they are too hot from some work, they return to wash."[46] From this description, we can surmise that different qualities of water mattered for the Kaliango; though we cannot assume that baths were required for the same reasons, Breton describes these qualities in relation to health. Work brought about *araógane* (sweat). Seawater did carry with it a connotation of dirt. Rain might chill the body too much.

Water carried important symbolic significance. For example, children referred to the wife of their father who was not their mother as their *noucouchoutonarou*. This roughly translates to "my mother by water." This presumably references three aspects of Kalinago kinship: first, that consanguinity, relatedness by blood, did dictate some of the terms under which family was constructed; second, that family structure was polygamous; and finally, that many of the members of the family were brought in from other places by canoe. Objects in a landscape are important elements in understanding such taxonomies. A clue to the ritual significance of water and precipitation in early- and late-ceramic ages are etched into portable objects and stationary rock surfaces. Take *Atabey*, the frog lady. She is one avatar of the apical female deity of Taino cosmology. She is also the mistress of the wind and the destructive force of hurricanes. The location and alignment of petroglyphs reveal that their carving was a largely political act: aligning living descendants with ancient ancestors of a particular deceased cacique or cacica (master or mistress).[47] Rock art depicting frogs has been found throughout the Windwards, including Grenada (six instances), St. Vincent (thirteen), St. Lucia (five), Martinique (three), and Guadeloupe (twelve). The presence and frequency of rock art could be an indication of anxiety over water security and the attempt to control it through spiritual means.[48]

Recurrent themes of this art—the fruit-eating bat and the tree frog—reflect Kalinago concerns about the annual cycles of precipitation and its ritual management. The coquí, or tree frog, "comes from beneath the surface of the water" and is linked to the destructive hurricane season. The fruit-eating bat "lives out of the water . . . and is a dry animal" linked to the equally destructive dry season, when many islands can best be described as a green desert.[49] Petitjean Roget argues that these two motifs reflect attempts on the part of ritual specialists to influence the regularity and intensity of dry seasons and wet seasons. He argues the rock art is in areas where people would want to ensure the safety and security

of water sources. On dry islands, like Anguilla, petroglyphs are located near one of the few water sources on the island. In the Windwards, petroglyphs tend to be located on boulders in riverbeds where annual cycles of wet and dry seasons affect the safety and security of the water. By extension, the fact that only one example of rock art has been recorded in Dominica might mean that the Kalinago felt more water secure. Following this line of reasoning, one of the reasons so little rock art exists on Dominica is that water was rarely scarce, even in the dry season. This had less to do with its management and more with the capacity of the land to hold groundwater in perched water tables and deep aquifers.

One can look to everyday objects to see how people might have captured fresh water from precipitation in locations where there was no groundwater or surface water available to drink. As described above, fresh water was not always abundant on islands. On the drier islands on the South American littoral, surface water can be difficult to locate. Queen conch shells, turned upside down, were used to harvest rainwater.[50] On beachfronts, harvesting water can be further complicated by the introduction of seawater into the water table. We know the Kalinago had this problem, since they used a specific term for pond water created through permeating saltwater (*icópoüi*). One strategy was to construct a cistern by burying pots without bottoms, stacked one on top of the other. The walls of the pots acted as an impermeable layer against the surrounding soil. As rain fell, it collected in the basin created by the pots with little contamination from the surrounding soil. This ingenious system relied on water density to make fresh water. The water in pots, while shallow, separated into layers. Fresh water coming from the rain and surface contained little salt, thus having less density than brackish water in the soil or saltwater from the sea. Less-dense fresh water floated on top of denser salty water. The brackish water in between the two separated the saltwater and fresh water. This added to the fresh water on the column's surface.[51]

Features such as these highlight the inventive strategies that the Kalinago employed to make drinking water. More important, they also materialize a taxonomy about water that the Kalinago held. In this case, the relationship between objects reflected a taxonomic distinction between fresh water (*amoyenti toana*) and seawater (*inchiénli tona*). *Báchueti tona*, brackish water, separates into both seawater and fresh water. What is remarkable about these labels is that they seem to be common in a very multicultural region. It might be, as some authors suggest, that such similarities emerge from a common source that grows different over time. It can also be the result of a different set of processes, in which people and ideas move between communities that speak different languages but share

common concerns. Like elsewhere in the world, Caribbean waters were both elements of the landscape that people took advantage of and the product of human ingenuity. By the time Europeans entered on the scene, water had been made in the Caribbean for more than three thousand years.

What Europeans changed is how it was made. These varied relations of humans and water, or waterways, have particular material engagements that provide a larger context in which to frame the glass bottles and kwaffes so common on eighteenth-century sites. As such, these engagements speak to an important point about waterways. Waterways are also a kind of assemblage.

Assemblages of Water

My focus on waterways surrounding the sugar revolution in Dominica builds on archaeologists' traditional concerns about water in relation to agricultural intensification, land management, and power. Water has been used as a foundation to study "management" linked to states and the consolidation of power.[52] Implicated with these very issues are the roles of infrastructure, the making of surplus, or a mode of agricultural production where humans, "reacting specifically to the water deficient landscape, move towards a specific hydraulic ordering of life."[53] One of the shortcomings of this approach to water control, land use, and power, is that it tends to assume hierarchical modes of production, where water infrastructure is evidence of political centralization, as in European states. Recent scholarship has begun to focus on the hydrosociality of waterways;[54] it juxtaposes the hydrosocial and the hydrological, emphasizing the sociopolitical as well as the biophysical processes that make water flow.[55] Waterways—including rivers, streams, and currents, they argue—are not simple ecological mechanisms that can be fully controlled by human institutions.[56] They stress that infrastructure comprises assemblages of human-environment interactions, providing a lens into how people and nature influence each other.[57]

Water is an assemblage of qualities. There is a firmness to water that makes it part of everything we know as humans. It brought to life the Atlantic economy as a source of power and a medium for transportation. It animated Caribbean landscapes as a basic substance essential for the metabolism of plants and animals. It is also an important agent in crafting the objects and subjects of everyday life. Recognizing the different types of water and how people used them can be quite difficult. Water is always on the move. As matter, it is subject to natural forces. Gravity makes it flow downhill. Excessive heat causes it to evaporate. The cooling of humid air causes it to fall as precipitation. Water also moves between

bodies as part of metabolic processes. It is in the vegetable matter that humans eat, the urine and feces that human excrete. From these substances, water seeps into the soil and streams from which we drink. It also moves within and between the types of water we use. Therefore, we must pay special attention to the historical and social contexts in which categories of water are created. Approaching water as a cultural substance moves our analyses beyond environmental reconstruction to interpretations that explore the relations between humans and the environment through the many social, cultural, and ideological uses and meanings of water.

Animating Landscapes

Waterways are not accidents of nature. Dominican waterways were created through the ingenuity of human beings wishing to move, contain, and use water. Paraphrasing Matt Edgeworth, waterways are an entanglement between nature and culture, where both the water's form and its flow trouble distinctions between the two.[58] Humans settle adjacent to rivers, oceans, and seasonal creek beds, and this was certainly the case when they entered the Caribbean three thousand years ago. Written this way, waterways are not often understood as material culture. Yet if you think about material culture as "those aspects of the environment modified by human interaction," as Jim Deetz suggested, most waterways can be described as a kind of material culture in that they are shaped by human interaction.[59] Canals can be cut, river banks can be modified, and even ocean currents can be interrupted by decades of production based on the burning of fossil fuels. As material culture, waterways are uncooperative ones, in that their materiality, which makes them so useful for human purposes, also makes them difficult to manage, control, or regulate. Water flows.

Attending to the made-ness of waterways concentrates archaeological examination on landscape and its modification over time. Water is necessary for people to make a living off the land. Whether it is in the domain of agriculture, horticulture, or raising herds of domesticated creatures, water is essential for the metabolism of plants, animals, and even the microbial biota that make up the soils of the earth. It is the principal constituent of life, composing 85 to 95 percent of most plants and 60 to 80 percent of most animals. It facilitates the chemical reactions that convert substances into energy, and vice versa. Water is also a medium of transport, moving nutrient-rich soils across distances to restore the capacity of soil on a plot of land to grow foodstuffs. It also moves those nutrients found in the soil between bodies, soils, and matter. In the absence of water, plants, animals, and microorganisms will die. That said, some organisms

do better in some environments than others. For example, too much moisture contributes directly to deterioration of fats, vitamins, flavors, and colors within foods through the work of enzymes. Moisture allows molds and other microorganisms to grow on the surface of an organism, further contributing to increased decay.

Landscape features, infrastructures, and terrain modification are venues to explore food production, social lives, and the polities that employ them.[60] Here, water infrastructure is physically integral to political processes, rather than just a means of water accumulation.[61] While identifying the types of infrastructure is important, understanding them as part of a larger network of water is essential. "Natural" features such as aquifers, rivers, springs, and ponds can be shaped by human action. Watercourses can be modified, ponds can be enlarged, and aquifers can be overexploited by planting crops that require more water than can be recharged through precipitation. Landscape features also include "cultural" features. Wells can be dug to take advantage of aquifers that are hard to reach from the surface. Soils can be moved from one place to another and retained by walls of stone or earth to elevate fields. These can be arranged on mountain slopes to create terraces or along coastal plains to create raised fields. Canals can be dug to distribute water to areas in which there is little, or away from areas in which there is too much. Water in streams and canals can be diverted by weirs. It can also be dammed with dykes, creating large catchments of water. Some of these catchments can be found downstream as tanks to feed people, others can be found upstream to create reservoirs.

Such infrastructure continues to exert influence, well after those who designed it. Take the historical ecology of water in the Basin of Mexico.[62] Perhaps because of the prominence of canals in early depictions of the Aztec capital, Tenochtitlan, encountered by Bernal Diaz and Cortés, or the sheer size of the cities they supported in the classic (Teotihuacan) and post-classic (Tenochtitlan) periods, irrigation and water control in the Basin of Mexico has been one of the more thoroughly examined cases of raised field agriculture in the Americas. The transition from the semi-mobile food-growing hunters during the pre-classic period, to the rain-fed and minimally irrigated crops of the urbanized and hierarchical world of the classic period, would not have been possible without major changes in the control and use of water. These changes were both technical—with the development of canals, dykes, and causeways allowing for the more effective containment and redistribution of water—and social-cultural—reflected in, for example, linkages between legitimate rule and the provision of irrigation water, and in shifting diets and food practices.[63] The operation of political and

social power was (and to a great extent still is) bound up with the control of and access to water. This, however, has clearly been a long-contested domain and an arena for conflict and negotiation—cultural as well as political and economic—rather than the exclusive province of a centralized elite.[64] These relations did not change abruptly when Spain usurped control, nor were they changeless in the wake of face-to-face interactions with other displaced peoples. To describe the hydrosocial requires documenting the many relationships that humans have with water and how those relationships are framed.

Caribbean water systems introduced to grow and process sugar cane were borrowed from Mediterranean shores, especially those controlled by Muslim polities in the Levant, North Africa, and southern Spain.[65] Cane cultivation and processing was, in turn, influenced by hydrosocial relations in South India. Crops grown in this arid landscape include "thirsty" plants like sugar cane, rice, and fruit.[66] Farmers also grew millet and legumes that required less water and different strategies of investment in irrigation. Annually, the area receives less than 500 mm of rain, the majority of which falls during the monsoon. Outstanding examples of waterworks were engineered in the region. Canals, reservoirs, and wells were built to meet the needs of farmers to water their fields and feed themselves. Some of the reservoirs were filled by canals fed by rivers. Other reservoirs relied on precipitation and runoff to fill their hold. Some of these were solitary tanks; others were linked through a network of tunnels controlled by stone sluices. In Dominica, planters wishing to build sugar plantations had to transport water across distances to power sugar factories and move water from places where there was an abundance of water to places where it was scarce. As in South Asia, this included a system of catchments, waterways, and dykes. If one were to focus only on aqueducts, it would appear as if control of water were highly centralized. Yet, together with other landscape features, we see a host of management strategies in which ordinary farmers exercised planning and control over water and its distribution.

The plantation indexes just one of many relationships between humans and water in the Caribbean. Africans brought to Dominica had equally complex ways to manage water in order to promote cultivation. Intercropping and enhancing landscape features were strategies practiced by African farmers thrust into slavery. Though sometimes depicted as a state of "permanent cultivation" that is less elaborate than hydraulic systems that support monoculture, intercropping can support large urban centers, cohorts of artisans and merchants, as well as long-distance trade.[67] The retreating waters exposed clayey soils that could trap water in back swamps and ponds. Farmers sowed more land with

plants in close proximity that had different water tolerances, including rice and sorghum. To produce high yields, farmers enhanced the banks to create terraces that would hold water through the dry season. Farmers became adept at judging which crops would be suitable for these areas.

Judith Carney documented three different water regimes associated with rice cultivation in twentieth-century Guinea.[68] The first, used in drier climates, was a rain-fed system. The second, used in inland swampy areas, relied on groundwater collected from artesian wells, freshwater springs, and wells dug into perched water tables. The final water regime, used on tidal waterways and floodplains, had to retain fresh water and keep brackish and saline water from entering into fields. The floodplain system of growing rice required thorough manipulation of water flow through floodgates, canals, and ditches. These strategies involve planning that would calibrate the investment of time and labor in relation to variation in wetness and dryness of soil over the year. For those being thrust into slavery, there was no single water regime they brought with them to the Caribbean.

For farmers entering the Caribbean in the centuries before Columbus, constructing raised fields was a technique available to manage water.[69] Wetlands in the tropical Americas were, on the one hand, rich in fertile soils; on the other, those soils could be waterlogged.[70] In an environment that experiences both drought and flooding, growing maize (which prefers drier soils) and manioc (which prefers wetter soils) presented a particular challenge. Farmers on the Caribbean's South American coastline used raised fields to regulate water during annual heavy rains and dry spells, constructing small agricultural mounds with wooden tools.[71] These raised fields provided better drainage, soil aeration, and moisture retention. The fields also benefited from increased fertility from the muck continually scraped from the flooded basin and deposited on the mounds. The farmers limited flows, preserving soil structure and conserving soil nutrients and organic matter. While there have been no documented archaeological examples in the insular Caribbean, such techniques have been documented in contemporary Puerto Rico.[72] Given this and their use in deep history, it is not unreasonable to argue raised fields were one strategy farmers used to manage water.

In contrast to the massive irrigation works employed by Europeans to make land suitable for crops such as sugar, the modifications employed by Indigenous peoples and Africans may have seemed humbler. They were no less complex, requiring consideration of the time and labor to necessary to account for the soil's moisture variations over the year. These strategies involved calculations of risk about catastrophic consequences. Investment of time, matter, and energy did

not always yield in ways that the farmers had intended. Finally, these strategies required communal labor to create the earthworks responsible for retaining or draining fields. This included earthen ditches and embankments to drain water from fields, ponds that captured fresh water in the wet season and retained it in the dry season, alignments of stone that might act as dykes, and terraces with stone retaining walls that could capture or slow the movement of water downhill. These are the archaeologically visible features that reflect strategies of substance where water is concerned.

The Atlantic

Humans took advantage of natural waterways to traverse distances, cut across boundaries, and ship goods. Take, for example, work in the Mediterranean. Archaeologists have mapped the circulation of goods and ideas through economic networks, framed these circulations with geographic affordances, and drawn inferences about global entanglements—some of which could have extended into sub-Saharan Africa.[73] Along Caribbean waterways, peripheral flows were essential to placemaking.[74] Concentrating on moments when people from distant shores interacted forces an examination of the hydrosociality of the Atlantic, not only as a body of water bounded by continents, but also as an assemblage of currents that flow. This approach to landscape is particularly useful because it focuses on the connectivity of regions. Concentrating on the movement of objects and people along these networks allows us to interrogate some of the assumptions about territoriality and the movement of subjects across borders.

The Atlantic, like other areas of archaeological interest, is a region with a large number of niches for human exploitation.[75] It is, simultaneously, a profoundly uncertain environment where climate can be unpredictable. Since Atlantic microregions are diverse, the possibilities of each are different, and catastrophe in one will not affect all. So, for example, against the threat of a wheat crop failing in one place, insurance can be found partly in growing other grains such as maize or millet and, more importantly, in producing surpluses of goods that can be exchanged for grain.[76] Because of these features, from early on no economy in the Atlantic was merely a "subsistence economy." All crops could be cash crops or subsistence crops, depending on the circumstances of a particular year. Trade is not a sign of the modern world, but a feature of the many regions, like the Atlantic, that shaped trade's history. Foregrounding the diversity of microregions does not lead to a geographic determinism in which outcomes can be predicted. Rather, it opens up a world of possibilities, in which the sea becomes an interface for social organization. For example, the scarcity and abundance created

through uncertain climate conditions leads to a variety of different social strategies: redistribution of wealth, overproduction, or the spreading of risk among community members. These are considerations that shape the historiography of the Atlantic world.

The distance it takes to travel from one side of the ocean to another, political boundaries, and the restricted mobility of many, meant those residing in these settlements would not or could not ever meet. Yet their lives were all touched through the flow of goods on water. There is, however, one critical difference between the Mediterranean and the Atlantic. The Mediterranean is an enclosed sea. The Atlantic is not. The land masses that these bodies of water touched had their own waterways, which informed the goods circulated on Atlantic currents. Along the West African coast and its environs, African merchants employed an extensive network of waterways connecting—at least seasonally—an area stretching from the Volta River in modern Ghana to the Niger Delta, and possibly beyond.[77] These interlocked waterways, which later became "feeders" of the Portuguese-controlled slave trade, were organized by the Portuguese.[78] Textiles, glass beads, and copper goods were rare and prestigious items that had long been percolating in limited quantities from North Africa, besides other small production centers in Sub-Saharan Africa. Whereas the Portuguese and other early European actors of the trade thought of themselves as merchants, they actually plugged themselves into pre-existing networks that, from an African perspective, did not belong to the realm of trade, but foreign relations.[79]

The Atlantic is connected to a network of flows. Water flows in rivers along many ways.[80] On one end there is a tributary river system. Many small streams, rivers, and springs merge successively into larger waterways that eventually flow into rivers and then a sea. On the other end of the spectrum are distributary systems. Here there is a flow of water from a single source, primarily in one direction, to many different waterways. Goods circulated on this system can be a source of power. For people circulating on this flow, there are a limited number of paths to take, and at each point where decisions have to be made about where to move goods, they can scrutinize and control this flow. Many rivers have integrated systems: they contain a network of waterways that combine both distributary and tributary properties. In a tributary system, there are multiple sources of water feeding into one large waterway. These convergences are loci where goods and power are accumulated. In between these two endpoints are the braided waterways found in an integrated river system. Here there are multiple paths to get from one point to another, and none is easily scrutinized or controlled from a single point. As such, flow is a function of not only the hydrological but also the

hydrosocial: ports, ships, bridges, and other infrastructure. Both take advantage of the affordances described above and shape the flow, creating new pathways.

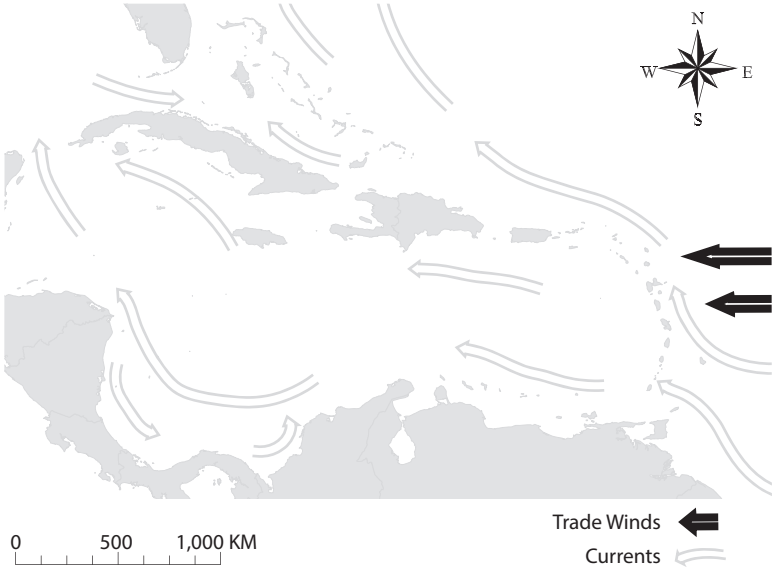
To a certain extent, the Atlantic Ocean can also be viewed as a river system. On the one hand, it is a tributary river system (map 2.1). The Eastern Caribbean island chain to which Dominica belongs was strategically located between North and South America, at the intersection of the Guiana Current and a circular waterway known as the North Atlantic Gyre. This gyre formed the main trunk of the river, so to speak, and comprises the North Equatorial Current, the Gulf Stream, the North Atlantic Drift, and the Canary Current. The Guiana Current is fed by the South Atlantic Gyre, comprising the Brazil, Benguela, and South Equatorial currents. The Eastern Caribbean is strategically located between North and South America at the intersection of two important oceanic currents. The Caribbean Sea is influenced by waters fed by the Guiana Current that move north along Brazil's coast, some of which flow through the Grenada Channel. This fast-moving flow is the Caribbean Current, which enters into the Gulf of Mexico through the Yucatán Channel. The majority of the flow moves around the Gulf Coast of the United States, flowing down along the west Florida coast before moving through the Straits of Florida to become the Gulf Stream, which moves northward through the Bahamas and along the eastern coast of Florida. On the windward side of the Lesser Antilles, waters caught in the Guiana Current are joined by those in the North Equatorial Current to form the Antillean Current. This current joins with the Gulf Stream near the Bahamas.

These currents have important implications for vessels traveling by sail or for human-powered vessels in the Eastern Caribbean. Winds and currents powerfully shaped this trade for sailing vessels. Sailing vessels from Western European ports found it much easier to sail westward after first reaching latitude 30° north, off the coast of West Africa. At the same time, there were other trade winds from the South Atlantic. These trade winds link the important slave-trading ports on the Bight of Biafra and Southwest Africa with the Americas. Trade winds would propel vessels westward, reaching the Caribbean rather than going straight to North America. Returning from the Caribbean and North America, it was easier to follow the Gulf Stream in a northeasterly direction, propelled by the wind pattern known as the westerlies. On the windward side, a strong and prevailing current moves water and vessels from North to South. On the leeward side of the islands, the general movement of currents in the Caribbean Sea is from east to west. Vessels wishing to move north found it much easier to travel on the windward side. Canoes and sail craft could take advantage of the strong current

heading north. The currents on the leeward side of the islands are much less powerful, and the winds were broken by the tall mountains of islands (at least in the inner arc island chain). This made southward traffic possible. Human-powered canoes would not have struggled against the Caribbean current.

Historical accounts allow us to understand the time it took to travel some of the distances between islands using smaller craft. Dominican priest Père Jean-Baptiste Labat (1663–1738) traveled to Martinique in 1694 and Guadeloupe in 1696, and returned to Europe in 1706, where he published accounts from his voyage.[81] He owned one estate, Fonds Saint-Jacques, where he developed new techniques and applied "modern" machinery to process sugar. During his assignment, he traveled by canoe in the region, visiting the islands of Dominica, St. Lucia, and St. Vincent. These large dugout canoes were made from gommier trees, ranged in size from twenty-nine to forty-two feet long, and, by the time Labat was writing, had been modified with the addition of two small square sails. He goes on to say that they could carry as many as fifty people and transport large amounts of cargo long distances.[82] According to his journal, travel time between neighboring islands was less than half a day's journey and could precipitate activity on a different island (map 2.2).[83] For example, one Jesuit missionary who lived in Martinique would travel to Grand Bay in Dominica every Sunday after giving mass in St. Pierre to supervise a plantation there.[84] Captains of sail craft would tack against westerly trade winds to move southward, though at some distance from the mountainous islands. Such flows profoundly shaped Caribbean history.

Eastern Caribbean islands were a geographic and economic interface. They had the benefit of strong winds and currents, which would facilitate interregional Atlantic trade with ports in Africa and North America, and at the same time an intraregional trade managed mostly by small dugout canoes and wind-driven sloops. In the early to mid-twentieth century, sailors would refer to proceeding northward from Barbados as going down-island—inverting what a North American reader might take for granted as directions in the flow of ships and goods. For human-powered canoes, the islands would offer shelter from the Atlantic's strong winds and currents. For smaller, more nimble sail craft, including sloops and vernacular watercraft, this enabled an intercoastal trade moving both north and south among the islands. Both canoes and sloops became important vessels in an interisland trade in goods and people that was an important part of the colonial economy. So, when Troup first arrived in the Caribbean at Barbados, it was not because that island was closer to Europe. Rather, it is more likely that the ship captain was accounting for prevailing winds and



MAP 2.1. Atlantic currents and trade winds shaping mobility in the Caribbean.

MAP 2.2. The Eastern Caribbean. Dotted lines represent the amount of time it took Père Jean Baptiste Labat to travel by canoe between islands. Using Labat's journal, Tessa Murphy was able to calculate transit time. See Murphy, *Creole Archipelago*, 33, footnote 32. Illustration by author.

strong ocean currents to first stop at Barbados and then move northward to other ports, with less resistance than if the ship had gone the other way. Dominica was critically located at the intersection of the gyre and prevailing wind patterns. For this reason, many early accounts of Indigenous people are located either in Dominica, Marie Galante, or Guadeloupe.

Everyday Life

Water created distinctions in everyday life. Sidney Mintz famously stated, "tobacco, sugar, and tea were the first objects within capitalism that conveyed with their use the complex idea that one could become different by consuming differently."[85] I extend this observation to water. For Cynthia Robin, the everyday concentrates archaeological focus on "ordinary places and objects" and their extraordinary role in human society. Viewed in this way, water is a crafted substance. Ordinary objects are used to store specific types of water. But sometimes objects don't just store types of water—they craft it. In some cases, water is crafted for the purpose of people using it. By mapping ordinary "water" objects in ordinary spaces, archaeologists trace how water "can socialize people into existing social relations and produce new social forms."[86] In this way, ordinary objects play a role in crafting people who use them. In crafting water, people also crafted themselves.

Archaeologists have increasingly attached cultural scrutiny to the categories they employ in describing objects as part of larger constellations of forces shaping everyday life. Archaeologists use the term "folk taxonomy" to label everyday understandings of the material world, found in all societies, that are revealed through analogical reasoning of the archaeological record. People use such taxonomies to classify the world around them without second thought. These are part of everyday common sense, and are subject to considerable affective and intellectual investment. Different taxonomies can be embedded in the same object. Thus objects, or in this case matter, are portable across taxonomic categories.[87] According to Zedeno, index objects "play key roles in ontological taxonomies because of their relational properties, in particular their potential for animating objects and places around them."[88] In other words, humans and nonhumans alike carry within them a certain latency that can be activated when they come into contact with each other.

Water is a particularly useful material to consider such taxonomies, as it moves between the categories that people use. As a "biophysical basis of reality," water is also subject to particular discourses about nature.[89] Attaching cultural scrutiny to objects, and to the categories we employ to interpret substances and

things, is at one level a taxonomic exercise. Our knowledge of taxonomic categories employed by people and their references to water organizes those objects in particular ways that provide a different sort of map of the world. Thinking through taxonomies asks us to consider what people thought water was, the distinctions they made between types of water, and the rules that governed the appropriate use for different types of water in different circumstances.

Categories that appear simple to ascertain are subject to the historical and cultural discourses in which knowledge about water is gathered: animate and inanimate, sweet and foul, or sacred and ordinary. Anthropologists have documented systems of belief where water was animate in and of itself. For instance, water spirits, some of which had antecedents in Africa, could be called on to act on someone's behalf, including for love, protection, and accumulating wealth.[90] As discussed below, some archaeologists have interpreted x-marked pottery associated with eighteenth-century Africans in South Carolina as a constituent of waterside spiritual ceremonies.[91] Pottery, charged with meaning, activated landscapes in which water was a crucial element.[92]

The categories foul and sweet are equally contingent. Dr. Henry A. Alfred Nicholls completed a report on yaws in the Windward islands in the 1890s. Yaws is a disease contracted by contact with others infected by the disease. While in Carriacou, Nicholls suspected the source might be drinking water "got from brackish wells, and muddy ponds wherein the surface drainage has collected."[93] Nicholls felt that the combination of laundry, human bathing, and the watering of cattle made these ponds "muddy, stagnant and foul."[94] According to original notes held by Lennox Honychurch, Nicholls interviewed one man who had spent two years in Grenada, where he had drunk the clean public water from the island's free flowing streams. This man complained Grenada's water "was too light," and he was relieved to be back in Carriacou, where the water "had more body."[95] For the townspeople of Hillsborough, the taxonomy of water was not contaminated versus clean, but light versus heavy. This difference in taxonomy had implications beyond the water itself. Whereas for Nicholls cattle contaminated the ponds, for the townspeople they were important to sealing the ponds so that a more flavorful water could brew. Nicholls claimed the villagers said that cattle were necessary: "cattle tread down and harden the muddy bottoms, and prevent the ponds from 'leaking.'"[96] Cleanliness or purity was not part of the equation of what made a good glass of water. Cows made it thus.

Contemporary illustrations map some of the vessels that slaves used to store types of water. In a visual database run by Jerome Handler and Michael Tuite,

TABLE 2.1. Historical illustrations depicting items and landscape features identified with water in the British and French West Indies

Source: *Slavery Images: A Visual Record of the African Slave Trade and Slave Life in the Early African Diaspora*

Vessel	Use	Year	Location	Title	Artist
Jar	Transport	1801	Antigua	Sugar Plantation	Nicholas Pocock
Glass Bottle	Drinking	1807–18	Barbados	Plantation Scene	John A. Waller
Goglet	Drinking	1807–18	Barbados	Plantation Scene	John A. Waller
Pond	Source	1830–40s	Barbados	Ashford Plantation	Anonymous
River	Washing	1770–80s	Dominica	Washing Clothes	Agostino Brunias
Bucket	Transport	1808–15	Guadeloupe	Cooking	Le Magasin
Calabash	Cooking	1808–15	Jamaica	Pounding Cassava	William Berryman
Barrel	Storage	1808–15	Jamaica	Thatched Rural Houses	William Berryman
Goglet	Transport	1808–15	Jamaica	Carrying Goods	William Berryman
Bucket	Transport	1808–15	Jamaica	Carrying Goods	William Berryman
Glass Bottle	Transport	1808–15	Jamaica	Carrying Goods	William Berryman
Goglet	Sale	1838	Jamaica	Water-Jar Sellers	Isaac Belisario
Jar	Sale	1838	Jamaica	Water-Jar Sellers	Isaac Belisario
Krish	Sale	1838	Jamaica	Water-Jar Sellers	Isaac Belisario
Goglet	Transport	1826	Martinique	Slave Quarters	Alcide d'Orbigny
Goglet	Drinking	1826	Martinique	Street Scene, St. Pierre	Alcide d'Orbigny
River	Washing	1791	Dominica	Washerwomen	Agostino Brunias
Biot jars	Storage	1824	St. Vincent	Sugar Plantation Yard	Anonymous
Glass bottle	Sale	1830s	Trinidad	Sunday Marketing	Richard Bridgens
Calabash	Divination	1836	Trinidad	Discovering a Thief	Richard Bridgens
Calabash	Transport	1836	Trinidad	Woman Carrying a Child	Richard Bridgens
Calabash	Transport	1836	Trinidad	Plantation Field Laborer	Richard Bridgens
Bucket	Serving	1836	Trinidad	Sugar Cane Cultivation	Richard Bridgens
Calabash	Transport	1836	Trinidad	Sugar Cane Cultivation	Richard Bridgens
Calabash	Transport	1836	Trinidad	Punishment in Stocks	Richard Bridgens

TABLE 2.1 *(continued)*

Vessel	Use	Year	Location	Title	Artist
Source: Carmen Thyssen-Bornemisza Collection					
Pitcher	Serving	1770–80s	Dominica	Creole Woman and Servants	Agostino Brunias
Glass Cup	Serving	1770–80s	Dominica	Creole Woman and Servants	Agostino Brunias
Bucket	Transport	1770–80s	Dominica	Caribbean Women in Front of a Hut	Agostino Brunias
Bucket	Washing	1770–80s	Dominica	Caribbean Women Indoors	Agostino Brunias
River	Washing	1770–80s	Dominica	Three Caribbean Washerwomen	Agostino Brunias
River	Source	1770–80s	Dominica	West Indian Landscape	Agostino Brunias
Jar	Transport	1770–80s	Dominica	West Indian Landscape	Agostino Brunias
Source: Journal of Jonathan Troup					
Bucket	Transport	1789	Dominica	Water	Jonathan Troup
Barrel	Storage	1789	Dominica	Water	Jonathan Troup

SOURCES: *Slavery Images: A Visual Record of the African Slave Trade and Slave Life in the Early African Diaspora;* Carmen Thyssen-Bornemisza Collection; and the Journal of Jonathan Troup.

twenty-five images, created between 1760 and 1840, depict features and material culture associated with water distribution or use in the Caribbean (table 2.1).[97] While it is dangerous to use such images literally, contemporary paintings in published and unpublished manuscripts indicate that slaves captured, transported, and consumed liquid through a variety of vessels made of different materials. Broadly speaking, enslaved laborers on plantations employed water for three purposes: washing, cooking, and drinking. Surface water, including rivers and ponds, was used for washing clothes and bathing. Leather and wooden buckets, barrels, and jars were used to transport groundwater or surface water for use and, in some cases, sale. Buckets, barrels, and jars also stored water that would later be used for cooking and drinking. Gourds, earthenware pitchers, and glass bottles stored, transported, and served drinking water.

Crafting Water

These vessels didn't just store types of water; they were also used to craft water in everyday life. The choices people make about consumption, including water, are

situated within regional constellations of ideas, meanings, and practices.[98] Some are rooted in local knowledge and communities of practice, while others depend on, or are enabled or constrained by, the choices made by other communities of practice. These networks enabled people to "share ideas about how to make and use objects."[99] Getting water and consuming it can be a highly social activity. People make choices about what waters to drink and how to prepare it based on local knowledge about what is the best, most appropriate, or most efficient way. Those people living in the villages who collected, processed, and consumed water formed distinct communities of practice.

When a cup of water was drunk, different physical and cultural structures, individuals and agencies came together. Many were involved: people who made pots, grew and carved calabashes, cultivated botanicals, and fetched water from nearby sources. Each of these activities required experience and improvisation. Fetching water required knowledge about which spring to gather water from or where on a stream to pull a bucket. There was a complex relationship between the needs and desires of the person drinking the beverage and the caretaker's ability to craft a substance that met that person's taste. Elements that aided in crafting water could be reused, most notably glass bottles used to store liquor or ceramic vessels built to process sugar. Much of the act of crafting water involved repurposing such vessels, to make modifications to water at hand, rather than collecting water anew.

For instance, the conceptualization and crafting of tea was always a more complex process than a simple translation by a cook from idea to physical reality. "Tea" was crafted with substances obtained at some distance, namely, the black tea purchased at the local shop. In the eighteenth century, there were numerous treatises on brewing and serving tea, many of which pay special attention to accessories, including "a teapot, slop bowl, container for milk or cream, tea canister, sugar container, tongs, teaspoons, cups and saucers."[100] Many of these accessories were made as refined earthenware in the Old World, including potteries in Staffordshire, England, and Nevers, France. Services, such as Chinese porcelain, were highly valued for the quality of manufacture, the distances traveled, and the symbolic capital they conferred on their users. The assemblage of objects, then, can be seen as a catalyst of these ideas. The vessels are significant in that they craft both the drink and the person. The idea may never have had a material existence as a recipe or prescription on a piece of paper, but it did exist in the final form of the assemblage.

Today, Dominicans use the word "tea" to refer to any hot beverage. In addition to black tea, the term can refer to "fish tea," "cocoa tea," coffee, and

"bush tea." Tea was seen to have curative properties. According to Dominicans, drinking tea daily mitigates the gas and cold that accumulates overnight and is trapped in the body. Bush tea, made with herbs, grasses, or barks, such as mint, lemongrass, or *bwa* (Cr.), was prescribed for diarrhea or worms.[101] People attributed several symptoms to worms, from what was most likely lactose intolerance to diabetes.[102] A "fit tea" was crafted from the herb *sime kontwa* (Cr.) and water collected in a nearby river. This water was boiled with the herb for one minute until chartreuse in color. The person crafting the water knew what that water was supposed to be, how it should be used, what qualities it was intended to have, and the manner through which it should be taken. The crafter of the water translated this idea into the assemblage of objects used to transform and hold the substance in its final form.

Of the images of vessels containing water, the only one with accompanying text is by Isaac Belisario: "Water-Jar Sellers" (figure 2.2). The image shows two men carrying the array of vessels one might find in the colonial Caribbean to store and cool water. The pottery in the tray includes "goglets" or goblets; a "monkey" or "monkey jar," and several other unspecified forms. The large pot being carried on the right appears to be a Jamaican version of the "Spanish jar." Along with the print, Belisario provides a brief treatise on water in colonial contexts, stating, "Water, that grand refresher of animal life, is here rendered an object of the first consideration, more especially in the domestic economy—from being unattainable in such purposes."[103] The reason for these vessels and water carts was not only to counteract the leaching of salt into the water table, but also to prevent water from becoming foul. The jars were important because they protected water from "The effect produced by a tropical climate in corrupting it."[104]

The importance of safe and clean drinking water was at least a part of administrators' calculations. Belisario describes the attempt of Falmouth, on the north coast of Jamaica, to build main and service pipes like "those adopted in the Mother Country." Likewise, colonial administrators in Point-à-Pitre and Basse-Terre, Guadeloupe, would provide safe water for town residents.[105] Belisario continues to provide a detailed description of Kingston's water supply: "there are pumps in every street and wells in almost every yard, but so strongly are their waters impregnated with salt . . . (with few exceptions), as to be totally unfit for culinary uses . . ."[106] The jars, according to Belisario, would be used to carry water in water carts on the tops of the heads of servants, who "traversed the city." Belisario goes on to describe how homes should have a "water pantry, in which jars of large dimensions, serving as reservoirs are deposited." There, a "trusted" slave

FIGURE 2.2. "Water-Jar Sellers,"1836. This lithograph depicts ceramic water containers, including monkey jars, goglets, and water jars. Courtesy of "Slavery Images: A Visual Record of the African Slave Trade and Slave Life in the Early African Diaspora." http://www.slaveryimages.org.

would clean and resupply the vessels. It appears, therefore, that such vessels were important for transporting and storing water.

In slave villages, drowned animals, human waste, or the everyday activity of bathing contaminated the water supply and made slaves vulnerable to water-borne diseases.[107] Abolitionist Robert Nickolls invoked pond water to assert that slavery deprived people of basic needs.[108] People had to develop different ways to make water potable. There were additive methods that made water palatable. Slave apologist Thomas Atwood states that a daily ration in the rainy season was a "pint of rum and water, sweetened with molasses."[109] This method was not unique to Dominica or slavery. While today grog is considered a type of alcoholic drink, in eighteenth-century Dominica it was more associated with water. Rum was a way to make fetid water stored in barrels palatable on long naval voyages. In many West Indian islands, water for grog came from ponds, which were easily polluted.

There were also methods to remove elements. Elite kitchens often had "porous stone-mortars" called dripstones. These were carved limestone vessels with architectural features designed to capture and percolate water. Water that fell on a roof flowed into deep hollows cut into a large dripstone. It percolated through the constituent material and slowly dripped onto another dripstone with a shallower hollow. Impurities in the water were filtered out as water dripped through the porous stone jars. Under the pair of stone jars, a receptacle received the water as it trickled down. These stones were heavy, difficult to move, and found primarily in the homes of wealthier free residents in slave colonies.[110] Other residents allowed sedimentation to clarify their water. They placed stones or lead disks at the bottom of large earthen jars, like the one depicted in Belisario's painting, to help the sediment settle. Others placed beans from the strychnine tree at the bottom of a pot "as in the Coast of Coromandel."[111] Sedimentation is in part a function of volume and time. By decreasing the volume of water, one decreases the amount of time it takes for sediment to settle. Sediments also fill the spaces between stones. As I describe in later chapters, Biot jars made in southeastern France, local earth jars called D'Aubain, and drip jars, made to process sugar, were commonly used for water storage in estate houses and slave settlements throughout the Windward Islands.

Finally, there were methods that transformed water by its very interaction. Goglets, or coarse earthenware pitchers, appear frequently in images depicting slavery in the late eighteenth century. Derived from the French *gargoulet* and the Portuguese *gogoleta*, they are also called goblets or "pot l'eau."[112] In Grenada, Dominica, Nevis, and Antigua, goblets are "A long-knecked open clay jug for keeping and serving cool water."[113] This vessel has a much older etymology than the monkey jar.[114] The earliest documented use of goglet in the English language is in 1681, "Gurgulets and Jars, which are vessels made of a porous kind of earth."[115] A 1773 English-Portuguese dictionary describes it as "an earthen and narrow-mouthed vessel, out of which the water runs, and guggles."[116] The shape and manufacture of these colonial ceramics are similar to those of counterparts made in the Mediterranean.[117] One subtle social transformation occurred as water was filled in goglets: it cooled.[118] Beyond qualities such as freshness, salinity, clarity, and murkiness, porous vessels added a new dimension to water—coolness.

Conclusion

The study of water and how humans relate to it is far from new. Archaeologists have examined peoples' relationships with and through water to understand the

emergence of "complex society." Debates have centered on the persistence of alternative arrangements of power, the emergence of long-distance trade, and the centralization of control over infrastructure. At the same time, anthropologists, geographers, and sociologists have brought attention to water security and its everyday uses.[119] In most cases, the amount of water available is not the primary concern. Rather, the potability of that water, in light of competing interests of agriculture, mining, and industry, has drawn attention to issues of water security. Contributing to this discussion is an overtaxed infrastructure, privatization of utilities, and changing patterns of population and settlement.

Combined, these streams describe how the richness of the archaeological record can address how people conceptualized and engaged with water in the past to encounter the predicaments they faced. Windward Islands, such as Dominica, that were colonized in the last quarter of the eighteenth century with the express purpose of increasing sugar and coffee production faced similar crises. Reaching back in time, it is clear that water security has always been a concern in the Caribbean, but never fully resolved. The way that people managed water insecurity differed both within cultural traditions and between traditions. Despite the Caribbean's long-term history with and through water, colonizing narratives depicted islands such as Dominica as a place of latency that could be realized only through the intervention of markets and slavery. Analysis of archaeological remains from slave houses provides an entrance into the exploration of social relations around drinking water and its implications for the reproduction of slave society.

CHAPTER 3

Mapping the Sugar Revolution

> I was at Sugar Estate and saw the Negro Hospital & them [the slaves] lying on tables like a Butchers stall. I saw the sugar & rum making. Cane is cut in bundles and introduced between 3 cylinders covered with tin, each touching one another. These are turned around by wheels driven by a water Mill. The sugar juice is expressed and runs through a canal into Boilers 4, 5, 6 of them together. Fist full of lime introduced to coagulate and clarify the sugar. The better it is [the quality of juice], so much the less lime is requisite. Then it [the resulting slurry] is cooled to put into hogsheads with holes in them to let off the Molasses. From it, [the molasses], the Rum is distilled & made.
>
> —Journal of Jonathan Troup, May 15, 1789

JONATHAN TROUP DESCRIBED THIS sugar estate a few days after arriving in Dominica.[1] Filled with aspirations for making a fortune in the new colony, he set up a small practice among sixteen "Mullato, French and English" physicians in the town. Shortly after arriving off the coast of Roseau, Troup witnessed the operations of a sugar estate during harvest. Dominica was still a relatively new colony undergoing some growing pains. Accounts such as his are useful for archaeologists, as they animate many of the standing ruins we document when we walk the landscape. For example, it is possible that Troup is describing Sugarloaf Estate, though he could be referring to any of a number of sugar-producing estates along the leeward side of the island. The physical description by Troup matches well the physical layout of Sugarloaf Estate. This "canal" was a narrow-gauged wooden gutter lined with lead.[2] The boiling house had six cauldrons—unusual for sugar plantations in Dominica, but not for the largest ones.

Such documents also attune our eye to those things that might be less visible. By the time Troup was visiting Dominica, plantation managers and owners had

begun to commission infirmaries, sick houses, or "negro hospitals" close to the villages, but far enough away to avoid spreading disease. Enslaved workers often avoided going to these infirmaries when they were sick, preferring their own homes and caretakers. The site of the hospital and his analogy to a butcher stall foreshadowed Troup's experience. Troup spent just under a year in Dominica, becoming increasingly despondent and critical of Dominica's plantocracy. As a physician, he saw the cost of slavery as the Nature Island's promise was met with the slow violence that accompanied everyday life.

Dominica's sugar revolution signaled the predicaments that emerge when you replace one crop with another. These predicaments reach back in time to the seventeenth century, outward to colonial policies and distant markets, and inward to the very immediate and concrete: which crops grew where, the patterns of rainfall, and the implications for enslaved Africans and the people who claimed ownership over them. Slavery did not begin in Dominica with the introduction of sugar, but the sugar revolution did entangle unwilling actors at a rate that had yet to be seen. Assemblages of land, buildings, and artifacts scattered in the hilly uplands of Soufriere and the flat lowlands of Portsmouth index profound changes in political authority and how social relations were mediated through the environment. They also signal the predicaments of enslaved laborers faced with such transformations. Water insecurity was created by colonizing narratives that stressed a latent abundance of Dominica's nature and encouraged English-speaking elites to improve their situation by rendering the island productive and governable.

The Sugar Revolution

Water insecurity materialized through competing agendas of production and reproduction that emerged after Dominica's sugar revolution. Between the seventeenth and twentieth centuries, crop booms of tobacco plants, cotton bushes, sugar cane, coffee, cocoa, and lime trees marked Caribbean economic history. Taking advantage of various social factors, landowners consolidated land and invested in infrastructure. This prioritization of cash-crop farming decreased land availability for growing foodstuffs and other crops. There is a large body of research attempting to determine the impacts, if any, of increasingly intensified cultivation and processing of cash crops in colonial contexts, including the Caribbean. Sugar cane has been an especially favorite target of investigation. An export-oriented crop introduced under old colonial regimes to the Americas, and one increasingly promoted for its ability to generate wealth, this species of grass

has high nutrient demands.[3] Many have linked capitalism and its predicaments with sugar's cultivation, including widespread deforestation, hydrologic manipulation, and manuring.[4] Sugar draws attention, since the flow of export value is merely a disguised form of topsoil, nutrients, and water, spirited away from local fields, leaving Caribbean soils and farmers vulnerable to climate variation—even as merchants and investors in distant capitals turn significant profits.

As a concept, resource security is controversial, as it can have the unintended consequence of weaponizing resources.[5] Yet water security and insecurity are issues that people have to contend with in everyday life, and the scholarship recognizes it as such.[6] The context of eighteenth-century Caribbean security is an appropriate framework, as it evokes the social reality of violence that accompanied slave society in both its spectacular and everyday forms.[7] Security also maps well onto the idea of slow violence, a concept forwarded by Rob Nixon. Nixon defines slow violence as a "violence that occurs gradually and out of sight; a delayed destruction often dispersed across time and space."[8] He attends to the "long dyings" resulting from environmental crises, rather than the spectacular and sensational accounts of crisis that drive media outlets. Nixon says the political impact of those who examine slow violence is often limited by the scope and frame within which their work is read—as historically situated critiques bound through national frames. The violence, therefore, is twofold. First are the ecological and human casualties that occur in seemingly unconnected ways but are symptomatic effects of priorities forged at the centers of empire and endorsed by colonizing narratives and market imperatives. Second is the relative blindness to the ways such globally connected predicaments are linked. Importantly, while the violence is slow, it is not invisible for those most directly affected by it. Water insecurity as slow violence did not result from the insufficiency of the land or inadequacy of the people forced to work it. It was a consequence of colonizing narratives that attempted to take advantage of the the Nature Island's latent abundance through slavery and markets.[9]

Clearing the Land

English-speaking elites in the late eighteenth century loved plans. From the 1720s onward, elite writers, mostly men with aspirations of title and land, commissioned and consumed a plethora of printed treatises aimed at giving advice to the empire, mapping lands and properties in distant territories, or producing paintings of the people who lived in those territories. These plans schematized the management of colonies, the roles of property owners and their inferiors, and techniques of husbandry and debt. These plans created predicaments for colonial

administrators who designed legal, economic, and land systems to realize these ambitions, and for ordinary people, many of whom were enslaved, who labored to materialize those designs in everyday life. One such plan was widely discussed for the ceded islands, including Dominica, after their annexation to the British Empire in 1763. English-speaking elites wanted to take these islands with mountainous and densely forested interiors and create plantation colonies— that is, colonies that could provide lucrative commodities for the European market, and act as markets themselves for metropolitan manufacturers. Although Dominica became an official colony in 1763, its colonization extends back in time in ways that are difficult to track through the documentary record. Seventeenth-century accounts describe the island's latent abundance. The colonizers were rarely able to take advantage of the possibilities for agricultural and economic expansion before its colonization between 1729 and 1763. To realize the potential abundance, colonizers had to prepare the land. Preparing the land meant removing the Kalinago in a physical and discursive manner.

Throughout the seventeenth century, the number of indigenous settlements decreased, and those settlements were located on fewer and fewer islands. Beginning in the sixteenth century and continuing well into the eighteenth century, European slave raids targeted Indigenous peoples in the Eastern Caribbean (both autochthonous and refugee). European settlers also displaced Indigenous peoples as they moved into new islands, often through violent means. Importantly, the Kalinago were often caught in the middle of geopolitical struggles extending beyond the Caribbean theater. On islands in which Europeans had established territorial claims, Indigenous peoples were often expelled in response to political action or due to the potential of political instability they signified. Only a few contested islands (Dominica, St. Vincent, and Grenada) remained Kalinago strongholds. Their status was conferred to maintain an uneasy peace in the Caribbean between European powers and made secure by the reputation of fierceness that the Kalinago developed. Shifting alliances with France and Britain throughout the seventeenth and eighteenth centuries were used as justifications for punitive raids and military outposts on islands such as Dominica.

Europeans labeled all Indigenous occupants of the Eastern Caribbean "Carib," which erased the multicultural and politically diverse Indigenous landscape. Breton, for example, documented that residents of the island called themselves Kalinago, "of the islands," to distinguish themselves from those from the South American mainland.[10] Eighteenth-century refractions of that diversity into racialized taxonomies by European military and civilian administrators "fractured" ethnicity into "new identities that might be dubbed 'Black

Carib' . . . 'White Carib' . . . and 'Red Carib.'"[11] Late-eighteenth-century administrators began to rely on distinctions between "true Caribs" and escaped slaves who were "pretending," the latter providing justifications for expulsion or administrative oversight.[12] By the time Thomas Atwood claimed, "there are not more than twenty or thirty families, who have their dwellings on the east part of the island, at a great distance from Roseau, where they are seldom seen," in his *History of Dominica* (1791), administrators were using the claim of "pretending" to expel Indigenous peoples.[13] This was certainly the case of the Garifuna, who were expelled from St. Vincent.

While Indigenous populations were subjected to violence in land grabs, markets also played an important role in remaking the landscapes of the Caribbean. Between the 1700s and 1740s, various European farmers, would-be planters, lumbermen, and fishermen settled smaller Caribbean islands to gain standing in a region where land suitable for export crops was increasingly scarce.[14] Would-be smallholders immigrated to Dominica from Martinique and Guadeloupe during the early part of the eighteenth century for a number of reasons.[15] A head-tax was imposed on free people of color, effectively pushing a class of individuals to seek their economic fortunes elsewhere. An earthquake devastated the economic fortunes of cacao planters, creating a class of small landholders willing to sell land for hard currency. Coffee was also introduced, offering new possibilities for accumulation but also making land scarce, especially in northern Martinique. It is no surprise, then, that the earliest agricultural enterprises on Dominica required less capital to establish and relied on existing agricultural expertise of the enslaved who labored for them, and could find a ready market in the region.[16] These enterprises cultivated cotton, coffee, cacao, and provisions, including root crops and plantains, that were grown for rations.[17]

Many, such as "Lewis" de la Ferriere Constance, a "Creole" of Martinique and owner of Bois Cotlette, continued to live in Dominica after 1761, when Britain solidified its position in the region and sent its navy and army to wrest control of the island from the French. For those who complied with the conditions instituted after the Treaty of Paris in 1763—like the owner of Morne Rouge, Joseph Bellot—the new colonial order took advantage of their possession of the land and claims to ownership over people. Transactions made in subsequent years provide some clue about crops grown under nominal French rule. For example, when Constance gifted one third of his estate as a wedding gift to his niece and nephew, Adrien and Therese Constance, the will catalogues thirty thousand coffee, twenty thousand cacao, and four thousand plantain trees, as well as ten acres of cassava, and six and a half acres of sweet potatoes.[18] For coffee and cacao trees

to have reached maturity to bear fruit, they needed to be planted in the 1740s.[19] Because Dominica lacked legal access to European mercantilist networks, these yields were ferried to northern Martinique.[20] Dominican coffee and cacao were folded into Martinican yields, allowing the commodities to be exported as the product of the French colony.

Despite the proximity of the French and their territorial claim over the island, there are very few archival records from the period of French occupation in the first half of the eighteenth century. Until 1729, the nearest French official to Soufriere was in the northern communes of Martinique. The same could be said of Portsmouth and the southern islands of Guadeloupe. That year, the French asserted nominal rule over the island when the governor of Martinique appointed commandant LeGrand to administer island affairs. Installed by military appointment, the commandant oversaw the island's defenses. LeGrand and his successors in turn appointed "*capitaines de quartier.*"[21] These men were nominated among the planters and acted on behalf of the commandant to captain the militia. The French relied on these captains to indirectly monitor the island. In 1730, 1731, 1743, 1745, and 1753, the commandant tabulated the population, crops, domesticated animals, and weapons in each quarter (see table 1.1).[22]

Nicholas Croquet de Belligny was one such planter. As a wealthy proprietor of coffee estates in Le Prêcheur, northern Martinique, Belligny and his wife established an agricultural concern in Dominica sometime between 1723 and 1745.[23] While land and capital were available to planters such as Belligny, they resisted growing sugar. As Dominica was a colonial dependency of Martinique, sugar cultivation was kept to a minimum. The illegality of settlements led to an ever-present fear of evacuation that prevented investment. Martinique's plantocracy did not want competition and lobbied to restrict sugar cultivation in Dominica. There are no documents specifically detailing what these estates grew. We can infer from the *recensement* described above that it was most likely coffee, cocoa, foodstuffs, or some combination of the three. A 1770 testament in which Belligny designated his heirs lists a "Farina House" at Morne Patate, suggesting that slaves on the property cultivated and processed cassava into flour.[24] Food grown here could have been for his properties in Martinique or sold to planters who failed to cultivate sufficient rations for enslaved workers.[25]

While both smallholders and plantation owners had their own reasons for establishing plantations in Dominica in the first half of the eighteenth century, they also shared priorities. Dominica was an island with unrealized latent potential to grow coffee and cocoa for the international market and food to meet the needs of the growing urban and enslaved populations in neighboring

Martinique. Land made available through exclusionary forces, such as expelling the Kalinago, allowed them to accumulate wealth by meeting demands in both local and global markets.

Improving the Land

In 1761, Dominica was captured by Lord Admiral Rollo during a campaign in the Seven Years' War. At the conclusion of the war, the British formally annexed the island, thus ending nearly one hundred years of official "neutrality." In 1763, British colonial planners and agents set rules that established who got what land and how that land could be used in their newly acquired "ceded islands," Dominica included. It is convenient, then, that Diderot's encyclopedia published the entry on sugar plantations in his 1751 release of *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*.[26] As in other land grabs, treatises on husbandry, like this dictionary, and advocates of slavery "created principled arguments about the ways in which land may, may not, and must be governed."[27] These regulations and principled arguments revolved around "improvement."

The "philosophy of improvement" gained currency in mid-eighteenth-century Britain because it married both "profit and moral benefit" through Enlightenment ideals of utility, personhood, reason, and religion.[28] According to this philosophy, individuals had a moral duty to take advantage of latency in land and better themselves through its improvement, thus entangling the land with technological, economic, and social agendas. Improvement was also a part of state-making: "forcing Scottish peasants into modern agriculture was thus bringing them into the present and, as reformers saw it, into civilization."[29] In a newly formed United Kingdom that included Scotland, highlanders were dissonant subjects.[30] They transgressed social norms of unionist sentiments that stressed Britishness, including being primary belligerents in the Jacobite rebellion in 1745. Eighteenth-century accounts stressed the poor management of land by Scottish highlanders. Accounts described unemployment, overpopulation, crop failures, and famine.[31] They argued that "rational" land stewardship, including proper field drainage and novel fertilization techniques, increased productivity and relieved predicaments. By "improving" the land, such policies sought to secure dissonant subjects whose allegiance was tenuous.

Such ideas can be extended to endeavors to create a British Empire, in which French settlers, Scots, and Irish were potential dissonant subjects of colonial territories. It is useful to question, as Sherwin Bryant does in eighteenth-century Quito, slavery's uses in governing colonial subjects.[32] In addition to feeding a political economy, slavery also improvised racialized modes of marking a

difference between Europeans and non-Europeans, which allowed for governing a potentially dissonant set of subjects.[33] Specifically, slave relations entangled people categorized as *Indios* and *Negros* in predicaments that were central in governing a colonial state.[34] In Dominica, slavery had an enormous imprint on the regulation, norms, and practices of the land and its resources. At the close of the eighteenth century, even as the instability of colonies dominated by enslaved labor became increasingly expressed in the form of revolts and rebellions, and the productivity of and returns from sugar waned, the total number of slaves living on sugar estates continued to increase. Slave relations also entangled people into governing colonial states through policies that described who could get land and how it could be used.

Principled arguments surrounding the colonization of the ceded islands extended these policies into the new territories. Slavery and markets associated with commercially oriented agriculture of sugar and coffee created the conditions necessary for "improvement." Properly activated, this latent abundance also "improved" the situation for enslaved Africans and the people who claimed ownership over them. For example, a pamphlet authored by Sir William Young (1725–1788) explicitly discusses the improvement of newly acquired territories and links it with the improvement of people, dissonant subjects included. Prime Minister George Grenville nominated this Antiguan-born Scot to oversee the Commission for the sale of lands in the ceded islands of Dominica, St. Vincent, Grenada, and Tobago.[35] The treasury, the board of trade, and Young spent the next year negotiating the regulations and policies that shaped the sale of land. Young's pamphlet, *Considerations Which May Tend to Promote the Settlement of Our New West India Colonies by Encouraging Individuals to Embark in the Undertaking*, was part of this endeavor.[36] This document, which summarized the year of work and negotiations between stakeholders, prescribed a series of actions that, among other things, ensured that goods began to flow immediately, and that there was a laboring population to help transform the land.

Young confronted two issues with the settlement of Dominica: first, securing the political and economic integrity of the island through building fortifications to monitor enemy (in this case, French) navies and contraband trade; second, generating wealth for the metropole through immediate sugar production. He also had to integrate French settlers, who occupied the land, grew coffee, and purportedly had continued economic and social ties through trade with Martinique and Guadeloupe. A two-part effort ensued to convert much of the land for sugar production and to retain the coffee estates owned by French settlers.[37] Finally, there was the instability of a society where enslavement was foundational,

with the added risk in Dominica that some also had pre-existing social and economic relationships with neighboring islands.

Smallholders, state actors, corporations, and would-be planters tried to take or keep control over land and its resources during land grabs.[38] The actors involved in Dominica's sugar revolution were equally diverse. Governors appointed by the crown were frequently at odds with a local plantocracy—made up of absentee and resident British proprietors, some of whom operated through agents—that composed colonial assemblies. There was also an in situ class of smallholders who had been cultivating food crops and selling them to neighboring islands for nearly fifty years. These smallholders were generally creoles who spoke French, and at least some of them were of African descent. As such, they were excluded from the political franchise in the island assembly, but controlled some of the infrastructures that made the colony work.[39] French subjects—such as Belligny, Bellot, and Constance—were encouraged to remain on the island to continue cultivating coffee. They took advantage of the change in sovereignty to transform farms on which slaves grew food, cacao, and coffee to also cultivate sugar cane. It was unthinkable in the colonial context to allow Kalinago or runaway slaves to purchase or lease land. Rather, local militias and state actors used violence and its threat to gain access to and exercise control over land and its resources. Despite these efforts, large portions of the island were left, and a small enclave was designated for "Caribs."

Young promoted the development of sugar on this vast new frontier through absentee proprietorship. It was believed there was always a market for sugar that the land could produce. There was also a market for land.[40] English, Irish, and Scottish merchants accumulated wealth through their ties to the West Indian trade or through interest on debts encumbered by the crown in its prosecution of the War of the Austrian Succession (1740–1748) and the Seven Years' War (1756–1763).[41] Between 1755 and 1763, Britain's debt had grown nearly sevenfold, and to service that debt required an expenditure of nearly 63 percent of Britain's annual budget.[42] These merchants were largely excluded from the profit accumulated by owning a sugar estate. By the time they had amassed the capital to start such a venture, land was unavailable—Jamaica was the last major island annexed by England in 1655. Britain attempted to take advantage of new territories to reduce debt acquired through the wars of the previous fifty years. The sale of land in Dominica, along with increased revenues from sugar production, offset the state's debt to the same merchants they hoped to sell the land to.[43] At least, that was the plan.

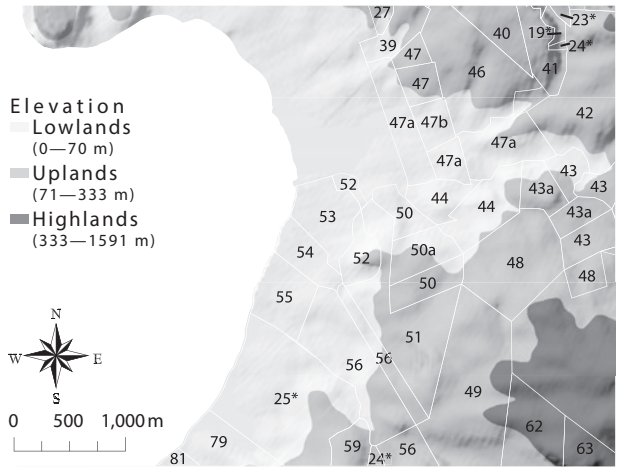
The lands to be settled and the settlers to be improved were diverse. For Young, the right people were to make use of the right land for the right crops.

Young appointed John Byres to survey properties purchased and leased in the years after British annexation.[44] Byres mapped the apportionment and sale of 94,345 acres (figure 3.1, maps 3.1 and 3.2). Byres linked this map to an index of ownership that detailed who the freeholders of the land were and who the leaseholders of the land were. To encourage proprietorship and reduce the vagaries brought on by speculation, Young suggested that no one should be able to purchase land "more than 300 acres."[45] The remaining French subjects were required to lease the land they previously considered property from the British crown until they were able to demonstrate their loyalty. Young proposed "that the French inhabitants of Dominica, are permitted to enjoy their possessions, by leases unto the Crown . . . that is to say the lessee is to take the oaths of allegiance and subscribe the declaration of abjuration against the pretender. He is to hold, by his lease, only such lands as he was, at the surrender of those islands."[46] Poor settlers were given access to plots of land of ten to thirty acres. In exchange, they were to make a small annual payment (quit rent) of six shillings and clear the land in seven years. Failure to clear the land or pay penalties resulted in severe penalties.[47] By implicating French subjects in the improvement of the island, Young secured the political and economic integrity of the island.

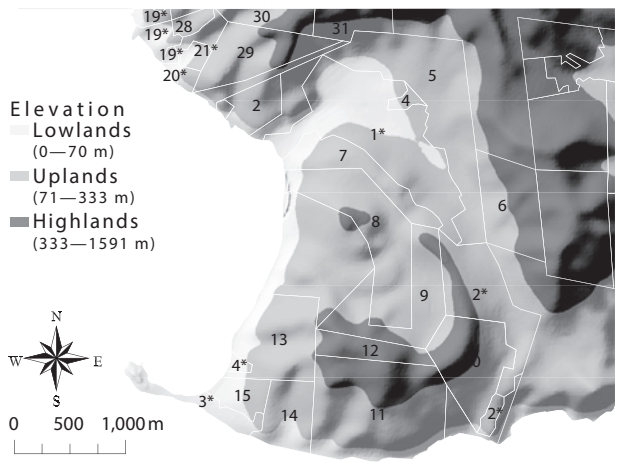
Byres's map was also a mechanism to attract prospective owners. Byres underemphasized the topographic difficulty of the island, creating vast plains where none existed in reality. This made Dominican land more attractive to prospective buyers. In reality, the physical geography of Dominica is very steep. Less than 8 percent of Dominica's land mass has less than a five-degree slope. In the Byres map, just over 50 percent of the land was displayed as a flat plain. This was no mere cartographic hyperbole. So keen were the British to attract settlers to the island that they glossed over the actual nature of the landscape. For example, in describing the island, authors of a Gazetteer published in 1776 say: "Its appearance is rugged and mountainous . . . but assent is easy . . . some have reported it to be the best of the Caribbees for its fruitful valleys, large plains, and fine rivulets."[48] This was despite the steep terrain that made roads expensive and difficult to build. It also left little room to pasture cattle responsible for dragging ox carts and manuring fields—a vital step in refreshing the soil. The map had a short-lived success. Within the first years of public auction, some buyers were reimbursed after detailed surveys revealed inaccuracies in the initial sale.[49] By improving the island through absentee ownership, Young's design also implicated Scots, Irish, and English into a project of Britishness and empire overseas and abroad.

Young's pamphlet not only made clear the regulations under which land could be purchased or leased, it also spoke to the principled arguments that

FIGURE 3.1. "Plan of the Island of Dominica Laid Down by Actual Survey," by John Byres, 1776. (See Edelson, *New Map of Empire*, for a thorough discussion of this project.) Courtesy of the Library of Congress.



MAP 3.1. Apportionment of land in the Portsmouth Enclave as depicted on Byres's "Plan of the Island of Dominica." Numbers are indexed to specific proprietors or leaseholders in Byres's *References to the Plan of the Island of Dominica*. Freeholds are displayed as plain numbers, and leaseholders as numbers with an asterisk. Sugarloaf, a freehold, would include land demarcated as 44, 43a, 50, 50a, and 47a. Illustration by author.



MAP 3.2. Apportionment of land in the Soufriere Enclave as Depicted on Byres's "Plan of the Island of Dominica." Numbers are indexed to specific proprietors or leaseholders in Byres's *References to the Plan of the Island of Dominica*. Freeholds are displayed as plain numbers, and leaseholders as numbers with an asterisk. Bois Cotlette included 2*; Morne Patate 7, 8, and 9; Morne Rouge 11; and Crabier 12. Illustration by author.

legitimized the land grab. "Natural" resources permitted colonists to avoid some of the mistakes made in the first wave of sugar revolutions. The potential for wealth, Young argued, is tied to the potential of the land: "Old islands, being less mountainous, and almost entirely cleared of wood, [have] become extremely dry and unseasonable; at the same time the lands in them, by long and constant planting, have . . . lost their spring and spirit of vegetation, as to stand in need of more rains than they had before."[50] The soil, according to Young, is new and "will be rich, yield large and regular crops, ratoon longer, require less planting and be cultivated with moderate expense and fewer negroes."[51] His assessment was not based on mere speculation. Grenada, which had been more intensively settled by the French, had more than three dozen sugar estates by the 1760s.[52]

The ceded islands had other advantages over older British West Indian colonies. The limited size of Barbados, Antigua, and St. Kitts meant that wealthy merchants and poor settlers could not take advantage of different types of land to grow different crops. Young argued, "Our new islands [including Dominica] are something larger in extent than any of our older ones, excepting Jamaica."[53] The number of potential acres put to cash crops in Dominica exceeded those of the "older ones." As such, wealthy investors might buy fertile valleys to grow sugar, while poor settlers could take advantage of hilly uplands to grow coffee. At the same time, the island was not too large. Unlike Jamaica, where roads were necessary for developing the interior, on the ceded islands, canoes and sloops could ferry much of the traffic between estates and transshipment ports ("long land carriage of burdensome commodities is destructive to cattle, and renders the interior part of the country of little or no value").[54] Quick access to the coastline meant that plantations were easily connected to significant ports employing small boat traffic—cabotage.

Young's pamphlet also enthusiastically described the potential of planting in the "fertile" ceded islands for those for whom "there has been no such opportunity of improving private fortunes."[55] Here Young is targeting poor whites excluded from purchasing land on other islands, and tradespeople, like Troup. Linking the improvement of the land with the improvement of personal fortune was a way to enlist Scots, Irish, and French, poor or wealthy, in the project of building an empire on the margins. For leaseholders and poor whites, this meant investing in a "few negroes" and "erecting temporary huts and buildings, of little cost."[56] From there he argues that the best return for such a modest investment was "the culture of indigo, cotton, coffee, or cocoa." For those who own larger tracts of land, Young argues, "it is evident that by these and similar means, beginning with provisions, cocoa, coffee, cotton and indigo," estates can be grown

at an "easy rate." Upon reaching a level of financial security, he argues that the land can then be converted into "sugar plantations, or if the proprietors be so disposed might probably be sold for four-or five-hundred percent advantage."[57]

Young does not mention enslaved laborers often in his pamphlet. He uses the words "slave" seven and "negroe" eight times. In most cases, he refers to them in terms of the value they add to estates. For example, to improve the land, woodland had to be cleared. He estimates "Twenty or thirty will, perhaps, at first be sufficient for the largest possession . . . [for] clearing . . ."[58] That said, he does link the improvement of the land with the improvement of their person. He describes how "moist and good grounds . . . greatly lessen the cost of feeding and supporting the slaves."[59] But, as described above, improvement in the eighteenth century also carried with it moral connotations: "Their pride should be cultivated. . . . It would be wished moreover, that some sentiments of religion could be instilled into the minds of our negroes."[60] Mentioned only in passing, the enslaved were an important but unstated part of the plans of English-speaking elites to improve the land.

Woodlands became an important category when the plans of English-speaking elites were materialized in the colony. To further encourage white settlement and land cultivation, West Indian assemblies in the British Windward Islands passed what have been referred to as the Diminishment Acts.[61] In other colonial contexts, distinctions such as forests, savannas, and farmland are part of the discourse of state-making.[62] In Dominica, the act fined each owner six shillings per acre of land that was still a woodland. These acts were not so much to rid private landowners of woodland, but to promote white settlement. The act paid out of the public treasury twenty pounds per annum for every white person on each estate over the age of fourteen. As with any law, we should always be suspicious about the degree to which it was enforced. We could, however, read acts such as the woodland tax act as promoting deforestation. Governors considered these acts necessary because, at the time, absenteeism was high in Dominica and such an act encouraged owners to populate their estates with white families.

By linking the personal fortunes of in situ and would-be smallholders and plantocrats with "improvement," the regulations and legitimizing arguments, an exclusionary force in and of themselves, implicated diverse peoples. There is some evidence that the commission's efforts began to bear fruit by the time of the American Revolution. According to an enumeration taken by the French in 1785, there were 216 coffee and "other" estates and 65 sugar estates on the island; among the sugar estates, there were 54 water mills, 18 cattle mills, and 6 windmills.[63] Between 1753 and 1801, enslaved residents grew from approximately 4,690 to nearly 23,000.[64]

Insecure Assemblages

Most historians who discuss agricultural transitions in Dominica stress the failure of sugar and the dominance of coffee as an export-oriented cash crop with good reason.[65] The amount of land devoted to sugar retreated slowly through the nineteenth century. In 1825, estates in the Portsmouth enclave were producing fewer than five hundred hogsheads of sugar per year, and estates in Soufriere were producing just over one hundred. One estate, Bois Cotlette, produced only two hogsheads in that year.[66] Difficulties in maintaining a steady and skilled labor force, coupled with a perceived lack of quality control on the part of the sugar board, led to a "partial or entire abandonment of many sugar estates" by 1884.[67] In 1896, there were only two estates exclusively cultivating sugar on the island, neither of which was in Portsmouth or Soufriere. The total acreage of these two estates, along with other parcels on estates growing a variety of crops, composed only 975 acres of cultivation.[68]

The number of factories detailed in the French enumeration suggests that Dominica did experience a crop boom. Anthropologist Derek Hall defines a crop boom "as a rapid increase in a given area in the amount of land devoted to a given crop as a monocrop or near-monocrop, and when that crop involves investment decisions that span multiple growing seasons."[69] Importantly, crop booms are not events with discrete beginnings or ends. Rather, they are processes through which social, political, and economic arrangements change. The sugar revolution is not so much a historical moment or a realized ambition. To approach it as such is to mistake a sugar revolution as an ideology with a sugar revolution as a lived reality. As Higman notes, it is important that we not conflate technological shifts with specific crops, nor frame such transformations as totalizing.[70]

Crops were not the only things that proliferated during crop booms. Buildings began to dot the landscape (figure 3.2). Some of the buildings were constructed to process sugar, coffee, or some other botanical into commodities. Other buildings housed people. Like all assemblages, some of these buildings were more visible than others. Archaeological analyses of plantations have typically mapped the relationship between estate houses, factories, and dense artifact scatters indicating villages.[71] This project of mapping has benefited from a discussion of variation from the norms described above, particularly how built landscapes vary from idealized notions. Estate houses, industrial works, dependencies, and laborer villages were constructed in a particular physical and cultural geography, and created tensions in past landscapes. Estates were also

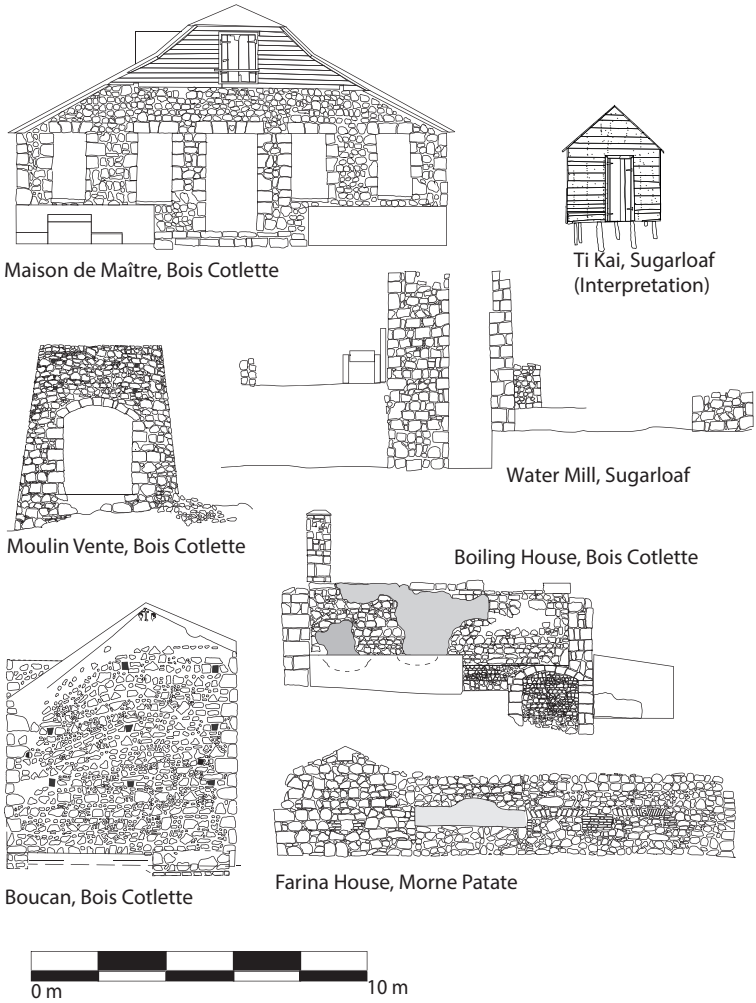


FIGURE 3.2. Buildings of the "Sugar Revolution." These buildings were documented during the course of archaeological survey. All of them, excluding the coffee "boucan" and the farina house, seem to have been built during the flurry of activity subsequent to 1763. Illustration by author.

organized to enact certain power relations where lines of sight and spaces of partial visibility all interacted to create a spatial dialectic.[72]

Plantations were assemblages of the insecure. Certainly, the polite architecture of estate houses signals that its commissioner often had something to prove.[73] Additionally, plantations were not just about the buildings but also the

landscapes they inhabited.[74] The location, orientation, and size of plantation buildings describe spatial practices of power and the clever concealment of labor upon which that power was based. Living spaces were purposefully obscured in everyday life, save for surveillance devices such as a bell tower to which only the planters had access. Landowners also placed buildings and manipulated landscapes to be in sight of each other, allowing visual or aural communication. In contexts where an enslaved labor force outnumbered those who claimed ownership over them ten-to-one, such communication allowed planters to exert control and aid each other during rebellions.[75] Plantations were also assemblages of the insecure because of what the crop boom entailed for those who labored in them.

Securing the Plantation

Moments of agricultural intensification, like the sugar revolution, are subjects on which archaeologists have focused considerable energies. Archaeologists define agricultural intensification as "attempts to increase concentration of production" through the manipulation of space, labor, and technology.[76] For some, land as a container of resources, including soils, vegetation, animals, minerals, and water, has value in and of itself, but can only be fully realized through its management and modification.[77] This approach maps well onto plantation studies where proxies, including architecture and landscape features for which we have a general sense of labor requirements and productivity, can suggest intensification.[78] Economic and social historians have carefully mapped out the labor requirements for different cash crops. It is taken for granted that the number of workers, the degree of specialization, and the organization of that labor required for cultivating and processing cotton were far less than the requirements for processing coffee or sugar.[79] Detailed analyses of maps and documents have been particularly helpful in describing the material indices of such estates.[80] From these we can infer whether a plantation grew coffee, sugar, cotton, indigo, or tobacco, based on the kind of outbuildings devoted to transforming crops into exportable commodities, and the rough number of laborers employed to cultivate and process those crops. Mapping both the standing and ruined buildings provides different information about the tempo and extent of Dominica's sugar revolution (maps 3.3 and 3.4).

The diversity of structures built in Portsmouth and Soufriere in the years subsequent to 1763 is remarkable (table 3.1). Perhaps the most spectacular ruins are remains of factories. Factories had different building configurations depending on the cash crop being processed. Cotton factories, for example, contained a magazine to remove seeds, and indigo facilities contained vats to soak vegetable

TABLE 3.1. Archaeological evidence of agricultural buildings, landscape features, and village settlements in the Soufrière and Portsmouth enclaves

Enclave	Locus #	Type of Location											Artifact Scatter Density	Approximate Date Range
		BG	BH	MV	WM	CM	EH	DP	AQ	WL	CI	HP		
Soufrière	Bois Cotlette Estate													
	1	1	2	1		1	1	2		1	4	15	>10	1740–1950*
	2											2	>10	1810–1900
	3	1					1				1		>10	1850–1950
	4						1	1					>10	1740–1950*
	5		1			1		1			2	4	>10	1780–1900*
	6A						?						>10	1760–1850
	6B	1					1				1		>10	1760–1850
	7	1					1			1	2	4	>10	1740–1950*
	8	1	1			1	1	1		1	3	?	>10	1780–2000*
	9												NA	NA
	10											?	<10	1780–1850
	11	1	1			1	1				4	3	>10	1760–2000
	12										1	9	<10	1760–1900
	Morne Patate Estate													
	21	1	1			1	1			1	4	1	>10	1740–1950*
	22											16	>10	1740–1890
	23										2		>10	1780–1890
	24		1			1		1			1		>10	1760–1890
	25											1	<10	1760–1850
	26										1	2	>10	1820–2000
	27										1		<10	1780–2000
	28		1		1				1		1		>10	1760–2000*
	29											1	<10	1760–2000

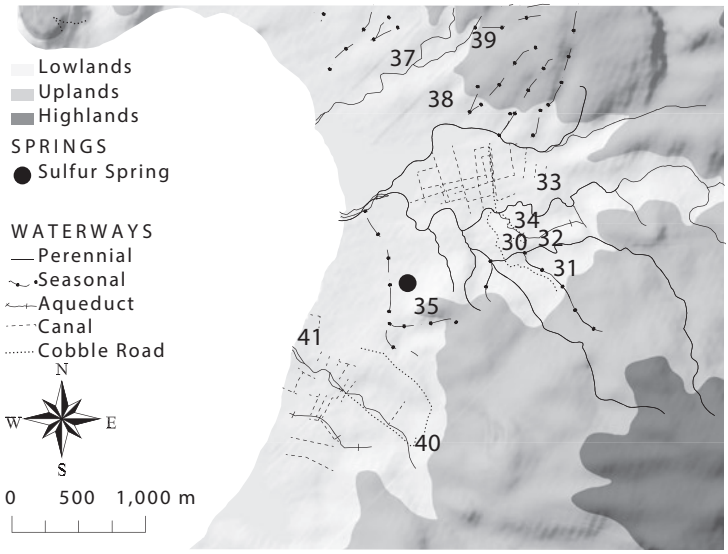
Enclave	Locus #	Type of Location											Artifact Scatter Density	Approximate Date Range
		BG	BH	MV	WM	CM	EH	DP	AQ	WL	CI	HP		
Portsmouth	Sugarloaf Estate													
	30				1		1		1		2	16	>10	1760–1834
	31												<10	1780–1834
	32											3	<10	1780–1834
	33						1						>10	1780–1850
	34		2		2		1		1				>10	1780–1890*
	35						?				?		<10	NA
	36												<10	1780–?
	37						1						<10	NA
	38								1		1		<10	NA
	39										?		>10	1760–2000
	40						1						NA	1760–2000
	41		1		1								NA	1760–2000
	42		1		1		?						<10	NA
	43		1		1								<10	NA
	44				1								>10	1760–1900*
	45				1	1							>10	1760–1900*
	Café Estate													
	46	1				1	1				2	3	>10	1780–2000

NOTE: Loci correspond to identification numbers of archaeological examples in Maps 3.3 and 3.4: Boucan and Glacee (BG), Boiling House (BH), Wind Mill (MV), Water Mill (WM), Cattle Mill (CM), Estate House or Manager's House (EH), Dew Pond (DP), Aqueduct (AQ), Well (WL), Cistern (CI), and House Platform (HP). The date range is approximated based on associated artifacts and documented events. "*" indicates the presence at the site of pre-Columbian material. "?" refers to an archaeological feature reported by a community member but not confirmed by a member of the archaeological team. Artifact scatter is designated as greater or lesser than ten per one square meter.

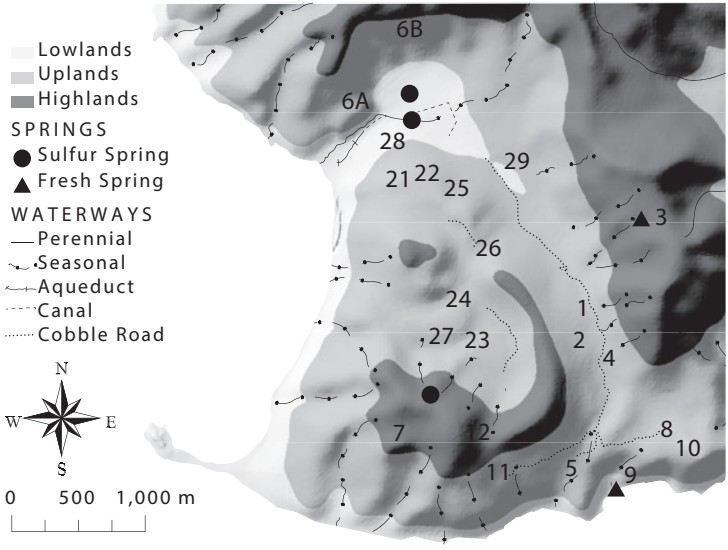
matter. Coffee factories included a structure that contained trays for drying coffee beans (*boucan*), adjacent to a paved open area (*glacee*) where those beans were dried during sunny days, and a mill (*moulin*) in which water was filled to remove the fleshy pulp from the seed. Sugar factories also had mills to express juice from the cane, and a platform (*batterie*) with kettles in which cane juice was slowly boiled into a cane slurry of molasses and sugar (map 3.3). All of the sugar factories in these two enclaves were built in the years immediately following annexation and used different methods to crush the cane. Four in the low-lying plains of Portsmouth (3) and Soufriere (1) were quite large and employed a water wheel to power the rollers. Four more, located in the uplands of Soufriere, employed cattle mills to crush the sugar cane. Only one sugar estate, also located in the Soufriere uplands, employed a windmill, and it is unclear the degree to which it ever operated.

Factories drink and feed off the land, often creating the conditions for soil displacement. Soil erosion can undermine and bury foundations on the upslope and downslope sides of buildings. As part of standard practice in survey archaeology, insights gained from geophysical testing and subsequent analysis of soil profiles show how, in the case of one of the low-lying estates, erosion, brought about by precipitation, damaged the complex of structures associated with the sugar mill. One of the walls of the wheelhouse at Sugarloaf's water mill in Portsmouth had subsided and required repair by 1820. In the uplands of Soufriere, it appears that adjustments were made at about the same time. There was clear evidence, in the form of larger and partially buried masonry structure at one of the upland sugar factories, that the first boiling house, associated with a windmill, was also abandoned in 1810. Productivity might be measured by the size of the factory and the number of "coppers," or cauldrons, used to reduce cane juice into a slurry of sugar and molasses.[81] Mapping these buildings in a matrix of time and space allows us to detail when general labor requirements increased for workers.

Two expansive aqueduct systems characterize some of the hydrosocial manipulations. In each enclave, they began upstream in the drainage system, relying on a weir to divert water into a surface-level channel. For the most part, these systems remained parallel to the river system and along a slight downward gradient. The channels followed the contours of the terrain and relied on bridgework when the terrain met a steep slope or attempted to bridge other features, including ox-cart roads. Because of the steep gradient, the distances traversed by these aqueducts were not far, but the amount of construction and landscape manipulation was still extensive. Before the waterwheel, large tanks allowed sediment to settle and mill operators to control the flow of the water.



Map 3.3. Landscape and waterway features in Portsmouth located during the course of archaeological survey. See table 3.1 for identification of features related to each location. Not shown on the map are loci 40, 42, 43, 44, and 45. Illustration by author.



Map 3.4. Landscape and waterway features in Soufriere located during the course of archaeological survey. See table 3.1 for identification of features related to each location. Illustration by author.

Numerous patches of sunken path, cobbled road, and railroad dotted the landscape. These interconnected concourses took advantage of surface contours to find a way from one point to another, while simultaneously shaping those contours over the course of use. Atwood lamented the dangerous roads, characterized as being "in general very steep ascent; narrow, and subject to breaking in."[82] At the time, two major roads connected Roseau with the windward side of the island, and one connected to Portsmouth. Other roads described by Atwood were never engineered or designed. They were built over many years by water erosion, foot traffic, and foraging animals, especially the medium-sized goats and pigs that Europeans brought with them to the island. Foot traffic compacts the soil underneath it, making it difficult for plants to grow and leaving the soil unanchored to the substratum. Water erosion speeds up this process and makes some stretches little more than barren wastelands.

Atwood was also alluding to the predicament of building roads on the island. This was not a neutral act. Roads were part of colonizing narratives from the beginning. Early maps of the island depict three roads during the French occupation of the island before 1763. Joseph Byres drew "Three Chain lands" running in a sixty-six-foot band parallel to the seashore surrounding Dominica. They were designed to enable the Crown to establish fortifications and build roads.[83] Using and reusing paths animals and humans had taken for centuries is one thing; shaping the terrain to build new roads on dynamic and unstable earth is another. Leveling stretches of land to make passage easy creates conditions that facilitate landslides during heavy rains. In this way, roads behave very much like hollow-ways, or sunken paths that take on a life of their own "within the dynamic processes of landscape change."[84]

A change in buildings, or indeed in the position of those buildings, could represent a massive disruption in the political as well as the material landscape, to the benefit of some and the detriment of others. The flurry of construction between 1763 and 1780 was truly a crop boom, where the built landscape was fashioned to grow, process, and move sugar cane. Evidence for the age of these roads, aqueducts, and factories comes from literary and archaeological sources. Estate owners financed factories, aqueducts, and roads. As such, they are often described in instructions to estate managers, as in the case of Richard Neave's property, Sugarloaf. They are also "improvements" that add value to the land. At Sugarloaf, Bois Cotlette, and Morne Patate, "plantation" roads were listed in probates and inventories during land transfers and marriages. Because many of these roads were "engineered," material culture recovered underneath them during excavation reveals the approximate date at which they were laid down.

Stretches of cobble road mapped at Sugarloaf, Bois Cotlette, Morne Patate, and Morne Rouge were part of the archaeological horizon associated with the sugar revolution. The material structures and associated soils all provide evidence for the dynamic and changing relationships between people and the land after their construction.

Securing the Land

Discarded artifacts associated with household practices speak to an intensification of settlement in the last quarter of the eighteenth century. During our survey, we found material culture on the surface of recently turned-over soil, in burrow holes made by rodents and crabs, or next to the roots of trees, suggesting the presence of past settlements, both colonial and pre-colonial. Durable objects, including pottery and glass, are relatively easy to see in turned-over soil. These objects were likely discarded, left behind, or forgotten as some past person was walking the land, tending fields, or traveling from one location to another. We delineated any area with more than ten artifacts per square meter as suggestive of a potential settlement, one of several criteria we used for identifying sites. Areas with fewer than ten were equally important, for reasons other than habitation. These could be places where laborers sought temporary shade and relaxation in the cane fields or coffee grounds during their midday meal. They could also be refuge sites, away from and out of sight of places where estate owners and managers lived. All of these features intensified during the sugar revolution.

Landscape features included house platforms, agricultural terraces, springs, rivers, channels, and ponds. Some of these features were relatively easy to identify: loose stones were arranged to create terraces or charcoal pits, slopes carved to create house platforms and road, lines of fast-growing trees planted as windbreaks to protect fields, and channels dug into the ground to circulate water away from agricultural fields saturated by November rains. Other features are less easy to identify. The hills within Portsmouth and Soufriere contain a variety of landscape features, common to many Eastern Caribbean islands, that were significant to past inhabitants. Particular trees were planted in fields to provide shade under the noonday sun. Loose stones could be arranged to retain soil recently turned over to plant root crops on slopes. In order to make way for agricultural fields, tree stumps could be burned in shallow hollows, and the charcoal could be used to feed cooking fires. People who built dew ponds, for example, took advantage of low-lying flat areas (*fondes*) surrounded by hills. They excavated or widened these shallow depressions and lined them so they retained water. In areas where soil does not drain well, gullies created by heavy rains could

be channeled to create drainage systems that moved standing water away from houses or out of fields.

The patches of land considered arable in the Eastern Caribbean are diverse, dynamic, and adaptable to a wide variety of purposes. Nowhere does this seem more the case than in Dominica, where the confluence of heavy precipitation and an active geological context produce fluid and seemingly unstable soils. The instability of these soils and their ability to yield cannot be entirely divorced from human activity, however. Expansive forests with gum trees, mangroves, and tropical hardwoods covered the diverse topography of the Nature Island, and large-scale manipulation of the land, performed mostly by enslaved Africans, was required before planting could begin. Consequently, the sugar revolution was in some ways a "multicultural dialogue" on land cultivation, relying on African and Kalinago agricultural strategies in order to restructure the landscape.[85] As I mentioned in the previous chapter, both the Kalinago and the enslaved Africans working on the island had their own ways of categorizing soils, principles of planting, and best practices for managing the land. Such insights bend our gaze toward a plantation not as a single entity or site, but as an "assemblage of things." The construction of villages, terraces, factories, large plots of pavement, aqueducts, cisterns, and roads was fused with changes in soil dynamics.

A productive definition of land is "a physical composite of microbes, soils, flora, terraces, and canals, which can act in particular ways and affect politics because of how they are entrained in an ecological and social context."[86] Understanding soil as a cultural, political, and natural product is as important as considering it primordial matter from which culture is born. For example, the proxies of intensification do not necessarily need to be as visible. Concentrations of lead increased in soils surrounding factories where sugar was distilled.[87] Used in flanges and pipes containing the precious sugar syrup as it traveled and transformed into a commodifiable product, lead was a crucial building material. It also had the unknown consequence of contaminating water supplies and liquor that enslaved laborers might drink.

According to colonizing narratives, the settlement pattern and organization of plantations differed depending on the enclave, the background of its inhabitants, and its potential for growing crops. French planters had cultivated coffee since the 1740s, but it was not until the sugar revolution that coffee was officially endorsed as an agricultural product. For Young, existing French planters and less wealthy British subjects benefited most from the different regimes of labor, soil conditions, and water needs of coffee. Dominica's hilly uplands aligned with contemporary ideas about ideal conditions for the cultivation of coffee. John

Ellis, a contemporary and author of *An Historical Account of Coffee* recommends that "light soil, dry and elevated slopes" produce superior coffee beans in greater quantities and "low, fertile and moist" soil is "bad," producing an "insipid berry" in lesser quantities.[88] In a "dry, gravelly or mixed soil," much like Soufriere's, the plant remains short (under five feet) and its berries are smaller, with less pulp and greater aroma.[89] These characteristics were advantageous, as the berries were easier to harvest and process into coffee beans. As an island with lands deemed suitable for both coffee and sugar, Dominican lands were purchased on the markets with the hope they would realize profits for their owners. Because these early French settlers were so successful, Young felt that coffee was a way for would-be smallholders to improve themselves and the land.

Young also argued that absentee British planters and newly arrived British planters could take advantage of "valleys, luxuriant in their soil, and well-watered with fine rivers" for sugar plantations. Additionally, cutting down trees on these low-lying and well-drained soils to make way for fields provided timber, "useful in erecting and repairing houses, mills, and sugar works."[90] These assertions were in keeping with treatises on planting at the time. J. B. Moreton, in his 1793 manual *West India Customs and Manners,* describes "brick mould soil" as "good," needing no manure, which would require "there must be cattle pens contiguous to every piece intended for holing, and a number of cattle negroes, cattle, and wanes, employed for several weeks, carrying canetops, grass and vines to them."[91] These iron and aluminum-rich soils are common in the low-lying valleys in Dominica. According to Moreton, each acre in such geography could contain up to 3,555 holes. While possible, he argued that plantations on mountainous land were less productive. "Mountainous plantations require more cultivation, manure, and labour than others."[92]

Beyond the physical infrastructure of factories, roads, and aqueducts, the cost of establishing a sugar plantation was in the preparation of the soil, to take advantage of its latency. Improving the land involved cutting down trees, digging cane holes, and fertilizing the fields. Fertilizing the soil was the only way for new owners to take advantage of the land and its untapped resources. To enrich depleted soil, planters and slaves relied on a variety of strategies. Manure was a principal method of recharging the soil. Bryan Edwards describes five sources of manure: "vegetable ashes drawn from the boiling house," "Feculuncies discharged from the still house, mixed with rubbish of buildings," "the decayed leaves and stems of cane," "dung obtained from horse and mule stables, and from moveable pens," and "good mould (soil) collected in gullies and thrown into cattle pens."[93] It took six laborers the better part of a day to accomplish this. It

took an additional ten laborers to manure that acre and four more to cover the acre with field trash to protect the soil.[94]

Agricultural soils are, after all, created by people, but they also influence the people who use them.[95] Soil is alive and unconsolidated matter. Composed of water, air, inorganic and organic elements, it forms at the earth's surface through atmospheric, biological, chemical, geological, and hydrological processes. Because of this, the material is continuously and simultaneously added, removed, and transformed in place. The soil is alive in the sense that it is filled with millions of microorganisms living out their lives—lives that include forming and altering their soil world.[96] Soil is often distinguished from sediment, or displaced soil. Still a collection of organic and inorganic geological material, sediment is characterized by the fact that it has been moved and deposited by wind, water, geological, or human upheaval.[97] Although accumulated over thousands of years and still in the process of formation today, Dominica's deepest deposits appear to be ones containing materials dating to the late eighteenth and early nineteenth centuries. This deep sediment signals the increased rates at which land was modified either by direct human action, as in the building of terraces, or by landslides created through destabilized soils. As such, soil can constitute an ecological and geological force in its own right.

Improving the land involved clearing the forests. Atwood insisted that "to render Dominica a good sugar country . . . extensive forests had to be cleared."[98] Atwood, who admired the "uncommon" size of the trees of Dominica, argued the forests they composed were responsible for excessive fog and rainfall on the island, which rotted canes and created pools of standing water on the "stiff clay" which in turn "chill[ed] the soil."[99] Mangroves, a predominant tree taxon in the Portsmouth enclave, were seen as detrimental to sugar colonies. Thomas Jefferys's *The Natural and Civil History of the French Dominions* (1761) provides some insight about how land might be improved. In this account, Jefferys describes Guadeloupe, which "abounds in great quantities of mangroves and palmettoes, by which the free course of the air being interrupted . . . generates tedious and often fatal disorders." He argues that if the mangroves and palmettoes were cut, "the air would be much more wholesome, and the inconveniences arising to the people from the number of trees would be removed by a constant supply of fresh air."[100]

At the same time, Jefferys recognized drawbacks to deforestation. Later in the treatise, he describes the commune Vieux-Habitants, which at the time of his visit was characterized by sandy soil. This parish that once "appeared as beautiful as any other part of Basse-Terre," was subject to frequent floods and landslides

precipitated by "cutting trees that consolidated banks" of the rivière du Plessis.[101] Soil that was "taxed" or "worn out" could also be employed to grow cotton, manioc, maize, and potatoes [most likely yams].[102] Added to that, many observers, Young included, began to draw connections between deforestation and water availability. They speculated that two severe droughts earlier in the eighteenth century were made especially harsh by the lack of foliage on Antigua and Barbados. So, while clearing the land was important, it had to be done with great care.

The work was hard and those who were tasked with clearing the forests were familiar with neither the terrain nor the labor required of them. Atwood noted, "Many of them [English] brought negros who had only been in the capacities of domestics; some of those banished from other islands for their crimes; and others purchased negros just brought from Africa for the purpose of settling new estates."[103] In addition, those who labored in this capacity "were not used to the climate, which, from the abundance of woods, was so unsettled, that it rained the greatest part of the year; whilst they only had temporary huts covered with branches and leaves of trees to shelter them."[104] The difficult labor combined with the system of subsistence that emerged in situ meant that the environment quickly became enmeshed in the predicament of slavery. In clearing the land, water insecurity was materialized for those relying on land and its resources to make a living. By 1787, residents Alex Stewart and Thomas Beech complained about, "the heavy expences and labor attendant on clearing and settling," and how the "infertility of the soil" led to an impoverished populace.[105]

The loose soils of Soufriere and the sticky clays of Portsmouth are not preternaturally infertile, as suggested by Beech and Stewart. Rather, there was a consequence to planting sugar in them. At Morne Patate, clearing trees planted or curated as wind breaks, increased soil loss on the surface, resulting in a denuded landscape. What was also lost in clearing the trees were the roots that anchored the topsoil to the ashy subsoil. This is an effect we can document in the archaeological record. As is standard practice in archaeological survey, test excavations are conducted at regular intervals. These indicate what is underneath the surface, including sediment depth. One of the surprising findings of testing in the uplands of Soufriere was the depth of intact deposits dating to the late eighteenth century. In the case of Morne Patate, many of the houses were built one on top of the other in layers between 40 centimeters and 150 centimeters. Under these strata of soil, the layer of pyroclastic flow that dates to the fifteenth century (see chapter 2) was only ten centimeters below that.[106] Along the same lines, but manifested differently, were the depth of soils at Sugarloaf estate. In the slave village, sediment depth was zero to fifteen centimeters deep.

Together, the observations above indicate highly unstable soils that began to erode in the years just after the 1760s. As noted elsewhere, productivity did not always follow from intensification of labor.[107] In one case, this meant the loss of soil, and in the other, the burying of soils. This distinction is crucial because workers still needed to be fed despite poor returns on a plantation owner's investment. The soil horizons also speak to changes in the way people used the land. When land was organized through the small-scale French plantations, mixed agriculture, including root crops and cereals, was organized in fields near the houses where workers and plantation owners lived. After the plans of English-speaking elites materialized in the landscape, much of the land on which food for everyday life was grown moved some distance away, in woodlands on the margins of the estate.

Artifact Scatters

Most of the material structures associated with the sugar revolution can be understood only in relation to who used them. At some locations, there are multiple lines of evidence about daily life that provide important points of analysis and comparison.[108] On most British West Indian islands, planters provided building materials and a location for enslaved workers to build a village. The workers were left to decide how to organize it.[109] Towns, or settlements with parish churches, anchorages, and some commercial structures, were the sites of greatest intensity of archaeological materials (though also the most disturbed from centuries of occupation). Villages, or areas where regimented housing of enslaved workers was once located, were the sites with the greatest density of artifacts, outside of towns in Portsmouth and Soufriere (more than ten artifacts per meter squared). Because of the steep slopes, the shape and organization of these villages can be inferred. Provision grounds—areas where those who lived in the regimented villages set up temporary shacks while they grew food in their "free time"—were sites of less dense scatters (fewer than ten artifacts per meter squared). Many of these artifacts are broken up into pieces rarely larger than a thumbnail, but still retain characteristics that reveal their origin and time of use. Importantly, these artifact scatters contain high quantities of goods associated with the sugar revolution.

Chronologically sensitive materials deposited at the time of building construction provide a mechanism to study the tempo and accretion of buildings and identify rapid phases of construction. Ceramics made in Europe are perhaps the most useful in this regard. Recovered tableware was made, with few exceptions, in England or France. The sugar revolution in Dominica loosely coincided

with dramatic changes in the manufacture and style of the tableware available in these places. Cream-colored earthenware made in Staffordshire became a ubiquitous form of material culture found throughout the Atlantic world.[110] Ceramics from the second and third quarter of the eighteenth century in the French Atlantic came in many varieties, including some that had a lead glaze on one side and a tin enamel on the other.[111] The popularity of these wares and the speed at which they entered household assemblages in the eighteenth century meant that deposits could be dated with a degree of accuracy by establishing the average age of recovered ceramics.[112] Variation in such approximations between contemporary sites, according to some, would reflect consumer access based on cost.[113] While this may be the case in some contexts, it does not account for all the manners by which ceramics come to furnish households, or the choices that people make when they purchase goods.[114]

To accommodate the terrain, workers carved terraces into the hillside. In some cases, where stone platforms were used to elevate houses, the relationship between different parts of the yard could be ascertained from the surface. In other cases, detailed excavation to reveal postholes or other evidence of architecture was required to suggest such maps. Not all platforms contained evidence of architecture. Some were most likely gardens attached to a house on a neighboring platform. In all cases, there was evidence that past residents had to adjust over time. House were rotated, moved, and sometimes abandoned outright. Some conditions that made such adjustments necessary were environmental. Heavy winds and rainfall could bring down trees and instigate landslides. They could also be political. Upon emancipation, many people left their sites of bondage by seeking employment elsewhere and moving to the "Three Chains" set aside for roadways and forts.[115]

Of the landscape features we documented, the one that figures prominently, according to both historical scholarship and the stories that people tell today, is provision grounds and gardens.[116] Gardens were attached to the small houses in which the enslaved lived. Grounds were more difficult to locate. Many of the provision grounds where enslaved laborers made a living were situated in heavily wooded areas of the Soufriere and Portsmouth uplands. Efforts to make soil productive are telltale signs of provision grounds. The soil in Soufriere is shallow. Add to that it is loose, gravelly, and filled with large rocks. Topsoil in the hills above Portsmouth can be equally shallow, with a clayey subsoil. In both cases, the enslaved took steps to stabilize and retain the soil. Depending on the crop, there were many ways to improve the land so the soil would yield. In some areas, slaves prepared the soil and removed large rocks with digging sticks. Trees were

burned, and the charcoal mixed into the soil. To retain soil for growing small plots of land, people piled stones in loosely organized terraces. To enrich the soil, people fertilized the field with animal dung, rotting trash, and mould (soil). In fertilizing, household rubbish, including broken artifacts, might be introduced into garden and provision ground soil. In all cases, slaves took advantage of geographic features such as rock outcrops, slopes, and large trees to make gardens. Late-eighteenth-century gardens are often characterized by loosely prepared soil with relatively fewer rocks, some remains of charcoal, and fewer diagnostic pieces of pottery. Slaves, in improving the land on which they grew provisions, transformed that land intentionally to ease cultivation, which rendered it more visible to the archaeologist.

Provision grounds were one location where slaves attempted to resolve predicaments of security. Workers had to address issues of increasingly insecure soils, eroded by deforestation, to provide food for an increasingly dense population. Their resolutions included cutting woodlands to make way for new crops and growing trees as windbreaks so that new divisions of land could be implemented. Enslaved laborers didn't just chop down trees and begin to grow food. They did so with a design that often secured loose and destabilized soils. That design included decisions about what crops to grow where and the landscape modifications that might best produce a yield. Decisions about land modification and plant arrangement also created a secure space, where the planter's gaze was obscured. Consequently, these sites were places of refuge, where enslaved laborers from different estates could meet, re-create elements of everyday life, and pursue them outside the planter's scrutiny.

Enslaved laborers were forced to solve problems of soil erosion, soil exhaustion, and water insecurity created by intense agricultural production—not only to facilitate the cultivation of cash crops, but also to feed themselves through part-time food cultivation. Because the sugar revolution had implications for land and its resources, it is important to understand how water was made available for the sugar revolution and the changing requirements for water that this transformation entailed. Water was one of many substances fundamental to sugar production, and water was also central to reproduction. It is an "uncooperative commodity" in its potential as a medium for health risks, and in that its materiality inhibits direct competition and facilitates political resistance. In the last quarter of the eighteenth century, an expanding agro-industrial economy and a growing, mostly enslaved population created pressure on the amount of fresh water available for residents of Dominica. In what follows, I show how enslaved laborers resolved this predicament.

The Hydrosocial Plantation

There is general consensus that Caribbean planters located laborer villages, industrial works, and estate houses to take advantage of topography, prevailing winds, and proximity to fresh water.[117] They depended on rivers, wells, canals, or ponds to supply water for people, animals, and factories built to crush, boil, and refine sugar.[118] This is certainly true in Dominica. In Portsmouth, the sugar estates took advantage of the river systems to power water mills, fill reservoirs, and feed livestock. Workers relied on rivers for drinking, cooking, bathing, and washing. In Soufriere, where there was only one river, fed by a sulfur spring, estate houses were located close to, but upslope from, low lying areas. Three of the estates had freshwater springs within their property boundaries, but in difficult-to-reach places. In this enclave, cisterns of varying ages dotted the landscape.

In general, the switch to sugar cane taxed existing water management infrastructure, including capture, irrigation, and storage. Sugar cane requires more water to grow than coffee, cocoa, and root crops, which formed the agricultural base of colonial settlements before 1763. The World Wildlife Fund identified sugar cane, along with cotton, rice, and wheat, as among the world's thirstiest monocultures.[119] Signaling the switch to a thirstier crop, archaeological materials document a change in land use in upland and lowland areas accompanying the shift to sugar production.

Sugar cane needed more water to process the grass into syrup, molasses, sugar, and rum. The amount depended on the method of juice extraction, crystallization, and distillation employed. For example, in just the boiling process, approximately 180 liters of water were required daily to clean and season the boiling cauldron used to concentrate cane juice.[120] Distillation of molasses into rum required an additional volume of water to cool the evaporate into rum.[121] Sugar cane production also entailed more nonhuman labor. According to an inventory taken in 1769, Bois Cotlette had thirteen cattle, two horses, and ten sheep.[122] Horses and oxen alone required 913 liters of water per day.[123] Sugar production also involved more human labor. Sugarcane demanded more time and energy to cultivate than coffee, cocoa, or cotton.[124] Consequently, by 1810 the slave population in Dominica had risen from 3,500 to 19,000.[125] In Soufriere, sugar-producing estates were home to 737 of 1,010 slaves.[126] Rising numbers of enslaved peoples also meant increasing need for water in Dominica. The water needs of the enslaved were in direct competition with the water needs of sugar, and this created scarcity for those deemed most expendable by planters.

This last point requires further elaboration. There is no consensus on minimum water needs for an individual or household.[127] Most calculations underestimate total body water and free water and do not account for daily intake from respiration and food. Additionally, eighteenth-century water requirements varied greatly depending on conceptions of cleanliness and hygiene. Conservatively, if we take two liters per day per person, we can estimate that the island's new laboring population needed 29,000 liters per day. While patterns of rainfall meant this was not a problem for most of the island, on the dry southwest coast (where Soufriere is located), water was scarce. While some of this water was obtained from imported and domestic liquors like gin and rum, and beverages made from available resources including coconuts, fruit, and bark, many relied on sourcing water from rivers, springs, or ponds.

Access to surface water and groundwater—and seasonal precipitation cycles necessary to provide drinking water and sustain export agriculture and part-time food production—varied considerably within and between eighteenth-century Caribbean colonies. Many islands (e.g., Antigua, St. John, Saba) had limited reliable freshwater sources to begin with. People living on them relied on seasonal watercourses, human-made water holes, and cisterns. Slaves were more susceptible to major shifts in seasonal or long-term rainfall patterns, as their sanitation, food, and drink relied on annual precipitation cycles. On other islands (e.g., Jamaica, Hispaniola, Dominica) relative scarcity and availability of fresh water varied depending on where people lived. Despite being a "wet island" (some parts receive 9,000 mm of rain per year), parts of Dominica contain little surface water and receive little rain (1,800 mm per year). The dry season (ca. January/February to May/June) creates a "green desert" where temperatures rise. Yet slaves still needed water for drinking, washing, and food preparation, to make daub or mortar for houses, and for other domestic activities. This put increased pressure on precious drinking water.

Seasonal cycles of rainfall and agricultural activity were critical factors shaping the amount of available groundwater in the aquifer. Attached to factories and estate houses were architectural features devoted to water retrieval, channeling, or containment. Cisterns appeared as isolated structures near factories or houses. The rain that fell onto the roofs of factories and houses was diverted to the cisterns through a complex system of gutters. Cisterns came in three varieties. On most estates (Picard, Sugarloaf, Point Round, Chance, Morne Patate, Morne Rouge, Bois Cotlette, Soufriere, Petit Coulibri), masons appear to have built cisterns above ground as rectangular structures. Factories devoted to processing sugar (Sugarloaf, Chance, Petit Coulibri, Bois Cotlette, Soufriere)

had cisterns attached to the boiling house. These are "snake" cisterns, through which evaporated alcohol was cooled down to create a distilled liquor. In the Portsmouth enclave, the water tables near slave villages were relatively shallow. Here, we saw cisterns only associated with sugar processing and consumption by residents of the estate house. Indeed, water insecurity engendered creative ways to gather and store water, but access to this water was affected by race, class, and gender in a system that prioritized the needs of capital and planters.

Soufriere contains shallow perched water tables and a much deeper aquifer. It appears that early French settlers in Soufriere took advantage of these perched water tables in response to limited access to potable surface water. The surface survey revealed evidence of wells at Bois Cotlette, Morne Patate, Morne Rouge, and Crabier. In some cases, wells were filled in, as in the case of Petite Coulibri and Bois Cotlette. At Crabier and Morne Patate, these wells were lined with plaster and turned into cisterns. The relationship between sugar cane, precipitation, and water tables is useful in understanding why these wells might have been sealed. Noël Deerr estimated that for every acre of land, approximately eleven million liters of water were required to ensure a successful crop.[128] Portsmouth and Soufriere received almost ten times that amount. For example, in 1894, estates in Soufriere received 2,000 mm of rain, while estates in Portsmouth's enclave received 2,200 mm of rain. The rainy season accounted for almost 80 percent of 1894's rainfall. This precipitation was significant for recharging the water table. Soils of Portsmouth drained poorly. In the rocky protosols of Soufriere, water drained quickly. This, in addition to the requirements of sugar production, meant that the perched water tables failed to get recharged.

Sugarcane cultivation was profoundly structured by water and climate. The beginning of the rainy season marked the onset of intensive agricultural activities. This included digging up cane stumps, digging cane holes, weeding cane holes, planting cane, manuring, and covering the cane fields.[129] For instance, Colthurst says one person could dig 160 cane holes in light hillside land and 85 holes in flat-bottom land of stiff clay daily. Some of these efforts were taxing and made more dangerous by the rain. On the slopes of Soufriere, rainfall meant that landslides were always a possibility. Stone terraces prevented soil loss and captured water for the plants. In Portsmouth, rain could fill the cane holes with stagnant water, rotting the young sugar canes. In Portsmouth, technicians designed and enslaved laborers built a complicated system of canals, dikes, and trenches to control water levels on Sugarloaf Estate. Enslaved laborers had to maintain canals and regulate ditches and dikes to allow for irrigation in the dry season and drainage in the wet season. The rainy season also signaled the start of hurricane season,

in which the slaves' crops were vulnerable. High winds would blow over trees, including plantains and breadfruit. If slaves were unable to reach the grounds in time, root crops such as tania and dasheen would rot. In times like these, the needs of the estate were prioritized, intensifying the insecurity of the enslaved.

The onset of the dry season also affected water availability. Activities commenced in the dry season—including the harvesting of cane, the crushing of the stalks, and the rendering of the cane juice into export products—required considerable water for humans, animals, and machinery. According to Colthurst, it took a team of twenty-four people to cut and load two acres of cane in one day, "30 where it [cane] is rank and green. It would take a further four to bring the canes, 'not more than a half mile' to the mill. One person was required to bring fuel for the boiling house. A further 33 people worked in the factory on jobs that included boilers, stokers, and boatswains."[130] While the amount of precipitation in the dry season varied from year to year, enclaves such as Soufriere could receive as little as two millimeters of rain between January and June. Planters concerned about the lack of groundwater commissioned above-and below-ground cisterns. Cisterns were constructed adjacent to the estate house and industrial buildings and collected the rain through gutters and channels. Not everyone had access to this water. For instance, in nearby Barbados, water collected in cisterns was intended for a plantation's white population, reinforcing distinctions between enslaved and free people.[131] Planters also used enslaved labor to manipulate landscape features to capture and store rainfall. These included dry stone terraces to retain soil and trap water for sugar cane and ponds that were either excavated or enlarged.[132] Some of these ponds were also lined with clay and during the dry season provided at least some, if not most, water for enslaved people, cattle, and machinery. As such, storage and transport of the pond water became essential to ensure social reproduction of enslaved peoples.

While many objects were part of peoples' waterways, hoops from barrels, ceramic vessels, and glass bottles are the only items that leave residues easily recovered in the archaeological record. Of these, bottle glass is the most ubiquitous. Bottle glass is statistically the most consistently discarded material culture item in contexts associated with enslaved life.[133] Villagers used glass bottles for many reasons, including holding liquor and infusing the liquid with local herbs for medicinal purposes. They also curated readily available and fragile wine and case bottles to store water. Gabriel Debien noted that the enslaved, who could not afford water jars in Saint-Domingue, used glass bottles to store and serve water.[134]

In Dominica, the archaeological record of laborer villages occupied between 1763 and 1830 allows us to look at the collection, distribution, and use of water in

Soufriere and Portsmouth. By the last quarter of the eighteenth century, estates in both enclaves were producing molasses, sugar, and rum for export. There were critical differences in access to groundwater and surface water, and the need to manage rainfall, for Bois Cotlette in Soufriere and Sugarloaf in Portsmouth. Bois Cotlette's village was located between one and a half and two and a half kilometers from the freshwater springs. Paths taken required a vertical ascent or descent of three hundred to five hundred meters. Anywhere between 25 and 96 enslaved laborers lived in the estate in the years after the sugar revolution.[135] Sugarloaf's village was close to many freshwater sources—between twenty and two hundred meters. The village was home to between 137 and 262 enslaved laborers. At both estates, slaves were acutely aware of their need for water and the effects of its insecurity (figures 3.3 and 3.4).

Excavations of similar villages produce a suite of materials in common, including imported tableware from Europe, a mixture of iron and clay cooking pots, tools such as cutlasses and hoes, storage jars for dry goods and liquids, and bottle glass. In short, they partially reflect the many elements of everyday life in the Atlantic world, including peoples' waterways. Because estates in Portsmouth and Soufriere employed the same sampling strategy and methods to archaeologically test the laborer villages, there are comparable sets of evidence to analyze how slaves responded to increased insecurity of water. Given bottle glass's ubiquity and the much denser population at Sugarloaf Estate, it was reasonable to assume we would find nearly twice the amount of bottle glass. Materials recovered from both villages suggest something different, however. At Bois Cotlette, subsurface testing produced over twice the weight of bottle glass. Bottles reflect slave strategies to adapt to Soufriere's dry environment and the distance from the villages to fresh water. At Sugarloaf, the enslaved did not face the same levels of scarcity. While not a complete picture, bottle glass shows how slaves accommodated for vagaries in rainfall and limitations in surface water and groundwater.

Vital to agricultural production, water was also essential for washing, cooking, and drinking. Durable glass bottles were associated with water storage, among other uses, and can help us map the predicaments faced by the enslaved who needed to collect, transport, and store water to live. As a durable form of material culture, bottle glass density can be used to scrutinize differences in water security. In Bois Cotlette, which had more bottle glass than Sugarloaf, people did not have reliable access to fresh water, an insecurity that might have built on and exacerbated existing hierarchies. While the documentary record provides some of this story, material remains enable us to understand some of the complexities on the ground. Assemblages of objects allow us to understand

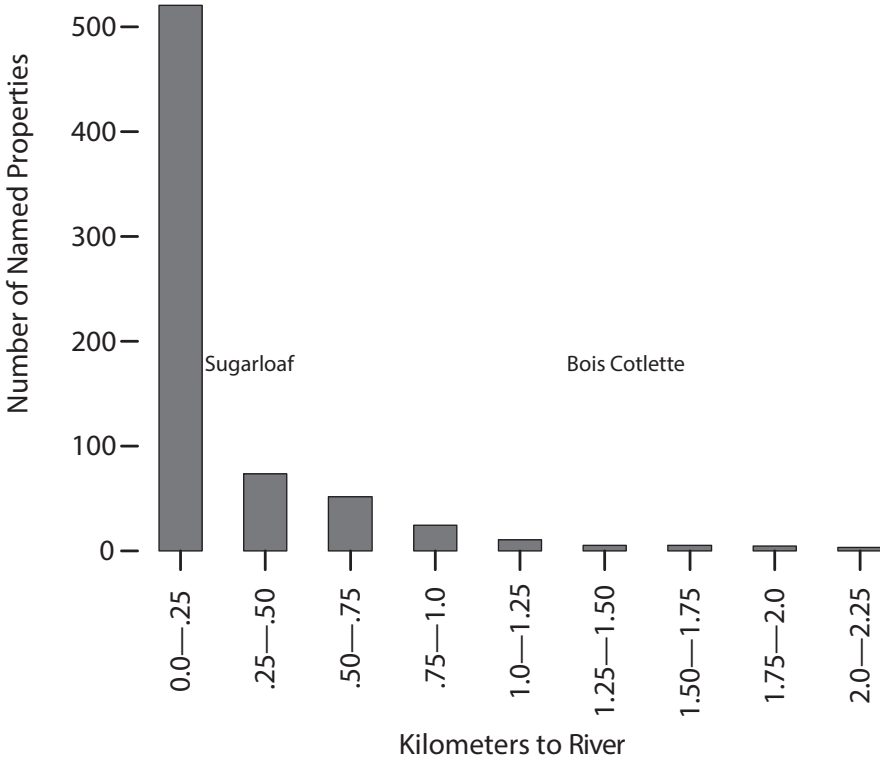


FIGURE 3.3. This histogram tabulates the number of estates labeled on the 1978 Ordinance Survey Map based on their distance to year-round rivers.

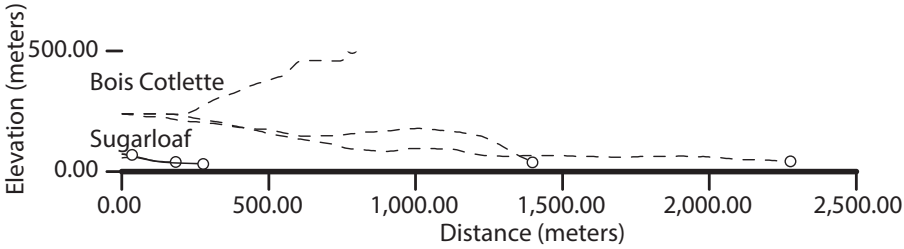


FIGURE 3.4. This line graph illustrates the rise and distance residents had to walk at two estates— Bois Cotlette and Sugarloaf—to reach the closest fresh water source (spring or river). Illustration by author.

social relations on plantations, the need to develop innovative strategies to obtain water, the socializing of needs through objects, and the influence of those objects on daily life.

Conclusion

The landscape created through the plans of English-speaking elites was truly insecure. By linking proprietorship to crops (sugarcane with the British and coffee with the French), linking those crops to soils (sugar cane with lowland soils and coffee with upland soils), and linking the improvement of those soils with enslaved labor, William Young was designing political landscapes. In addition to complaints quoted above, Stewart and Beech describe other predicaments in Dominica, including a slave rebellion, an occupation by France, a fire that destroyed Roseau in 1781, and devastation following two hurricanes.[136] That hurricanes are mentioned in the same breath as arson, rebellion, and war highlights that there is little distinction between natural and political when lives and livelihoods are made insecure.

Because water inscribes itself in the archaeological record in economic, metabolic, and symbolic ways, waterways allow an examination of slavery's predicaments and the assemblages of politics, economy, body, and culture they generated. In Dominica, the effects of changes to the land, including deforestation, soil erosion, and the amount and quality of surface water and groundwater, unfolded slowly and without spectacle. They may have been glossed as a consequence of intense wet seasons, harsh dry seasons, and unpredictable weather events such as hurricanes. Similarly, the population explosion, while sudden, was difficult to see in its entirety from the perspective of any one place. Ultimately, few people on the island lived long enough to see the unfolding of the sugar revolution and feel its effects. Instead, the slow violence was embodied in the changing quality of water, and the greater distances people had to travel to get it. These changes affected those who were bound to the land through enslavement more severely than those they labored for.

Cultivation

CHAPTER 4

Mapping Peripheral Flows

> Great Market day *tout les nègres venent dans la ville & venent lesqueles ils ont. . . .* Negroes Dance to song & Drum excellent time & Men women & Children join together in agreeable variety. At Dr. Clarks Door, 30 Mallatoes [*sic*] & Gentlemen standing on street watching Polly Clark [his wife], who was elegantly dressed in flame coloured silk Jacket trimmed with blue Ribband and rose. Belt of Ribbands in same still. Excellent Beed Bracelet for Wrists with large medal in each. Head covered gracefully with napkin like Highland Crutch but far more gracefully put on with a Rose inside of [it]. Mr. Carson —has child 5 months old to a handsome black Girl of Dr. Clarks a native of Antigua—it is Mallatoe a Girl—he does not own it.
>
> —Journal of Jonathan Troup, August 17, 1789

For a newcomer like Jonathan Troup, a weekly market—which was part commercial space and part social scene—was vaguely familiar. Roseau sat upon the alluvial fan, along which were substantial wooden buildings, masonry warehouses, and factories lining the roads. Shabby houses, made of either planks or a wooden lattice plastered with daub, sat at the peripheries of those buildings. Alongside the warehouses on the coastal strip, small dugout fishing boats rested on the beach. To the south of the town was a large fort commissioned by Governor Young in 1770. It housed the second-largest garrison of troops and bore the recognizable bastions and sloped walls typical of contemporary fortifications. From this vantage, a soldier could clearly see Soufriere. The market square and the small canoes served as infrastructure crucial to the colony's success but nevertheless were poorly documented.

Goods traded in the market came from distant shores in the Atlantic and Indian Oceans, or from the provision grounds of estates in the Roseau River Valley. Polly Clark's fashionable accessories spoke to a robust trade that Dominica

had with the outside world, and the desire by Britain to control it. While illustrating relationships between groups differently positioned in a deeply stratified society, they also spoke to complex interactions beyond Dominica. The "Highland Crutch" was a *tignon*. In Louisiana, Martinique, Guadeloupe, and Dominica, women tied a square of fabric on their heads in particular ways to convey information such as age, marital status, or other hidden messages.[1] This fabric, along with the silk ribbons, was readily available through French merchants from Martinique. The silk itself and the cotton cloth, known as madras, were imported through European ports in the Indian Ocean. Troup's knowledge of French served him well as he haggled over prices of goods sold by enslaved laborers. Troup frequently purchased crafts made and surplus provisions grown by them during their "free" time. He could also purchase goods from overseas, including fiddle strings and fine fabrics. While some of these goods wound up in these markets through perfectly legal channels, some speak to other kinds of trade, less well documented, but nonetheless important for the everyday life of the colony. Accounts such as Troup's prompt the questions: To what degree did political and social boundaries affect the mobility of goods? Moreover, how did the mobility of goods beyond these boundaries shape an individual's identity?

Mobility became a principal predicament of enslavement, as it structured the geographies of subsistence and trade in the Eastern Caribbean. The mapped networks presented here connected the regulated villages of Soufriere, Portsmouth, and beyond through goods left behind. The plans of English-speaking elites and their materialization in the Dominican landscape altered some of the fundamental structures of subsistence and trade in Dominica. By investing in lucrative, yet risky, cash crops, planters reduced the number of acres upon which food was grown before 1763, and moved food cultivation to distant and hilly plots in the forested interior of the island. The method of self-provisioning enacted through laws promulgated by colonial legislatures was premised on a degree of mobility by the enslaved. Enslaved laborers moved from poorly scrutinized parts of the interior to commercial centers in Roseau, Portsmouth, and neighboring islands. In the markets, they came in contact with other plantation workers, members of the plantocracy, merchants from Dominica and other islands, and townsfolk—both free and enslaved. This system, which emerged in situ, stretched the geography of slave life well beyond the plantation through which it was typically defined, and to places they weren't always meant to be. In the forested interior, they might have commercial and social exchanges with workers from other plantations and people, like maroons, who secured their freedom by fleeing the plantation and making a living in the forested interior.

The other side of the predicament was the kinds of social infrastructure it created. Waterways connected slaves in enclaves of Dominica with each other and neighboring islands and shaped regional markets and the peripheral flow of objects. Social relations created through social action and interaction refashion social idioms, including slavery or kinship, and the relationships they promote over time and space. As access to fresh water became increasingly limited, people relied on objects and features to capture, store, and distribute water to meet metabolic demands. Enslaved laborers relied on regional markets both to generate capital and to obtain vessels to capture, store, and distribute water. Glass bottles, ceramic vessels, gourds, and calabashes needed for storage cost money for enslaved laborers, and required an investment of time. Central to transporting such objects, waterways also circulated the shared meanings and taxonomies of water these objects carried.

Predicament of Mobility

We have seen that people faced a predicament when they competed with industry for land and its resources, including water. Slavery's predicament, governed by market regulations and principled arguments, can emerge only when land and its resources become limited goods. But the emergence of land and its resources as limited goods is not enough to impart the kind of governance that distinguishes slavery's predicament and makes its violence so pernicious. Only when a person is forced to break the law, with corporal or capital implications, to make a living can the violence reproduce itself. In these conditions, the settlements described in the previous chapter and the people who lived on them relied on overlapping commercial networks to feed themselves, furnish their households, and accumulate wealth. Latitude to employ the networks to feed, furnish, and accumulate wealth was limited for a vast majority of Caribbean people, and the specter of violence was ever present.

The cost of reproduction was externalized for plantation owners by relying, at least partially, on slaves to grow their food and furnish their households. As political scientist Isabella Bakker argues, the boundary created between production and social reproduction makes firms profitable by externalizing the costs of food, shelter, clothing, and health care.[2] Feminist approaches to commodity chain analysis have demonstrated the necessity for locating such expenses in nonwage labor of households and "informal" economies.[3] Scholars here are not so much thinking of slavery when they employ "nonwage" labor. Rather, they describe work unaccounted for in the formal economy.[4] The cost of social

reproduction was mainly borne through the unaccounted labor of slaves, both male and female. This relationship between unaccounted labor and reproduction was a common element in the Atlantic World and was a feature that linked both wage and enslaved laborers, and required mobility.[5] I add to this point by arguing that the predicament of mobility was not the only cost borne by slaves. Provisioning incurred risk of punishment and reprisal as such unexpected economies brought workers into legally fraught places and interactions.

The official laws that supported the sugar revolution reduced access to food that was traded and eaten by enslaved and free people living in Dominica and neighboring islands. In some cases, the commerce through which the enslaved sold their food or made a living meant that someone had to transgress a political boundary. Lines, drawn on maps at the conclusion of treaties, created political boundaries. These boundaries, while ideological impositions on the landscape, had a material effect on the way goods circulated. From the perspective of trade regimes and the customs officers that documented the flow of goods in these changing regimes, these boundaries blinked in and out of existence as new treaties were passed. These boundaries also affected the way the circulation of goods was documented. Regimentation of trade made whole populations subject to the vagaries of maritime traffic and local political shifts, unevenly distributing vulnerability and risk.

Borders that Blink

Colonies are more than physical territory and the people attached to it. They are a constellation of ambitions by actors located in various imperial spaces. Constructed as sought-after places, colonies, as imagined by multiple actors in metropolitan drawing rooms, were also lived by those forced to resolve the predicaments those imaginations created. As sites of improvised forms of governance and trade, some colonies are best characterized as "rogue."[6] For their marginalized residents, colonies presented a series of predicaments in everyday life that needed to be resolved. Historical anthropologists have mapped the differences between imperial prescriptions and daily life on the margins to understand how colonies operated in practice.[7]

For more than three thousand years, the channel between Dominica and Martinique represented a causeway of people and goods. Even when European treatises imposed official neutrality on islands where England, France, and Indigenous people vied for control, this did not discourage trade with contested islands or European settlement. In 1674, Grenada and St. Lucia were made dependencies of Martinique. The French followed suit with Dominica in 1728,

when the governor installed a commandant in Roseau. This move signaled a formalization of casual colonization of the island by poor whites and free blacks, extending *l'Exclusif* to include Dominica. At the same time, Béké in Martinique guarded their monopoly, prohibiting the establishment of sugar estates on Dominica. The Béké were a rarified planter elite with enormous political sway over the social, political, and economic climate of the French islands. They encouraged the cultivation of provisions for the ordinaire and other, more experimental crops, such as coffee. This casual colony amplified the exports of established colonies and some families who maintained properties on both islands, while simultaneously augmenting the internal economy with food and other goods required to reproduce the population. When Britain annexed Dominica in 1763, a political boundary blinked into existence, creating new frictions. When France wrested control of the island during the American Revolution in 1778, the border blinked out. When the Treaty of Paris (1783) returned the island to Britain, the boundary blinked back into existence. Boundaries blinking into existence created new hazards for those who relied on the exchange of goods across them in everyday life.

Archaeologists interested in political space and ancient and early-modern empires have troubled models in which territory was part and parcel of empires.[8] Conventions of depicting ancient states as bounded territories entail assumptions about how space was experienced, represented, and imagined in past empires.[9] Although borders certainly existed, agents in a variety of positions vis-à-vis power had a complicated relationship with borders. Social archaeology has offered a particularly effective way to describe the "multiplicity of political strategies, as well as anecdotes of contemporary ambitions" in political space.[10] Territorial control and its implications for daily life also vary considerably, but are always framed through relations of power. In short, not all borders are equal in their visibility or contemporary application. In cases where borders are meant to signal contiguous and defined territorial claims, such as early-modern empires controlled by the Dutch, British, and French, most recognize that borders were fluid and porous.

Maps were one way that empires represented political boundaries and regimes of control.[11] Ideally, the maps documented boundaries, aided in territorial negotiation, and symbolized the "economic fortunes at stake" for the bureaucrat, adversary, and well-informed metropolitan reader.[12] Cartographers working through the eighteenth century started to amass topographic details and draw atlases, often under the patronage of their respective crowns. Maps published in Paris and London divided the Eastern Caribbean into Spanish, Dutch, English,

French, and neutral islands. According to these maps, disputed islands such as Dominica could be the sovereign territory of more than one nation. Treaties at the conclusions of war putatively stabilized these boundaries, though not every community viewed such territories as settled accounts. The firm of Thomas Jefferys was primarily responsible for drawing maps of Britain's overseas territories during and after the Seven Years' War.[13] The publisher's maps could be found in the *Gentlemen's Magazine*, the published histories, and, surprisingly, the reference materials of opposing French officers. Although not indicative of any single imperial intention, they did represent a particular imagination born in the metropole that framed the space in which both the planting elite and enslaved laborers experienced island colonies.

In 1763, cartographers imposed something that never existed before on the channels between Dominica and the French islands of Guadeloupe and Martinique—a border. These channels formed a de facto boundary that ideally regulated the movement of goods, people, and ideas. For those who transported goods, the possibility of making money was abundant. Colonizing discourses surrounding the annexation of Dominica emphasized two primary concerns: production of goods based on slavery and the sale of manufactured goods through markets. William Young, as governor of the island, worried about illicit commerce among island residents. In his pamphlet, he asserted that because Dominica was "In the track of vessels from our [British] leeward islands . . . it is admirably well suited for commerce; and contiguous as it were to the French, is ever open to the prostitution of clandestine trade."[14] The border created a predicament for those relying on mobility for social reproduction. It was difficult to cross channels, evade the scrutiny of customs officers, and move cargo safely. For some, getting caught meant a fine and confiscation of goods. For others, it could mean death. It was a trip not to be taken lightly. Yet, such trade was necessary.

Two and a half centuries of European commercial engagement in the Eastern Caribbean set the stage for this border and the predicaments it created for those living on the ground. During the seventeenth and eighteenth centuries, borders gained increasing salience as the mechanism through which European metropoles explained and promoted their commercial interests. An assemblage of policies referred to then and now as mercantilism included monopolizing trade in staples, limiting intercolonial trade, forbidding trade with foreign vessels, and imposing high tariffs on foreign goods. Mercantilism was well suited for colonial empires, but with some alterations.[15] The motivation behind these legislative mechanisms was economic rather than cultural; proponents hoped to maximize the export market for British goods and to minimize potential

competition from the colonies.[16] Windward islands had long coastlines and numerous anchorages, which brought many plantations within easy reach of shipping. This simple geographic feature of islands such as Dominica insinuated their denizens and produce into a globalized empire in a way that steam engines and railroads made possible on continents a century later.

The French created an assemblage of policies aimed to restrict trade between France and its new overseas territories.[17] Jean-Baptiste Colbert, the minister of finance under Louis XIV, created the initial framework for *l'Exclusif* in the seventeenth century.[18] French West Indian farms and plantations were to trade sugar, cotton, and tobacco to France through the *Compagnie française pour le commerce des Indes occidentales*, formed in 1665 for this very reason.[19] In 1717, laws enacted through the Crown's *Lettres Patentes* proscribed any foreign trade and restricted trade to a limited number of ports.[20] A 1727 patent added severe punishments for merchants engaging in trade with New England.[21] These laws benefited some towns, including St. Pierre and Basse-Terre, and impaired trade in Fort-Royal (Fort-de-France after the French Revolution) and Pointe-à-Pitre.[22] While Martinique and Guadeloupe jealously guarded their exclusive franchise of the sugar market, they simultaneously took advantage of the demand for sugar cane's by-products in New England.[23] The trade with these foreign ports threatened *l'Exclusif*'s integrity.

For their part, the English structured their mercantile engagement with the Atlantic world through three parliamentary acts: the Navigation Act (1660), the Staple Act (1663), and the Plantation Duty Act (1673). The Navigation Act provided a legal monopoly over trade within the empire. Parliament repealed the act in 1849, though laws passed in 1766 and 1825 weakened these monopolies.[24] These laws governed traffic from a metropolitan point of view, so these acts were re-articulated into particular legal and social contexts. Acting through a combination of prohibitions and tariffs, these laws regulated production and commerce with the American colonies, between those colonies and others, and with England and Europe. Advocates asserted that the mercantile system benefited England by providing valuable botanical commodities and sumptuary goods while at the same time securing a putatively closed colonial market. The expanding English sugar market became a virtual monopoly for planters in Jamaica, Barbados, and the Leeward and Windward Islands. It also made England the sole entrepôt for the European sugar trade.

Those in the colonies positioned to profit from the growth in sugar demand did not always adhere to the letter of the law.[25] Sugar from Barbados and St. Kitts was sold to neighboring Dutch and French islands, thus increasing the

returns planters enjoyed on those islands.[26] By the first quarter of the eighteenth century, the direction of trade was reversed. French sugar found its way into English markets through St. Kitts and Barbados, effectively depressing their returns and increasing the cost to provision a plantation.[27] Grocers and confectioners in London conspired to reduce sugar's cost. Finally, the North American colonies reduced their tax burden by purchasing molasses, used in distilling rum, from foreign parts. These efforts highlight the weakness of mercantile regimes and exposed overseas subjects to financial risk.

Another, subtler, transformation took place. Island assemblies, primarily populated by merchants in the last quarter of the seventeenth century, came to be dominated by planters who fought to protect their interests. The preamble of the Barbados Act of 1715 notes, "divers Persons in this Island have of late imported, or caused to be imported, great Quantities of Sugar, Molasses, Rum, Cotton, Ginger, and Alloes, from Martinique, or other Places not under His Majesty's Subjection and Government; which lessen the Value of the Manufacture of this Island . . ."[28] The Leeward Islands passed an act in Antigua that limited direct trade with Guadeloupe and Martinique.[29] Local power translated into metropolitan influence through an increasingly powerful class of absentee planters, such as William Beckford, and agents acting on their behalf in London. Both cultivated friendships with politicians, published pamphlets, and submitted evidence to parliamentary committees.[30] Planters adapted the Navigation Acts to the demands of the market to protect their monopoly in the wake of growing pressure from French sugar interests.[31] For example, in 1733 the exporting of sugar to England, as well as to foreign countries and from one colony to another, was rendered illegal. Titled the Molasses Act, this legislation imposed a tax of six pence per gallon on imports from non-English territories.[32]

In 1766, the British Parliament passed the Free Port Act.[33] This act opened four ports in Jamaica and two ports in Dominica to trade with the Spanish and French, respectively. The act allowed agricultural produce from the region, including cotton and sugar, to be imported into Dominica's two ports and then sold to Britain.[34] Lancashire cotton mills wishing to increase their business needed more significant volumes of cotton, grown solely in the West Indies at this moment, and Bristol sugar refiners wanted to expand the amount of produce they could re-export.[35] Opening Dominica's port also allowed merchants to expand commerce, including the lucrative slave trade, to the French islands and beyond.[36] British foodstuffs, glass, iron, ceramics, and other manufactured goods were supposed to be transshipped to French merchants for use in Guadeloupe and Martinique. Advocates believed that this act supported Scottish commercial interests

as they gained increasing prominence in the British Empire.[37] It had the added benefit of aggravating Spanish and French colonial interests and giving Dominica's agricultural sector a jump-start by boosting its "on-the-books" exports.[38]

Trade regimes had real-world implications for the ways that boundaries were experienced in Dominica. In some of these cases, these alternating sovereignties presented an opportunity. Because British trading policy was more open than *l'Exclusif*, planters in Martinique believed that they could sell their sugar on Britain's more open market at a higher price.[39] Shipping returns recorded between 1787 and 1809 illustrate how the act stabilized boundaries between colonies.[40] Between those years, customs officials arrived by British and foreign vessels carrying American, Danish, Dutch, French, Portuguese, Spanish, and Swedish flags. The vessels arriving in those ports ranged in size from single-masted sloops of approximately 25 tons to square-rigged ships of 750 tons. While these distinctions were important for customs officials because of the number of tons their holds carried, quantifying that volume based on these documents is difficult.[41] Vessels arriving in Dominica came directly from ports in Europe, North America, South America, and the Caribbean (table 4.1). Items in their holds included everything from a silver table service, which most likely adorned the table of some merchant or planter, to rough spun cloth slave owners supplied to the enslaved laborers.

The British maintained a monopoly over much of the trade from Europe, Asia, and Africa and shared that monopoly with American vessels. Boats arriving from South American and Caribbean ports flew a variety of flags (table 4.2). British and American vessels (which custom officials did not consider foreign) held a monopoly on rice (153), corn (135), flour (306), beef (295), wine (183), gin (51), pipes (99), lumber (247), bricks (63), nails (61), staves (262), hoops (134), and iron pots (26). Working on the behalf of resident and absentee planters, agents in London, Bristol, and Cork—the three main ports feeding this trade—purchased these items.[42]

Watercraft flying French flags were the most significant competitors in the Caribbean trade, while ships flying Spanish flags were the dominant traders with ports in New Grenada, Suriname, and the Guyanas. Vessels flying the French flag carried cotton, livestock, cocoa, and wood in decreasing frequency of arrivals. The Spanish moved livestock, cocoa, hardwood, and cotton. It appears that these vessels were using Dominica as a secondary market for goods produced in their home colonies by taking advantage of Roseau's and Portsmouth's free port status. Importantly, it seems that smaller English vessels carried items such as coffee (54) and sugar (149) from the French Antilles to Roseau's port, while the

TABLE 4.1. Arrivals of ships in Dominica between 1787 and 1809, listed by continent of origin and flag of the vessel

	US	UK	DN	NL	FR	SP	SW	Prize	Total
Africa	2	90							92
Asia								1	1
Caribbean	45	972	40	22	675	22	72	1	1,849
Europe	16	283			1	1			301
N. America	159	228			3	4	1		395
S. America		13	1	10	12	47			83
Other	19	53			2	1		12	87
Total	241	1,639	41	32	693	75	73	14	2,808

NOTE: Flags represent the United States (US), United Kingdom (UK), Denmark (DN), Netherlands (NL), France (FR), Spain (SP), and Sweden (SW). "Prize" refers to a vessel that has been captured by the British Royal Navy from a belligerent power (most likely France).

French and Spanish concentrated on other goods.[43] These documents do not appear to capture the entire story. Instead, the records show that French vessels carried little in the way of export commodities, listing cotton as the predominant cargo. This pattern could mean that either French ships mostly moved cotton in actuality or that cotton was listed to disguise what French ships were carrying. Captains aimed such subterfuge at British customs officials, and, to avoid excise taxes, French customs officials. After all, France was as protective of its franchise in exporting commodities as Britain.

Both customs records and narrative accounts detail how borders drawn by Jefferys on maps of the Eastern Caribbean blinked in and out of existence. Durable trade partnerships between islands, extended family networks, and the inability of any one island or power to meet the needs of its inhabitants meant that people engaged in commerce that circumvented the mercantile relationships upon which plantation economies were premised. Some of these economic interactions went beyond island boundaries.

Mobile Assemblages

To consider why political transition had such far-reaching impacts, it is necessary to consider the political landscape and its implication for the flow of food and goods. Political landscapes comprise imagined spatial representations,

experiences of the things and people that move across space, and the sensibilities of actors to the meaning of that space.[44] As a spatial imagination, boundaries on maps can be understood as historically contingent and porous in practice. They also represent a political and economic reality. Rather than being a static backdrop for social life, or a dimension of subjective experience illegible through archaeological means, space emerges in the relationship between objects, bodies, and places. Thirty years of historical archaeology have made one thing clear: it is difficult to infer the direction of influence between metropole and colony, between political authorities and subjects, and between the relatively powerful and the relatively powerless. That being said, archaeologists have also shown that the flow of people and things, as well as the conceptions of that movement, facilitated, shaped, and entangled shared practices.[45] Mapping those practices rendered through political discourse, space becomes a primary unit of analysis in understanding power.

The markets Troup observed were vaguely familiar but not identical to those he was acquainted with in Scotland. He could get many of the same goods that he found in Aberdeen, but some of the items had a different inflection. Markets were an assemblage of economic exchanges, networks, and relationships. Markets, as assemblages, beckon, in part, to the way archaeologists work with individual materials to consider composite materials and place them within a matrix of time and space. In addition to the permanent features that accompanied the sugar revolution, the plantation was also an assemblage of smaller things: household furnishings, items of clothing and adornment, and cooking utensils. This material record can be recovered, if only partially, from factories, fields, and villages that constituted the plantation. Iron pans and steel blades, maize and wheat, ceramic vessels and glass containers—all have an archaeological signature. Importantly, each of these items signals different circuits of goods, some of which are better documented than others.

Boundaries that Wink

While a border existed between Dominica and its neighboring islands, creating legal and economic friction, Eric Taglicozzo notes that maritime boundaries instituted in colonial southeast Asia were notoriously "porous."[46] For colonial powers, many residents of the archipelago had been highly mobile for centuries before the drawing of lines on the map. In transgressing boundaries, merchants were merely activating social, religious, and trading networks that had existed in Southeast Asia for centuries. Attempts to enforce the boundaries through military force, and legitimize the boundaries through laws and treatises, did

TABLE 4.2. Goods arriving in Dominica between 1787 and 1809 from Caribbean ports

Caribbean Port of Origin (and Sovereignty)	Percentage of Estimated Total Goods (158,923 Tons)	Flag of Vessel						
		US	UK	DN	NL	FR	SP	SW
(UK)		10,025	98,998	1,265	4,740	4,130	1,365	4,200
Barbados	10%	<1%	99%			<1%		<1%
Grenada	4%	<1%	93%	<1%	<1%	6%	<1%	<1%
Antigua	4%	<1%	99%	<1%		<1%	<1%	
St. Kitts	3%	4%	94%			2%		
St. Vincent	3%	<1%	94%	1%	<1%	<1%		3%
Montserrat	2%	<1%	98%	<1%				<1%
Tobago	2%	32%	68%					
Anguilla	<1%	62%	31%					7%
Bermuda	<1%	<1%	>99%					
Nevis	<1%	<1%	>99%					
Bahamas	<1%	<1%	>99%					
Tortola	<1%	<1%	>99%					
Barbuda	<1%	<1%						>99%
Turks	<1%	<1%	>99%					
(DN)		US	UK	DN	NL	FR	SP	SW
St. Thomas	2%		65%	26%	1%	8%		
(NL)		US	UK	DN	NL	FR	SP	SW
St. Eustatius	3%		31%	<1%	13%	53%	2%	
St. Martin	<1%	12%	60%			27%	1%	

Caribbean Port of Origin (and Sovereignty)	Percentage of Estimated Total Goods (158,923 Tons)	Flag of Vessel						
		US 10,025	UK 98,998	DN 1,265	NL 4,740	FR 4,130	SP 1,365	SW 4,200
(FR)		US	UK	DN	NL	FR	SP	SW
Martinique	30%	6%	71%	1%	<1%	21%	<1%	<1%
Guadeloupe	19%	3%	32%		<1%	64%	<1%	<1%
St. Lucia*	8%	1%	37%			59%		3%
St. Barth	5%	6%	53%	<1%			2%	>38%
Trinidad**	3%	<1%	>29%	3%	2%	57%	5%	3%
Hispaniola***	<1%						100%	
(SP)		US	UK	DN	NL	FR	SP	SW
Puerto Rico	<1%		38%	10%	3%	23%	26%	
Cuba	<1%	<1%				33%	67%	
St. Domingo	<1%	<1%				<1%	>99.0%	

NOTE: Percentage of total shows estimated tonnage from each port and flag of vessel: United States (US), United Kingdom (UK), Denmark (DN), Netherlands (NL), France (FR), Spain (SP), and Sweden (SW). Tonnage is estimated by the type of the vessel recorded using D. MacGregor, Merchant Sailing Vessels.

* St. Lucia changed sovereignty between France and the UK.

** Trinidad changed sovereignty between Spain, France, and the UK.

*** Hispaniola (St. Domingue) became the independent country of Haiti.

not dissolve the trade so much as signal the failure of imagination on the part of colonial powers. Boundaries that wink in and out of existence depend entirely on one's legal and social position in colonial society. This was certainly the case in Dominica. In the case of borders that winked around Dominica, meaningful structures included the legal and social structures, which allowed some to cross boundaries with impunity, and others with great risk. Thus the specter of violence unequally shadowed those who transgressed these boundaries in order to live in colonial Dominica.

Take the contraband trade in humans essential to the success of sugar estates. Slaves were purchased and transported across colonial boundaries. The rise in the agricultural industry became the basis for the mushrooming growth in the port. It became one of many loci for the intra-Caribbean slave trade.[47] Slave ships brought some of the 100,000 captive Africans to Dominica's shores, many of whom remained on the island. The average population of enslaved workers between 1763 and 1834 was 20,000. At Sugarloaf in Portsmouth, 85 percent of the 137 enslaved laborers in 1817 were from somewhere other than Dominica. The majority, 39, were listed as natives of St. John in the Danish West Indies; 19 were from Africa, and the remainder were from Montserrat and Nevis. Different colonial regimes had different laws regarding the status of human beings as property. Such interisland trade in humans was common and part of everyday discourse, even if it took place beyond the boundaries of legality.[48] It infringed on the monopoly of the state to control trade. Unlike other contraband, smuggling people, according to Karras, introduced significant risk to an island.[49] Knowledge of other colonies and the political struggles of slaves in them might create unwelcome unrest in the new home. Smuggling humans undermined the colony from which the person was taken by depriving it of revenue from taxes and the labor of that person. It also meant that displacement was a constant predicament for an enslaved laborer. For the enslaved, investment in the provision grounds, social ties, and everyday life could be disrupted at a moment's notice.

Numerous island contingencies arose, leaving colonial subjects to employ local and regional markets to resolve shortcomings of mercantile arrangements. Colonial subjects could take advantage of free ports like Dutch St. Eustatius (Geoctroyeerde Westindische Compagnie) and Danish St. Thomas. Unsurprisingly, much of the traffic entering Dominica between 1763 and 1807 was from ports in St. Eustatius and St. Thomas under Swedish, Danish, and Dutch flags. They were flags of convenience during three decades of near-constant war, when carrying a French or British flag made one a target for privateers.[50] Purchasing contraband became a de facto method of provisioning for many island residents

by 1763, and Dominica had been an important part of that story.[51] Young's son, Sir William Young the second, wrote about governing diverse populations of enslaved laborers, foreign nationals, free people of color, poor whites, and a plantocracy that often worked at cross-purposes to the colonial enterprise. These diverse actors sought goods that fulfilled individual tastes, desires, and foodways, which the imposition of new trade regimes hindered. They also had economic relationships of their own that extended to nearby, yet foreign, shores.

The Kalinago continued to ply the channels between the Eastern Caribbean islands.[52] There was a small and dispersed community of people identified as "Carib" in St. Lucia, St. Vincent, Grenada, and Guadeloupe throughout much of the eighteenth and nineteenth century.[53] French and English writers emphasized their mobility and attachments between islands of different imperial powers. In 1825, one French administrator in Guadeloupe described a family living in Anse-Bertrand who identified descendants in St. Vincent and Dominica.[54] This interisland mobility was of considerable concern.

French subjects who stayed on the island maintained commercial interests in foreign islands. Belligny and Bellot, for instance, supported financial interests in Martinique, including properties and slaves, even though they resided in the British colony of Dominica. Inter- and intraisland interactions could be mapped through local notaries in St. Pierre and Fort-Royal.[55] Planters used notaries in Le Marigot, Macouba, and Le Prêcheur, Martinique, to file marriages between slaves, land transactions, and financial arrangements in Dominica. It is likely that parties to these arrangements employed free and enslaved peoples to move themselves and their goods between islands. French administrators were concerned that enslaved peoples of African descent moved on the waterways linking islands and inlets of Guadeloupe, using pirogues containing sugar, personal portable possessions, dry goods, and furnishings.[56] They composed so much of the commercial infrastructure that governor Orde was apprehensive about French residents on Dominica. He worried that they conspired with merchants in Martinique and Guadeloupe to smuggle goods and sugar between islands.[57]

Impounded items illustrate some of the objects considered contraband. In 1764, Andrew Dewar, the Collector of Customs in Dominica, inspected and seized goods from several warehouses in Roseau. Parcels of both French and English subjects contained cotton clothes, silk shoes and slippers, men's leather shoes, silk and cotton fabrics, thin canvas, silk umbrellas, lace, tea, and hammocks.[58] Many French planters used such trade to expand their fortunes, selling island produce to British and French agents alike. British merchants frequently protested French residents who imported goods and paid for them with the sale

of French sugar, which they then rebranded as British.[59] While strictly legal, the merchants were upset because such transactions upended the intent of the Free Port Act.

Contraband trade was also incredibly important for ordinary people. It is for this reason that any interruption in contraband trade met with considerable opposition. In 1789, Governor John Orde and his customs officer ordered soldiers to board a vessel carrying shingles from North America and confiscate the goods. Shingles were necessary for repairing houses and building new ones. Orde stated, "After some ill treatment and injurious language, [the customs officer] was thrown into the sea, where his Loaded Musket which had been wrested from him in the Ship, presented to him and twice snapped without effect." The following year white residents protested after John Blair had told customs officers about the "smuggling of prohibited or uncostumed [contraband] goods"—one of a few instances of civil protests led by whites.[60] The mob found Blair, who had taken shelter in Fort Shirley. They proceeded to tar and feather him. Then "the soldiers who were endeavouring to save the man retired making use of the most insolent and daring languages."[61]

Jonathan Troup's journal is particularly helpful in understanding daily transactions involving foreign goods. As a physician and amateur collector, Troup kept notes on items for sale in the market, including food and crafts, what he paid for them, and sometimes even the context of their use. He carried on long conversations with other residents, discussing the cost of items and their relative quality. For example, one of the planters who employed Troup, Mr. Kemp at Bath Estate, complained about the price of hats in Martinique. At the same time, Mr. Kemp stood to profit off selling such hats, which were small, but because of ornate gold brocade, cost four dollars. That same day he met a "genteel, polite" merchant who traded primarily with the French. This gentleman could profit significantly from trading people. Troup stated, "he has an Excellent stately b[l] ack [dear-skin hat] which he paid 14 Joes for; Mr. Kemp says he'll carry her to Guadeloupe & then make his 36 joes."[62]

The currencies employed in everyday transactions provide one a sense of the cosmopolitan nature of Dominican commerce. Troup mentions the Spanish dollar and the Portuguese joe in addition to pounds, shillings, and pence. French currency was also employed. In September, he sketched a "French bit" he used to purchase a bird, presumably hunted in the interior of the island. This coin was likely used interchangeably with the other bits in circulation. The Spanish dollar, while not the coin of the realm, was the most common currency in circulation during the last half of the eighteenth century. There was an official exchange rate

set in 1704, where one dollar was equivalent to fifty-six pence. The value fluctuated widely between colonies. In Dominica, one bit (one eighth of a dollar) was worth one shilling.[63] Portuguese coins were called "joes" and "half-joes" after the Portuguese King Johannes V. The value of this currency is hard to determine, but it was worth more than a Spanish dollar, and by 1834 it was worth eight US dollars.[64]

Enslaved workers who had lived on the island before annexation and those who were brought to the island after the sugar revolution commenced also engaged in commerce. Essential actors in these markets were the set of vendors, usually women, who made a living from the informal economy. For example, in describing free and enslaved women who lived in Roseau, Troup remarked, "They love always to be spending money and buying different commodities [including] lawn [a kind of fine linen], linen, gause, calligo and they sell it at great profit and sometimes make of money if they have good management & know what will suit the times."[65] From the subsequent text, it appears that these women constituted a specific role in the market: that of a huckster. Throughout the British West Indies, they were often described as dissonant to colonial society by contemporary writers.[66] Female hucksters participated in the marketing of provisions, and sometimes took on other types of work as domestic servants, washerwomen, or work where sex was conscripted. An anonymous writer, identifying himself as a resident, described Dominican hucksters: "The hucksters are furnished by their masters with baskets or trays, containing . . . crockery or glassware, finery for ladies, jewelry, fruit, pickles, sweetmeats, cakes &c. All of these are counted over, and priced."[67] These street vendors could be enslaved or free and became indispensable in the colony.[68]

The geographic reach of these market activities was extensive. Objects moved well beyond the shores where they were grown, made, or imported initially. For example, one observer in Barbados remarked:

> From these people [hucksters] eatables, wearables, jewelry, and dry goods, of all sorts, may be purchased; but those things we find most ready sale, are pickles, preserves, with fruit, sweetmeats, oil noyau, anisette, eau-de-cologne, toys, ribbons, handkerchiefs, and other little knick-knacks, exported from Martinique.[69]

This observation provides important insight, because historians suggest the French Antilles (Martinique and Guadeloupe) were under-provisioned. Subsistence needs were met through a system of cabotage and intercoastal trade. Manufactured goods and supplies imported to—and sugar, coffee, and cotton

exported from—the remaining islands were channeled through St. Pierre, Martinique.[70] Historians propose that in addition to permitted cabotage trade, illicit contraband with other European ships and colonies helped to meet the needs of everyday life.[71]

The markets also extended well into the interior, to the island's significant maroon community. Maroons began to inhabit the island well before the British took over Dominica in 1763. The island was a refuge for those crossing the channels from Guadeloupe and Martinique and escaping captivity on the early estates set up during French rule. Take the estate that grew out of the Jesuit mission established earlier in the century. After the French left the region, those once enslaved retreated to the woods and hills surrounding Grand Bay, most likely present day Petite Savanne.[72] There, "they were joined from time to time [by enslaved laborers seeking refuge] from other estates," wrote Thomas Atwood. He continues, "They secreted themselves for a number of years, formed companies under different chiefs, built good houses, and planted gardens in the woods." There they raised, "poultry, hogs, and other small stock . . . and [with] what they got from negros they had intercourse with on the plantations, they lived very comfortably, and were seldom disturbed in their haunts."[73]

Transcripts from trials of runaway slaves compiled by Polly Pattullo are particularly useful here.[74] These accounts were taken in the aftermath of a maroon war in the 1810s. Much of the detail recorded in the trials—including the location of runaway camps, the manner of subsistence, and the establishment of intent—was never intended to be used in an analysis of labor and livelihood, but proves important in our overall understanding of the environment. Of the fifty-nine trials documented in this study, twelve slaves were brought up on charges of having associated with runaways providing them gunpowder, tobacco, and salt fish.[75] The trials document three forms of goods circulating among slaves and maroons in the Dominica uplands: goods for sale, gifts for which return was not expected, and a particular type of reciprocity in which a calculation of labor and goods was equated. Take, for example, a trial on May 22, 1814. According to the testimony of one runaway, Robin, he and a compatriot visited enslaved villagers at Woodford Hill Estate in the northeast of the island. There they provided the enslaved with giant ditch frog and agoutis (a large rodent) in return for salt, salt fish, and mackerel.[76]

These transactions were not isolated. Joe, who worked on Cubbin estate in St. George Parish, like most slaves, had patches of land to grow provisions. According to transcripts from trials on March 6, 1814, Joe often received visitors: runaway slaves, one of whom—Elephant—was the leader.[77] According to witnesses,

while there, Joe offered hospitality, having one member of the house cook "victuals" for them. He went to market, in Roseau, to buy salt, tobacco, and salt fish. The runaways gave Joe wahwahs (wild yams). Joe hid the wahwahs in the house to use them to trade for tobacco in the market. On a different occasion, Robin and his compatriot worked the provision ground of the prisoner. In exchange, he gave him some provisions to sell in the market and he returned some of the proceeds. These transactions were not just pecuniary. They included acts of commensality. Transactions were initiated with a meal of "boiled victuals" of "boiled salt fish and plantains," and concluded with future arrangements. When the accused did not have the provision to give immediately in return for the labor, they agreed "he would come and bring it on Sunday."[78]

When the legislature instituted the codes that regulated enslaved laborers and made requirements that planters set aside enough time and land for the laborers to make a living, they set in motion an internal market system. Since people who wrote firsthand accounts gave testimony, and passed laws did not count the number of tubers they ate themselves, gave away, or sold in the market, quantities of foodstuffs originating from maroons are hard to track. We can, however, create a different sort of map that connects the woodlands of Dominica to regulated villages on estates, to provision grounds, to markets, and to small and large vessels carrying all sort of goods into town and beyond. While the accounts might not provide critical issues of volume, those items that materialized in the trade do. Specifically, archaeological materials can reveal the assemblage of trade that supported the island.

Trade Materialized

Few documents confirm the commercial arrangements that took place in these markets between slaves, hucksters, planters, and merchants. Some of these arrangements were made in front of observers, such as Troup, but purchases by enslaved laborers were not documented routinely. It was not customary to document such transactions. In the case of contraband, or those transactions with people who might be considered dissonant (maroons, Kalinago, or enslaved people from other islands), documentation was risky. Only merchants and planters who navigated the legal channels documented their transactions. Knowledge about the exact nature of the assemblage of trade is limited to a few sources. Probate inventories might suggest illicit origins of household goods, marks or decorations might indicate provenance, or compositional characteristics betray origins. But for the most part, material culture made and used by enslaved people proves to be that source through which we can most readily map these alternative geographies.

Material culture made and used by enslaved people was traded at the Sunday market, in addition to the food they cultivated during their "free" time. Troup purchased items that slaves crafted from what was at hand. For example, early on in Troup's visit in September 1789, vendors at the market introduced him to a dish made of crayfish (which Troup called prawns): "The Negroes catch them and sell them—though each of them not larger than a maggot. They boil and bake them into a paste."[79] A treat made from guava appeared to capture Troupe's attention more than anything else: "Guava Jelly is the best in the West Indies." Guavas, he continues, "grow spontaneously upon bushes over whole Island."[80] Guava jelly is a small treat, much like Turkish delight, made of boiled guava, water, and sugar. Items like these show that enslaved Dominicans did not just earn a living by growing food; they also took advantage of resources that were more freely available. Some of these conformed well to an English palate; some did not. The following month Troup tried, for the first time, a local spice cake: "Negroes make a pudding of sweet potatoes, flour, syrup and put in leaves of cinnamon bush. They toast it on a large white iron pan or dish. They sell a large piece for a doge."[81] Making pudding out of sweet potatoes was not only a way to make extra income. It was also a way to take produce that might otherwise be unmarketable and convert it into income. Sweet potatoes can go bad, and when they become too soft their value diminishes quickly. In this way, we see not only a frugality to market transactions, but a consideration of futures.

These small-scale industries were not restricted to food. On some islands, enslaved women also crafted items of personal adornment for sale on the market. Troup stated, "The negroes are excellent at making Hair-Rings for fingers which they sell for ½ bit—some of them are very neat."[82] Troup purchased three of these rings himself and was given a fourth. The presence of rings in Troup's account, of course, suggests they played some role in the lives of enslaved populations, most obviously in personal adornment (a role usually attributed to beads and metal jewelry in archaeological interpretations). Thomas Atwood described the social role of such jewelry: "they dress themselves out in their best cloaths; many of them in good linen, silk handkerchiefs, bracelets and earrings of gold and silver, to no inconsiderable amount, in which they visit or receive their acquaintances from the neighbouring estates."[83]

The hair ring also speaks to a broader set of craft industries for which there is scant archaeological evidence. Take, for example, calabash vessels, one of the items enslaved laborers were provided, according to one planter.[84] In Suriname, making calabash vessels requires time, effort, and a degree of specialization on the part of women.[85] Calabash fruit has to be cut open to remove the pulp. The

shells are boiled, shaped, and in some cases, carved. The calabash is then put in water for a week to once again soften the shell for final surface treatment.[86] In Dominica, Kalinago ancestors made calabash containers with a hole pierced on top for carrying water (*bouri*), and cups made of small calabash cut in half (*couïs*).[87] During the sugar revolution, enslaved laborers made these containers or purchased them from Kalinago in local markets.[88]

Fortunately, markets left a material record recoverable as archaeological data, if only partially, from houseyards of enslaved laborers, kitchens of urban residents, and tenements of urban workers in the ports. Some archaeological data is more reliably recovered than others. Though iron items were plentiful, moisture and oxidation can rust them beyond recognition. While wheat, barley, and maize can provide evidence about their origin and use, a combination of the right soil conditions, a set of dedicated techniques to recover that evidence, and a specialist to help identify these attributes are required.[89] Pottery and glass are very durable and readily identified in the soil. Most of these items are very generalized, and do not allow systematic examination of trade. With enough experience, imported table ceramics can be identified for provenance (England, France, Netherlands, Spain, and China) and used to establish a chronology of archaeological deposition. Locally manufactured ceramics made by peoples of African extraction allow us to model island-based networks in ways that are not possible with European-made goods.

Ceramic materials recovered from archaeological testing of residential contexts at Bois Cotlette, Morne Rouge, Morne Patate, Sugarloaf, and Café Estates give different, but equally reliable, accounts of the assemblages of trade relations that people used to furnish their houses. Typically, such archaeological deposits are used to assess differences in consumption, shaped by a combination of factors including personal preference, tastes shaped over centuries of practice, and regulations directing the possession of items. Contemporary attitudes toward hospitality among planters demanded elaborate table settings when hosting guests for dinner. After 1763, tableware made in Britain, including creamware made by or copied from Josiah Wedgwood's factories, was readily accessible.[90] Tin-enameled earthenware made in northern France, called faience, was less accessible.[91] Hence, the presence of turn-of-the-century French tableware at Soufriere estate houses suggests that their occupants distinguished themselves from the British, many of whom were newcomers to the islands and unfamiliar with creole culture. In addition to consumption, such assemblages also document the markets to which people had access. Assemblages from archaeological materials deposited during and after the sugar revolution (ca. 1760–1840) contained

French-made faience, bottle glass, and newly produced English ceramics including creamware, pearlware, and whiteware.

It is likely that many of these materials were purchased by laborers themselves. No doubt some of these goods were provided to enslaved laborers by planters. Ceramics easily break and chip, losing their value as items of sumptuary practice. It is easy to imagine planters furnishing laborers with these broken or orphaned pieces as they purchased new ones.[92] The assertion that enslaved laborers purchased goods is not unfounded, however. Laurie Wilkie, in her study of household consumption at Clifton Estate in the Bahamas, shows that preferences of enslaved workers dictated the composition of household assemblages.[93] The types of buttons, pipes, and ceramics excavated within the slave village showed little overlap with similar categories from the planter's house. The objects purchased did not generally represent the cheapest types of items available. For example, relatively expensive transfer-printed and annular wares were preferred to more affordable, plain, and minimally decorated shell-edged wares.[94] Factors other than cost, such as taste, contributed to these consumption decisions, and British manufacturers shifted production to meet these demands.

Despite inexpensive manufactured goods supplied through British merchants in Roseau—elaborate tableware and durable cast-iron pots—it appears that enslaved laborers relied on the products of other workshops and artisans to furnish their households. Most broken pieces of pottery recovered from the villages of the enslaved were coarse, utilitarian terracotta pottery. Vallauris pottery was recovered in large quantities from the villages on Portsmouth and Soufriere estates. French potters from eastern Provence made this utilitarian, lead-glazed, coarse earthenware, which is closely associated with colonial French cuisine.[95] Common in eighteenth-century kitchen assemblages of Eastern Caribbean enslaved and freed peoples, it has been documented in Martinique, Guadeloupe, the Virgin Islands, and Grenada.[96]

Imported tablewares and pottery such as Vallauris do not tell us who crossed channels or moved goods; local pottery does, however. Made in neighboring islands and sold in markets, hand-built, low-fired coarse earthenware has been recovered in many eighteenth-century archaeological contexts associated with slavery, suggesting that enslaved peoples used these wares. Many of these wares were also made by people of African descent. They were one of many items made on Dominica or on neighboring islands, and moved through the peripheral flows that made the colony work. Although not the only thing enslaved laborers made and used, coarse earthenware is the single consistently recoverable object surviving archaeologically. In Dominica, references to pottery manufacture are

also late and vague. One 1886 book published by the Royal Commission for the Colonial and Indian Exhibition states, "Coarse pottery is manufactured at the north end of the island and exported to Guadeloupe."[97] Pottery made during the 1890s was often attributed to communities identified as "Island Carib," with the assumption that it was a tradition predating European colonization.[98] By the 1930s, ethnographers identified local potters as Dominicans of African descent who were using "Carib" technology.[99]

Sources cite the manufacture of pottery on neighboring islands. For example, a community of people who identified as Carib were located in St. Lucia. In 1833, when members of the British Parliament were debating the merits of abolishing slavery, one member of Parliament brought as evidence a description of "liberated negros" in St. Lucia. He states that in 1819, those "who had been brought from Martinique to St Lucia, had, of their own accord, established a pottery and had succeeded so far as to supply the island, as well as to export considerable quantities to adjacent places."[100] Two years later, the anti-slavery record published the account upon which Mr. Odnell made his remarks: "while about twenty-six had clubbed themselves together . . . under a "free coloured" man . . . from Martinique in 1824. These last had erected a pottery at a short distance from Castries."[101]

These accounts do not go into detail about the shape, decoration, or material from which the pottery was made. The archaeological record, however, does. A dissertation written by a St. Lucian archaeologist working on Martinique, site reports and surveys completed by INRAP, and excavation carried out by my colleague, Ken Kelly, detail three broad groups of local pottery. Some pottery is coil-built and low-fired, most likely on open pits. Made as cooking pots, it is identified either as *coq au negre* or *canari*. Other pottery is large, wheel-thrown, kiln-fired storage jars. These thick walled "drip jars" and "sugar cones," used to refine sugar, were often made in workshops to support factories on the islands. The slurry that resulted from boiling cane syrup was packed into sugar cones, and molasses dripped into the drip jar. Finally, there is a thin-walled, kiln-fired porous earthenware. Assemblages I documented in Dominica recalled those found in potteries, plantations, and colonial settlements identified, mapped, and described in St. Lucia, Grenada, Barbados, Martinique, Guadeloupe, and St. Martin (figure 4.1).

Despite the accounts above, the pottery recovered from the regimented villages appears to have been made on neighboring islands. Although some sites were little more than large heaps of broken, incompletely fired, or poorly formed pottery, others were very substantial, with massive standing ruins and many

FIGURE 4.1. Broken pieces of pottery found at the kiln site of Îlet Chancel, Martinique, in 2006. In the foreground is a standing goglet. Behind it are the broken rims and bases of drip jars. Photo by author.

well-defined chambers.[102] In some cases, maker's marks provided clues about the origins of these vessels. For example, potters at the Fidelin Kiln in Basse Terre, Guadeloupe, applied an "F" to sugar cones as a way to distinguish them as one of their products. For the most part, however, place of manufacture was inferred from clay and temper; samples taken from sources near manufacturing sites offer clues to the pottery's material origins and ceramic recipe. The ceramic recipe, techniques, and choices made by the potter are determined by a combination of techniques borrowed from earth sciences to characterize the chemical and mineralogical constituents of the pots and map their structure.

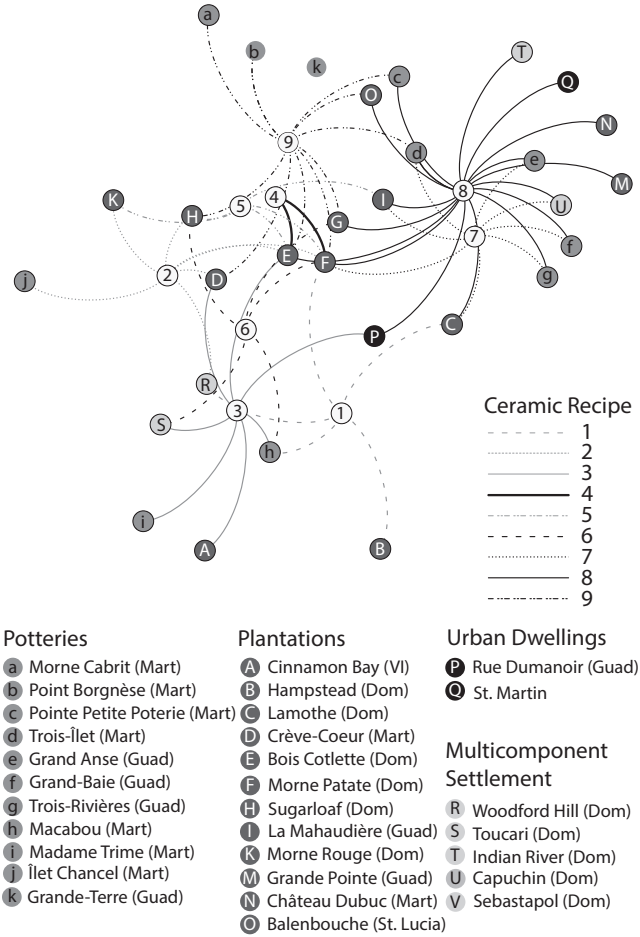
In this way, we can make two maps: one based on the pottery's affinity in space and one based on the pottery's affinity in composition. As such, their analysis enables us to redraw the everyday practice of economic interactions not conveyed through political or social boundaries. Many of the sherds we tested could not be assigned a particular recipe or potential provenance. Most could be organized into clusters of like chemical attributes. We found that most of the "local" coarse earthenware on Dominica was not local. It was produced in established potteries of Guadeloupe, Martinique, or St. Lucia. Cooking pots employed by slaves were

purchased through diverse networks extending beyond the shores of Dominica. The networks, however, are different from those documented through ceramics made for industrial production of sugar (sugar cones and drip jars). Port towns in Basse Terre and St. Martin, and slave villages in Martinique, Guadeloupe, St. Lucia, Grenada, and Dominica, are all connected through these ceramic networks. Whether this circulation was illicit, it is difficult to say. But it seems to have been poorly documented (maps 4.1 and 4.2).

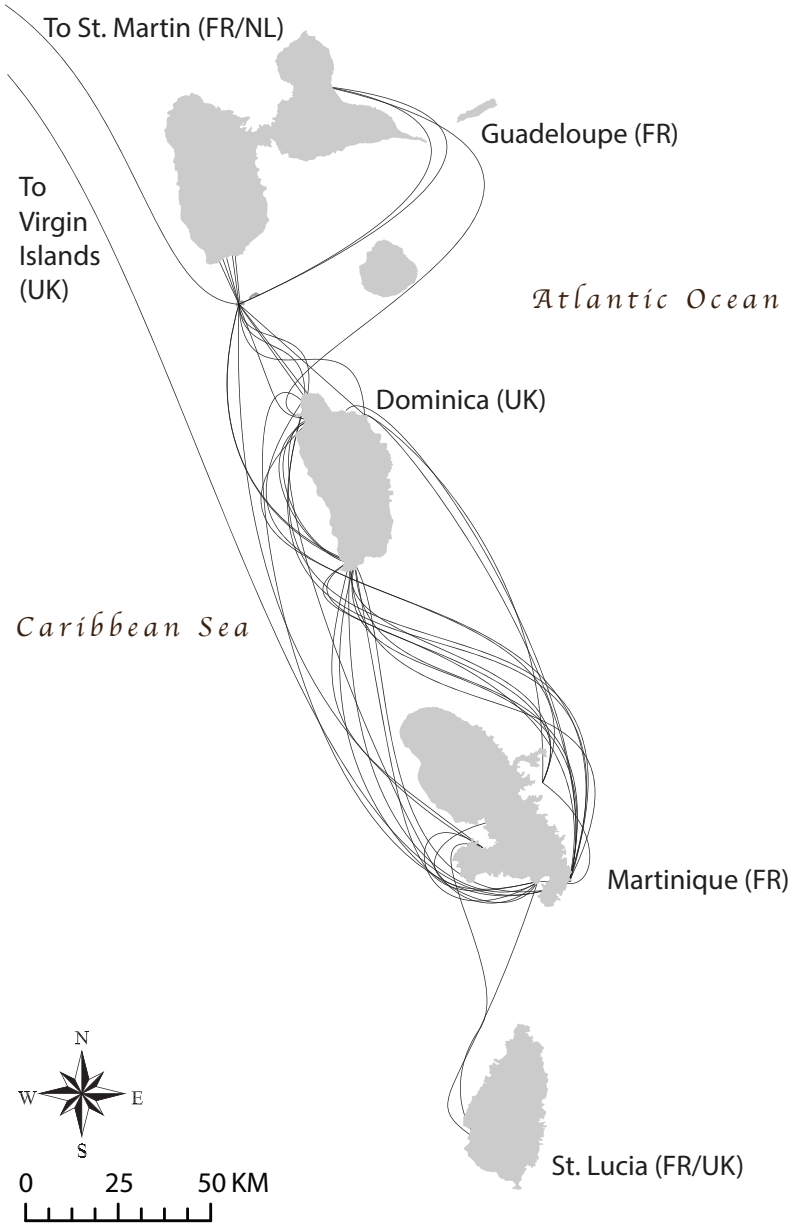
The customs records from the ports of Portsmouth and Roseau show that earthenware came to Dominica directly from Europe. The majority of the pottery arrived in crates from major British ports such as London, Liverpool, and Cork (table 4.3). "Earthenware" included a variety of items. For example, in *The London Tradesman*, Campbell makes a distinction between "earthenware" like delft and "earthen moulds" used by sugar bakers.[103] In Paris and La Rochelle, potteries also produced wares for sugar-refining in the metropole and the colonies.[104] At the time of Dominica's sugar revolution, "earthen moulds" and "drips" were manufactured in England.[105] Of all the recorded incoming vessels, however, only two entries specify the presence of drips.[106] Earthen vessels were also transported from five ports: in Antigua, Barbados, Martinique, Grenada, and Guyana (20 vessels). Given the number of boiling houses built since 1787, it seems unlikely that the 121 drips identified in the entries would have sufficed, regardless of how poorly the sugar revolution fared.

Theoretically, the owners of sugar factories should have benefited from such trade. Relying on *caboteurs* in sloops traveling to the closest market in Roseau, Dominica, inhabitants obtained access not only to imported materials from Britain, but also to commercial interests from Martinique and Guadeloupe. Compositional analysis of local ceramics presents a compelling picture of networks within and between islands.[107] This picture suggests that estate owners looked to neighboring colonies to provision themselves with ceramics for processing sugar. Drip jars recovered from Dominica share a recipe with ceramics recovered from kilns in Guadeloupe, Martinique, and a group for which the provenance of manufacture remains unknown. Importantly, the drip jars examined in this study were recovered from slave villages rather than from the factories where sugar was processed. This means that they were used for purposes other than their initial intention. It also suggests that enslaved workers were imbricated in these networks.

The presence of ceramic goods on these sites and the regulated villages of Dominica has important implications. They document how the predicament of mobility was negotiated through interactions and relations that are unaccounted



Map 4.1. A network analysis using the Yifan Hu Proportional layout algorithm to describe relatedness vis-à-vis coarse earthenware. Group numbers refer to different ceramic recipes as ascertained from instrumental neutron activation analysis. This method maps their relative distance from one another based on multiple complementary relations, in this case the presence of ceramics with different ceramic recipes. For example, ceramic recipes 7 and 2 are rarely found on the same site, and are represented as distinct and distant nodes. This means that two geographically proximate sites, such as Sugarloaf and Lamoff, were end points in different networks. Conversely, because Sugarloaf and Crève-Coeur (Martinique) have complementary relationships (ceramic recipes 9, 6, and 2), they are illustrated as relatively close to one another. Importantly, these networks show a circulation of objects between potteries and plantations on different islands colonized by different European powers. Illustrations by author.



Map 4.2. Peripheral flows as inferred from ceramic recipes used to produce goglets, drip jars, and *coq au negre* (see map 4.1). FR (France) and UK (United Kingdom) refer to the sovereignty of the islands in 1789. Importantly, these flows show a circulation of objects across borders that are not documented in contemporary customs records (CO 76/4-8).

TABLE 4.3. Vessels arriving in Dominica between 1787 and 1807 carrying earthenware

	Flag of Vessel			
Origin	US	UK	NL	FR
England		59		
Martinique		8		
Barbados		5		
Antigua		4		
Grenada		2		1
Ireland		2		
Connecticut	1			
Guianas			1	
Canada		1		1

ABBREVIATIONS: United States (US), United Kingdom (UK), Netherlands (NL), France (FR)

for in imperial maps of the Caribbean. There was a vibrant intercoastal trade in goods between islands, hinted at in the documents described above. Materialized in the trade assemblages of Dominica, these flows indicate how people lived during a period of changing political regimes and trading rules, in an era when the sugar revolution created increasing insecurity on the island and threatened the social reproduction of the enslaved, and indeed the planters.

The presence of these ceramics also suggests a different map, in which people living in the regimented slave villages of different imperial powers were connected through things and possibly ideas. If enslaved laborers' returns from growing surplus food were so minimal, and the level of extraction by the hucksters so high, why did they buy heavy, more expensive drip jars rather than relying on cheaper barrels or buckets? Ann Stahl argues that people's and communities' reactions to new goods are shaped by preexisting preferences and practices. In this way, local knowledge and values influenced how people incorporated new objects into their traditions, while also being transformed by those new objects. She explains that in colonial Ghana, glass beads were desirable nonlocal goods, because such beads were already crucial in local practices and economy.[108] In the case of Dominica, it appears as if drip jars and goglets were two such desirable nonlocal goods. The movement of ceramics between St. Lucia, Dominica, Martinique, and Guadeloupe facilitated, shaped, and entangled shared practices.

These waterways enabled the sharing of cultural attitudes about things and how they should be used.

Mobile Waterways

Regional markets and the peripheral flows of objects they fostered shaped waterways of eighteenth-century Dominica. As discussed above, sugar cultivation created a predicament common to capitalist production. Access to fresh water became increasingly limited, and people relied on objects and features to capture, store, and distribute water to meet metabolic demands. Glass bottles, ceramic vessels, gourds, and calabashes cost money and time for enslaved laborers. Slaves relied on regional markets to obtain vessels that captured, stored, and distributed water. These markets can be seen as a peripheral flow, a "cultural encounter [that] takes place not just between the West and the rest but also within the periphery itself."[109] Attending to peripheral flows of goods allows us to map infrastructures of social reproduction—that is, power and its relationship to food, shelter, clothing, and health care.[110]

There are several possible explanations for the ubiquity of forms across the Eastern Caribbean. A popular and long-held theory relies on the cultural repertoire Africans brought with them. The need for portable and potable water inspired African-descended potters to make forms such as monkey jars, which were sold to slaves and used in the house and field.[111] Other shapes might be inspired by other social functions in an "African" cultural repertoire. Archaeologists invested in answering questions related to symbolic meaning and use in social context have looked toward decorative inventories.[112] The most famous examples of this argument are versions that link x's inscribed, scratched, or painted on vessels to cosmograms popular in Bakongo material culture.[113]

Another approach describes the material conditions and the economic networks that fed a trade in ceramic vessels. I have been one of the principal proponents of this theory, arguing that there were relatively few locations where ordinary pottery, crafted by slaves, was made.[114] Some of these locations, such as potteries and workshops owned by Europeans, were yet another condition of enslavement—less studied, but important. Other potteries, organized by enslaved laborers themselves, offered an alternative frame of the colonial economy: one which was unexpected, but nonetheless economic in orientation. In cases of both European-organized and African-organized potteries, manufacture was limited to a few locales, and trade was controlled by hucksters or *caboteurs*, creating alternative, less-studied vectors of economic power.[115] In the

case of pottery recovered from regimented villages in Dominica, the earthenware seems to have been "made anywhere but Dominica."[116] The assumptions guiding this interpretation were few but critical. First, solutions to everyday problems of enslavement were not ad hoc. For example, planters thought about how slaves got their food, but did not consider cooking the vessels needed to prepare the food. The resolution was not ad hoc, because solutions were reached through planning, execution, and drawing on long-term understandings of economy and scale.

These two bodies of scholarship are reconcilable. Given the above descriptions of types of water in circulation during the eighteenth century, there can be little doubt that people's different relationships with water were formed through different material repertoires. There are reasons, however, to suspect that more ancient, less-documented waterways contributed to the material repertoires as well. Patterns of trade that connected islands in the sixteenth and seventeenth centuries continued to inform the cultural repertoire of people living in the regimented slave villages of the Eastern Caribbean, despite the imposition of political boundaries in 1763.

Drinking water presented particular problems for eighteenth-century enslaved laborers. In 1763, physicians had yet to recognize the implications of clean water. John Snow only determined that water could act as a vector for cholera in 1854. Whether widely recognized or not, contaminated water had direct implications for the health and well-being of people, free or enslaved, living in densely populated villages or towns.[117] Colonial administrators in Basse-Terre and Pointe-à-Pitre attempted to provide safe water for residents.[118] Waterborne illnesses, including typhoid and dysentery, stressed organs and often resulted in death.[119] Contaminated water was the only water available to many slaves in some places.[120] Slaves suffered differentially from waterborne illnesses, including guinea worm, dysentery, and typhoid.[121] When, in 1700, the Dominican priest Jean-Baptiste Labat visited Barbados, he speculated that "the water causes numerous illness, which becomes epidemic among the negroes."[122]

The characteristics of water were essential to past people and, as such, they employed different qualities to describe water and methods to make it palatable. Between 1700 and 1800, sailors, doctors, and settlers in the Americas described water as fouled. Wholesome water was water that was fresh or "sweet," free of particulates, and "cool." Hans Sloane, the naturalist whose collections formed the nucleus of the British Museum, describes the taxonomy of sweet water: pond water contains "clay, mould, water-herbs, or other impurities" and spring water is "preferable to others."[123] In areas with little surface water, the free population

relied on cisterns for drinking water, and enslaved laborers relied on ponds and rainwater. Storage jars, buckets, glass bottles, calabashes, and earthenware pitchers were important intermediaries between those ponds and the household.

Vessel fragments recovered from Sugarloaf and Bois Cotlette used to store water came to Soufriere and Portsmouth from various sources and provide a glimpse into the types of water available to slaves. Items like barrels, leather buckets, gourds, and calabashes are challenging to document archaeologically because they disintegrate. For example, most estates had coopers. Either through reuse or commission, barrels they made were used as cisterns in and around houses. These vessels could have been recycled as cisterns to be placed near slave houses. Recovered iron fragments that could have been strapping for barrels or wooden buckets were found at houseyards at both estates. The fragmentary nature of the iron and the lack of diagnostic indicators make it difficult to identify.

Containers held water but could also illuminate how water was classified. Holy water was an important category of water in the French Antilles. By holy water, I mean specifically water sanctified through Catholic practices that involve storing water in basins and draining it directly into the earth. Labat noted that slaves in Guadeloupe used gourds to obtain holy water, which they drank every morning to protect themselves.[124] The enslaved living in Guadeloupe may have stored holy water in pots they inscribed with x's.[125] Cool water and holy water demonstrate a crucial but often overlooked feature of the things we examine in the archaeological record. What is of value here is not the container itself, but what it contained.

The vessels that were circulating in the Caribbean during the sugar revolution had many forms, some of which were depicted in the contemporary drawings discussed in the previous chapter. Glass bottles probably stored drinking water of varied qualities, liquor (both homemade and purchased), and beverages including mauby (water boiled with the bark of the mauby tree). They also stored rum and water infused with plants for medicinal purposes. Identifying bottle provenance on external features alone is difficult. These bottles were often documented at Roseau. As described above, officials responsible for applying duties and monitoring trade documented numerous ships carrying glass bottles from the British Isles between 1763 and 1807. In general, empty bottles and casks of wine were shipped to colonial ports. From there, those wine bottles could be purchased empty or filled with liquid.[126] For example, in 1789 an empty glass bottle cost one quarter of a dollar, and a bottle filled with wine cost one shilling.[127]

Large water jars have been documented in multiple urban and rural contexts associated with slavery. In Jamaica, for example, slaves repurposed Spanish olive

jars and placed them underneath roofs to collect rainwater.[128] Olive jars have an analogue in the Eastern Caribbean. Like Spanish olive jars, Biot jars were traditionally used to preserve olives—hence the distinctive glazed rim around the neck. They were popular throughout the French-speaking Caribbean. They were shipped empty to Martinique or Guadeloupe and sold in St. Pierre, Basse-Terre and Fort-de-France.[129] According to an 1830 advertisement, vessels stored between 22 to 272 liters.[130] According to Myriam Arcangeli, the average price of a Biot jar in 1829 was 17.3 livre.[131] At Bois Cotlette, they were listed as part of the probate inventory. While clearly identified as a French ceramic, they have been found in the Danish and British West Indies as well.

In addition to expensive Biot jars, people living in the estate houses and regimented villages of Portsmouth and Soufriere appear to have reused local jars for domestic purposes. Jamaicans, from 1655 forward, made and used large storage pots (modeled after the Spanish olive jars mentioned above) called Spanish jars. Unlike olive jars, which were glazed to prevent evaporation of oil or desiccation of olives, Spanish jars tended to be unglazed. While no tradition existed for such jars in the Eastern Caribbean, French potteries in Martinique, Les Saintes, and Basse-Terre specialized in making vessels for the sugar industry.[132] After their utility as a drip jar was complete, they took on an afterlife and re-entered a peripheral flow of goods, potentially to be used as waterways by the enslaved. In 1829, a drip jar with a ladle was valued for two livre in Guadeloupe.[133] Potteries devoted to making these ceramics have been documented in Antigua, Barbados, Martinique, Guadeloupe, and Grenada.

Goglets were also recovered from estate houses and laborer houses alike. Archaeologically, this vessel shape has been documented in St. Martin, Martinique, Guadeloupe, the Virgin Islands, St. Lucia, and Grenada. Ethnographic specimens were also documented in Jamaica, St. Vincent, and Cuba. Goglets held only approximately one liter, and in the 1800s were favorite items in the dining rooms of Martinique and Guadeloupe.[134] The same potteries responsible for drip jars produced coarse earthenware pitchers. In Guadeloupe, servants used these vessels to fetch water from jars or have a quantity available for use in the kitchen. They cost between one and three livre.[135] Most specimens of these vessels that were chemically characterized came from neighboring islands of Martinique, St. Lucia, and Guadeloupe.[136] This is true for the vessels recovered from Morne Patate, Bois Cotlette, and Sugarloaf.

Alternative Geographies

The observation that assemblages used to store water are so similar between estates has an important implication: there was a vibrant intercoastal trade in goods between islands. The documents described above hint at this trade. From the perspective of this book, these flows, as materialized in the trade assemblages of Dominica, were a way to resolve the predicament of subsistence in a period of changing political regimes and trading rules, in an era when the sugar revolution created increasing scarcity on the island and threatened the social reproduction of the enslaved, and indeed the planters. The channels between the islands of Martinique and Guadeloupe also constituted another kind of waterway, which enabled the sharing of cultural attitudes about things and how they should be used. They evidence a different sort of map, in which people living in the regimented slave villages of different imperial powers shared cultural attitudes to food. The predicament of insecurity was negotiated through interactions and relations that are unaccounted for in imperial maps of the Caribbean, and which are not contiguous with the borders and boundaries of imperial design.

Unrealized ambitions and realized identities shaped the colonial enterprise, creating opportunities and generating resistance. Waterways were often used to repudiate the colonial state. At the trial for his principal role in the 1791 New Year's Day Revolt, Henri Polinaire provides important details about a day when the whole of the island's enslaved population in the southeast rose up in revolt, to create an independent state on the windward side of the island.[137] He describes the organization of the rebellion, including key persona, where they rendezvoused, and the order of battle. The reason for the revolution, according to Polinaire, had to do with the mistreatment of enslaved workers. They had heard that Governor Orde had ordered enslaved workers be given three days a week to work their gardens and provision grounds, "and the planters refused to do it." Each estate had "a chief" who was responsible for organizing other slaves and "that free people of color who refused to assist should be put to death."[138] The ringleaders, Pharcelle and Pangloss, commanded 500 muskets between them. Their plans included a division of the island, where they took hold of the windward (eastern) side of the island and left the leeward (western) side of the island to whites who had not been killed in the insurrection. Planters who "were good to their negroes," meaning that they allowed sufficient time to work the grounds, were permitted to hold onto their estates. The plot was foiled by a series of unfortunate events.

Polinaire's testimony also included fewer concrete details, including the nature of the relationship between conspirators, the attitudes of rebels to violence,

and their plans for an alternate possibility. There was a mistrust of free people of color, whom chiefs were to assassinate if they "should speak of the matter."[139] For their part, colonial administrators feared that the Kalinago were assisting the revolutionaries. Between 1783 and 1786, a protracted maroon war took place in Dominica. With news of unrest in Dominica and the destruction of the mill and great house at one of the island's most significant sugar plantations, Rosalie Estate, there was considerable concern about potential solidarities that could not be anticipated by the British.[140] A news report in *The Gentlemen's Magazine* stated:

> The harmony of Grenada is changed into discord and anarchy, which prevail in every walk and sphere of life, from the highest magistrate to the lowest, insomuch, that a governor's arrival is prayed for by all sober and well-disposed people. The inhabitants of St. Vincent's are trembling for fear of bad effects from the Caribbees, who most certainly communicate with the rebels of Dominica.[141]

The above report suggests that enslaved laborers, maroons, and some Kalinago conspired in Dominica's first Maroon War. It also indicates that the nature of this conspiracy was not restricted to its shores. Whoever wrote this account feared that such violence would and could spread to other ceded islands. Such solidarities were not one-sided. Polinaire described one of the ringleaders, Pharcelle, coming down from the mountain to a spring to gather water, where he was spotted by "a caraibe named Bigaire who lives on Mr. LaRonde's Estate."[142] What this document implied is that Kalinago did live on plantations, and they had some rights to property there. It also implied that the Kalinago worked in concert with at least some of the planters.

Insurrections, such as the New Year Day's Revolt, bring to our attention an often-overlooked point and prompt an important question. These collective actions called "slave revolts" involved the willing and active participation of people who were legally defined as free, such as Polinaire, or asserted their freedom through force, such as maroons. The political alliances built were not clear cut, but they were informed by taxonomies of race circulating through the Eastern Caribbean and used by Europeans to govern their laborers. The account stresses the importance of communication within and between islands. The waterways that connected people on different islands were critical. The planning of the revolt, while focused on the southeast of the island, involved the coordination of slaves across the island and maroons living in the hardest-to-reach locations. As a "free coloured" of Martinique, Polinaire had seen firsthand the fear struck by the Haitian revolution and heard about the alternative possibilities such actions

afford. The account also stresses the importance of geography—specifically, the difficult terrain that forms the spine of the island running north-south, splitting the windward and leeward sides of the islands. Features such as springs and rivers were part of an alternative geography used by collaborators to mark the land and navigate its contours. It is important to note that in Polinaire's account, the institution of slavery was never questioned, nor was it made clear what the status of revolutionaries was after the revolution. Taken together, these observations suggest that enslaved people planning the rebellion believed that in order to enjoy a franchise of freedom, obtaining rights over land and its resources was the critical first step. It also suggests that the predicaments created by slave relations extended meaningfully beyond those legally defined as property.

Conclusion

Regional markets fostered a trade in goods, and some of these goods were necessary elements in the strategies employed by enslaved laborers to resolve the predicament of water in plantation society. Glass bottles most likely arrived through shipping routes organized by merchants. Cabotage, or locally organized interisland traffic in goods, was responsible for other water vessels. Biot jars and goglets found their way into the internal economy of Dominica's slave population through a complicated set of sea and land routes. All of these were used to negotiate the predicament of water insecurity that came in the wake of the sugar revolution in Dominica.

These peripheral flows also created predicaments since they violated political boundaries. While in most cases organized and paid for by those considered marginal to colonial society, these flows benefited the planter class, although the expense of social reproduction was borne by enslaved people of African descent. Enslaved laborers relied on glass bottles, Biot jars, and goglets to store, transport, and serve water and furnished these items themselves—using the money they earned from selling surplus foodstuffs grown in their gardens at local markets. Biot jars and goglets were relatively expensive. Glass bottles and reused drip jars were less expensive, but they still required time and money to obtain and use. Even calabash required some expenditure and time on the part of slaves. While the production of sugar limited water availability for the majority of the people living on estates, these same enslaved laborers were burdened with the expense of purchasing and making items to store water. This had the effect of reproducing social positions. Getting a glass of water was both socialized and socializing. By externalizing the cost of reproduction by relying on unaccounted work on the

part of slaves, planters were able to convert earnings into other forms of capital, some of which allowed them to achieve new social stations. By subsidizing planters' profits through unaccounted work, it became close to impossible for enslaved laborers to obtain legal manumission through purchasing their freedom.

Waterways were continually activated through peripheral flows of goods that water insecurity necessitated. At Bois Cotlette, ponds held water in which people might have washed, watered cattle, and obtained water for themselves. At Sugarloaf, humans and animals had access to rivers and millraces. Biot jars, local jars, and barrels held clear water with which one could cook, make beverages, and in some cases wash. Still other vessels held water to drink. Some water might quench one's thirst (sweet water). Other water might be used to protect oneself through the course of the day (holy water). These categories were not unique to Dominica.[143] Instead, vessels acted as a medium to transmit waterways across diverse regimented slave communities in rural Martinique, Guadeloupe, and Dominica, and to share ideas about making and using water.

CHAPTER 5

Mapping Belongings

> Boy named Ingello—Dr. Fillan said he did not pay any attention to the Boy although he had been there several times, & told me he was certain it was St. Vitus's Dance. . . . Their king named George had given [Ingello, a young African boy,] to [a captain with] an African coffel. . . He was taken here [either the Caribbean or Dominica] and none there would buy them. The Captain carried them to Liverpool and back to King George—who when the Captain had left him took several other coffers and sent them in chains. . . . After they were inoculate they fall off [sick] much with big bellies diarrhoea, eating of earth and one died. Ingello now appears one of the smarter of the boys. But their falling off depends more on their being made slaves than want of sugar cane in season.
>
> —Journal of Jonathan Troup, August 19, 1789

By Ingello's own account he was not a slave, rather a prince of Old Calabar, "in pledge of other negroes or goods."[1] He was waiting to be returned to his parents.[2] By the time Jonathan Troup recorded the story of this young African boy, it was mid-August, and five months had passed since Ingello arrived aboard a 193-ton ship.[3] It was registered in Liverpool and would make two voyages under Captain John Spencer between 1788 and 1789. Of the 277 Africans who began the voyage, 253 disembarked with Ingello, including 20 who had similarly questionable legal status. Troup was called to administer to Ingello because he no longer danced—an activity for which he had been known. This "dancing sickness" was among a number of pathologies, common to the condition of enslavement, that struck Ingello's shipmates, including big bellies (sometimes referred to as "dry belly ache"), diarrhea, and pica (the pathology associated with eating dirt). What is curious about this passage is that the owners of Bath Estate sought medical expertise as to why a boy might stop dancing. The owners simply did not know that the answer was staring them in the face. Their

ability to not know how this boy became enslaved empowered the system upon which they made a living. It also troubled the institution for those who bothered to ask. "Belonging" signals the spatial element of these relations, and the predicament of power, identity, and practice in which slaves found themselves.

Belonging can mean many things. As a noun, belonging is a portable possession, easily lost or transferred, and to which enormous emotional investment is attached. Whether or not someone was property was a primary distinction of personhood in Dominica, and one that has yet to be fully described in this book. Whether or not someone was free or enslaved set in motion a series of conditions that shaped the possibilities and limitations they might face throughout their life. Being owned is an abstract idea, however. Ingello's status was not a settled account for the lawyers in Roseau: "Arnold and Bruce [attorneys] thought it was better to see whether it was lawful to sell or send in mean time. . . [to] Bath Estate."[4] The concept of the enslaved human in the British West Indies evolved in conversation with English common law and ideas concerning enslavement born from Iberian engagement at the time.[5] Property, in English common law, is not a single thing, but rather a "bundle of rights" over a thing.[6] Three elements marked this legal fashioning: chattel property as opposed to real estate, permanent as opposed to indentured servitude, and inheritance of status from the mother.[7] Humans categorized as slaves were considered chattel, or personal possessions. They were not land or items attached to it (real estate). As chattel property, however, humans are false commodities—while they have little legal authority over their own capacities to produce, reproduce, or distribute their products with others, they "are called on to act in sentient, articulate, and human ways."[8] Despite the ambiguity about his legal status, Ingello nevertheless faced the same predicaments of belonging as those whose legal status was putatively clear.

As an intransitive verb, to belong can mean to constitute part of a larger taxonomy of material or immaterial things.[9] To which category a person belonged was a question that preoccupied colonial administrators in Dominica. By 1789, carefully mapped racial taxonomies were created to classify the enslaved and, later, free people of color, as described by a contemporary author.[10] In the course of his eight-month stay, before he was asked to leave, Troup had the opportunity to meet many people of many different stations in the colony—some with darker skin, some with lighter skin. Some spoke a version of French, and others English. Some were slaves; others were free. None of these identities aligned perfectly. The ideas about gender, race, and class that Troup carried with him would inform his interactions, but his Scottish upbringing would not have prepared him to address the new sets of predicaments around these factors that would arise in the

colonial context. The calculations of race and labor were made even more complicated by the nature of his job. Though Troup found himself interacting with the French- and English-speaking slaves of the island, this practice, he suspected, made him undesirable and of poor character to his colleagues. For Troup, the social landscape of Dominica and its unspoken rules were elusive. The sugar revolution created new and unexpected alignments among people. The unrealized plans of the sugar revolution meant that its intended beneficiaries moved into and through identities such as Béké and British planters.

Finally, there is the modern use, where the relationship between subject and object is inverted to ask, who belongs to this object, person, or idea? To say that a person belonged to an object, say a glass of water, would seem anachronistic in the context of the eighteenth-century Caribbean. Yet to say that an enslaved person belonged to a houseyard would not, because it was a locus of domestic networks that helped people manage the scarcity and captivity that framed enslavement. The subject and the object of the preposition are swapped, but the object remains an indirect object. As surveyors, estate managers, and would-be planters had enslaved laborers clear woodland, channel waterways into aqueducts, clear fields, and plant shallow-rooted cane, detailed archaeological evidence from houseyards shows the development of local knowledge to manage the predicaments of security and mobility. It was not possible to survive alone. Although, in theory, slaves had as much land as they could work in "their free time," preparing available land meant labor that would not yield for some time. It is hard work to clear patches of wooded land with cutlasses, stabilize the soil with dry stone terraces, and plant and protect crops that would sustain everyday life. Work was not the only thing that defined people's lives.[11] Materials recovered from the floors and hearths of households speak to idioms of care that structured relationships between people and positioned the enslaved in intimate relations with each other as they negotiated their predicament.

Different modes of belonging framed the experiences of enslaved laborers. Unrealized plans and realized collective identities shaped the colonial enterprise, creating spaces that were utilized for new forms of political action. In this situation, taxonomic categories service the colonial state, but also create a medium for dissent. Water was implicated in each of these modes. Water could be something that people possessed and lent qualities to the person consuming it. It could also be used in attempts to distance one group of people from another. Importantly, it was also central to domestic networks of care. Water's scarcity and abundance was a problem with health outcomes that differentially affected the enslaved. In Bois Cotlette, which had more bottle glass than Sugarloaf, people did not have

reliable access to fresh water—a scarcity that might have built on and exacerbated existing hierarchies. While the documentary record provides some of this story, the material remains enable us to understand some of the complexities on the ground. An assemblage of waterways allows us to map social relations on plantations, the need to develop innovative strategies to obtain water, the socializing of needs through objects, and the influence of those objects on everyday life. Ironically, attempts to cool and clean water helped to produce it as a scarce good, and thus joined its consumer to a world of hierarchical and communal relations.

The Predicaments of Belonging

In the decades following 1763, inequality in the enclaves of Portsmouth and Soufriere intensified and adopted new forms. Planters coerced slaves to labor in coffee or cane fields. Some planters accumulated wealth and increased their access to land and capital, while others lost their land as they struggled with debts. Buildings commissioned by these planters index their ambitions and the inequality baked into plantation landscapes. Archaeologists have often used material culture and human relationships reflected through it to infer status. For them, architecture, pottery, and personal portable possessions are idioms that are neither passive nor neutral.[12] They track changing ideologies and institutions and encode the landscape with ideas of status and social order.[13] Certainly paintings of the time reflect such concerns in dominant narratives.

In 1763, William Young emphasized that Dominica would be a sustainable and harmonious society. In addition to mapmakers, estate agents, and military personnel, he recruited artists, the most prolific of whom was Agostino Brunias, who visited a number of different islands through the 1760s and 1770s.[14] In his paintings, Brunias promoted a "visual culture of refinement" in the Leeward Islands, despite the conflict and violence associated with slave societies in the Caribbean, while at the same time mapping racial, social, and gendered hierarchies through the type and "opulence of clothing, objects, and surroundings as by skin tone, hair color, or physiognomy."[15] He rarely depicted the labor of plantation agriculture in his paintings, opting instead to focus on scenes of domestic work, or the rich social lives led by the enslaved in the villages and public spaces of the Eastern Caribbean.[16] Brunias's work was, therefore, involved in larger conversations about slavery, the slave trade, and their abolition, which marked parliamentary debates in the late eighteenth century.[17]

Even though such paintings carry enormous ideological baggage, there is a utility to Brunias's paintings in interpreting slave society.[18] Agostino Brunias's

paintings were "genre paintings."[19] Popular in Europe, especially in France, they took ordinary life as their subject. In the Caribbean, they defined "the expectations and desires of the artists, sojourners, and colonial agents who were confronted with the new and different in the tropical regions of the world."[20] Brunias captured material culture with a fidelity that provides one window into object use and its centrality in social acts. Three paintings—"Linen Market," "View on the River Roseau," and "Creole Woman and Servants"—depict volumes of water being moved around Dominica (figure 5.1).

Scholarship on professional artists of the region emphasizes how composition, including stance and position of subjects vis-à-vis each other, often encode racial, social, and gendered hierarchies. Brunias followed conventions from natural history by encoding classifications between black, white, Kalinago, and mulatto through context, stance, clothing, and associated personal portable possessions. "Linen Market" depicts a market from which planters, free people, and enslaved laborers purchase produce, household goods, and linen. On the left side of the painting, in the background, a naked male slave is carrying a similar jar to that depicted in "View on the River Roseau." While the slave might be carrying the water to his house or his owner's house, he could also be selling water. For example, on February 13, when Troup had moved to Fort Shirley to attend to soldiers and garrison slaves, he described his purchases for the day: "Bought half a bit of water. Lemons 2 and 3 a doge."[21] The water here is an invisible object, but nonetheless of value.

Brunias depicted water and its containers in conjunction with the labor of people of African descent. Whether washing clothes in the Roseau River, gathering water from the river, carrying water in large ceramic vessels, or serving that water to those of higher rank, the public use of such vessels is never associated with the slave's use. For example, the oil painting "View on the River Roseau" depicts planters, free people of color, and slaves engaged in various waterways (figure 5.1). In the foreground, there are five groups consisting of women, men, or children. In the background, women are in various stages of undress as they wash clothes, attempt to cross the river, or fill jars or buckets with water. Here Brunias aligns complex racializing categories with subjects who occupy different strata of society. For example, the group at the center includes a woman who would have been racialized as white, accompanied by a servant of shorter stature. She appears to be purchasing an item from a huckster who is seated on the ground. Both the servant and the huckster would have been racialized as black. Behind and to the right are two women who would have been racialized as "mullato" in conversation with each other. To the far left, three women and a child are

FIGURE 5.1. *View on the River Roseau, Dominica* (1770–80) by Agostino Brunias (1736–1796). Oil on canvas. 84.1 x 158 cm. Art Institute of Chicago. This painting depicts an agrarian landscape of Dominica with several different water-related activities, including bathing, washing, and gathering water. In the lower left-hand scene, the artist depicts a water jar.

in conversation, one of whom, depicted in a state of undress compared with the others, is filling a jar with water. The jar appears to be a small drip jar or a Biot jar. While it is important not to attach objects to specific conditions, paintings such as "View on the River Roseau" remind us that much of the engagement by enslaved laborers with water was through the lens of work. Even utilitarian objects such as water jars carried with them meanings of distinction. (For a close-up view of a similar landscape, see Brunias's "West Indian Landscape," listed in table 2.1). The interactions between subjects of paintings also reveal social distinctions and the role of objects in difference-making. Washing, bathing, serving, all carry with them a world of context that can only be guessed by the viewer. "Creole Woman and Servants" (ca. 1770) depicts one woman attending to two women who are seated outdoors, presumably in a garden. The servant is carrying a tray with two glasses in one hand and a pitcher containing liquid in the other. The pitcher is the same shape and size as many of the goblets recovered from archaeological contexts in slave villages. But this vessel's apparent surface distinguishes it from others. It appears to be treated on the outside with a dark brown glaze and on the inside with a white glaze. Archaeologists identify French tableware with this surface treatment as *faience brune*. Vessels were coated on their exterior surfaces with a brown manganese glaze, and in some cases were composed of a different clay fabric. Such depictions provide some context, at least, for objects recovered from archaeological sites. Water, taken from the water carrier, was at some point transferred to this small, liter-sized vessel to be used in a public ritual of consumption. Water from this vessel was not intended for all—only a limited few.

Brunias's paintings are not just colonial texts promoting a vision of a stable society, but also colonizing texts shaping material practices in everyday life. Ironically, Brunias was endorsing a "visual culture of refinement" that accompanied the violence associated with the sugar revolution across the Eastern Caribbean.[22] The distinctions detailed through the environment, positions, and interactions in the paintings were not colonial fiction. The paintings locate in the cultural politics of everyday life the role of belongings in marking distinction—at least from the perspective of European travelers. Objects did not just reflect the people who wore or used them; they helped craft those individuals. If we are to take their discussions of objects as a discourse, we can consider the indexical meanings of artifacts found in the archaeological record.

Troup and other white folk, rich and poor, subscribed to stereotypes about African backwardness that were widespread in the Caribbean and hinged on racializing taxonomies in which skin color conferred cultural capacities, or lack

thereof. A lawyer who practiced in Martinique, Médéric Louis Élie Moreau de Saint-Méry (1750–1819) wrote an influential treatise on race in 1789, which included West Indians (Amerindian), East Indians, Africans, and Europeans.[23] The offspring of the latter two would fall into one of nine categories. The different degrees included people who would be identified as "sacatra," "griffe," "marabou," "mulâtre," "quarteronné," "métis," "mamelouque," "quarteronné," and, "sang-mêlé."[24] This taxonomy was relational, premised on an individual's proximity to whiteness, "thus attempting to impose a white supremacist order on a highly volatile social reality that had virtually vanished in his own lifetime."[25] A quarteronné ["capre"] had an African parent and a mulâtre parent. A métis had a European parent and a mulâtre parent. A mamelouque had a European parent and a métis parent. A quarteronné was the child of a mamelouque and a white. And a sang-mêlé had a quarteronné parent and a white parent. The identifier "Creole" stood outside this taxonomy. Creole generally implied people who were racialized as white, though it technically meant an island-born person, free or enslaved.

Similar calculations were at play in Dominica. For example, in theorizing how race worked, Troup argued that parentage and the environment were two essential elements:

> Colours of complexion depend. Black children at birth are like Mullattoes. Mullattoes [children are] like white children. But both, by exposure to air, put on their natural complexions in a very short time. Though [the] last [mullatoe children do] not [change] so soon. But the complexions are very various here from jet black to European whiteness 8 or 9 different degrees very perceptible upon minute examination.[26]

Here, Troup alludes to the polysemous histories of the categories; they were nonetheless important as a tool of slave governance. That these were not stable categories makes them particularly mercurial subjects. People slipped between classifications in different enumerations. For example, between slave lists attached to probates, and the triennial slave register, the way people were categorized changed. These categories were borrowed, innovated, and changed, reflecting the flow of ideas from one nation to the other, anxieties over the permeability of identity boundaries, or the need to reassert hierarchies in the light of taxonomic slippage. By 1817, other terms included "capre[se]" from Spanish, which could be used instead of quarteronné, and "yellow" from English, which could be used instead of sang-mêlé.[27] Despite this, calculations that went into assigning race on the island were prone to slippages.

Planters reserved greater contempt for entrepreneurial women of African descent who occupied urban spaces, who were identified as "mulatto women," indexing the racialized category they inhabited, but also the necessarily violent histories of sex and enslavement that was part and parcel of plantation society. Troup encountered mulatto women on market days in town, where as slaves they worked as housekeepers, seamstresses, and hucksters.[28] Troup noted that "they are very prolific at times when she is chaste, if [she is] not [chaste] many abortions are consequence."[29] That Troup identified these women as the instigators of sexual congress between themselves and white men was not uncommon for the time period, despite the fact that such women were often the subject and result of sexual assault.[30] Nor was it uncommon for white folk to associate enslaved people with capricious and violent acts. Troup continues, "They are very cruel to the Blacks from whence they spring and a Black would do anything before they had her for her mistress. They delight in whipping the Negroes [where they] will throw themselves into a passion."[31] Troup here is not just describing violence, but its racialized distinctions. Like relational taxonomies in Martinique, race is calculated through proximity to whiteness. His account revels in the spectacle of violence and attaches it to a racialized body, rather than the social institutions that promoted it. By overlooking the many kinds of violence that could bring about sexual congress between two people, Troup naturalizes male promiscuity, for which he holds women responsible.

The implication is clear. The boundaries between racialized categories were fluid, and at the same time needed to be policed through measures that socially and geographically distanced planters from enslaved people of African descent. Violence was one mechanism to mark distinctions. Whether or not this was the case, it certainly was an ideology that slaveholders held. Items of personal adornment also played a significant role. Troup continues:

> They are remarkably fond of Dancing, particularly minuets, which some of them do with a good grace. [They are] also fond of all Candy dress, particularly of red, yellow and Green, and in fact, it suits their Complexion best of any though often they Dress in white particularly when they go to church. Some can read & write. Most can do neither. But they are great Gallants if you treat them with plenty of money. They are far more extravagant than our women in general. They must have a vast variety of Gold Ear Rings & Lockets. Some have a great variety of gold beads for a necklace and lace around their beaver hats & silks. . . . They are very jealous of one another & parties are formed & they are named after their Leader or the quarter of

> the Town most of that party live in & they shine at their respective Balls which they hold chiefly in time vessels are in Bay—2, 3 months before & after Christmas.[32]

Troup continues to describe their daily practices, stating, "They drink tea or coffee early—they walk or lull about take a relish of fish & plantains yams. At noon [they] dine [for] 2 hours after upon fish frogs called Crapos (excellent soup like chicken) sometimes a pig, a hen or chicken with vegetables & fruits & Glass of water or wine." Troup implies that a glass of water is an extravagance akin to the other sumptuary pleasures ascribed to "mulatto women."

Politics of Polite Housing

In the complex taxonomies of race and class in Dominica, the most significant social division was that between British plantation owners, who considered themselves white, and enslaved people working their lands, who were Africans and racialized as black. These white elites learned to run plantations from West Indian planters, with whom they had long involvement because of their history as merchants, soldiers, and tradespeople who supported plantation economies. They were not especially upper class, and their knowledge of practices of culture and refinement in the West Indies were limited, but, in their own eyes, their identity as planters aligned them with these older West Indian families and British landed gentry. It also distanced them from Africans and their children, who worked their land. Buildings commissioned by these planters index their ambitions and the inequality baked into plantation landscapes.

One of the most evocative idioms for distance in Dominica are the arrangements made for housing elites and slaves. Estate houses constituted a West Indian version of "polite" architecture.[33] Polite architecture is a building that is national or international in style, designed by a professional architect or master mason, constructed with the aid of plans and/or associated texts, and built and dwelt in by the elite. Though built on a more modest scale, British polite housing in Dominica cross-referenced polite housing in the British Atlantic. Rectangular floor plans of the houses and the principal façade, "divided evenly and symmetrically between four windows and a door on the first floor, characterized British polite architecture in the Caribbean."[34] While they paid attention to notable West Indian authors, such as Edward Long, who said that estate houses, "should be fixed on airy, dry and elevated, spots, raised some feet above the surface of the earth," they also appeared to adopt metropolitan attitudes toward polite architecture rather than West Indian.[35] There were no verandas to allow breeze

but obscure the sun. And the material with which they constructed the ground floor was generally made of stone, which, according to Long, "is a very improper material in this climate for dwelling-houses, on account of the damp and chill which it strikes in rainy weather."[36] What these buildings did not share with West Indian polite architecture was an eye to the environment.

Polite architecture can only be understood as a counterpoint to vernacular architecture (figure 5.2). Vernacular structures were the homes of people considered to be "lesser folk." They are built without plans, relying on accumulated and shared knowledge about space, materials, and environmental conditions. Fewer of these buildings are visible today, and many of those were built in the decades after legal emancipation in 1838. A description of slave housing by an anonymous resident author was published in an account of his travels throughout the Eastern Caribbean in 1828. He spent a majority of his time in Dominica, where he had the chance to visit sugar estates and coffee estates in the vicinity of Roseau, Pointe Michel, Soufriere, and Grand Bay. He described slave housing in the region as "cottages, neatly thatched with palm or plantain leaves. Some have floors of wood and are well furnished with a bed, cooking utensils, &, etc.; but this depends on the station and industry of the occupier."[37] His account indicates that the location of the village was the decision of the planter or his manager, but that this did not entirely extend to use of the land by the enslaved. While the author's descriptions of estates are vague, they do provide some clue about the land set aside for slaves: "The plantation negroes are provided with good houses, each containing two, some of them four apartments. Their cottages are thatched with leaves of the palmetto tree, or dyed Guinea grass. They have poultry-yards, and gardens railed in; and the latter produce all sorts of tropical fruits and vegetables."[38] It is clear from the account that houses were not uniform in design or contents, but that the variation in housing was very much tied to the status of its occupants.

Just like the West Indians of Barbados, Antigua, and Jamaica, new island elites acknowledged that they shared the same social space as enslaved Africans and their children. But they, too, subscribed to racializing taxonomies that classified slaves as backward, capricious but governable, and distinct. Richard Neave, for example, commissioned the estate house at Sugarloaf with an eye toward distancing the residence from the village. This estate house is identical in construction and floor plan to one that was built at Batalie Estate, suggesting that there was a plan in circulation that builders followed. Contrary to Long's instruction, the houses were built with a masonry ground floor that acted as a store, with a wooden second floor where the entryways and windows were symmetrically

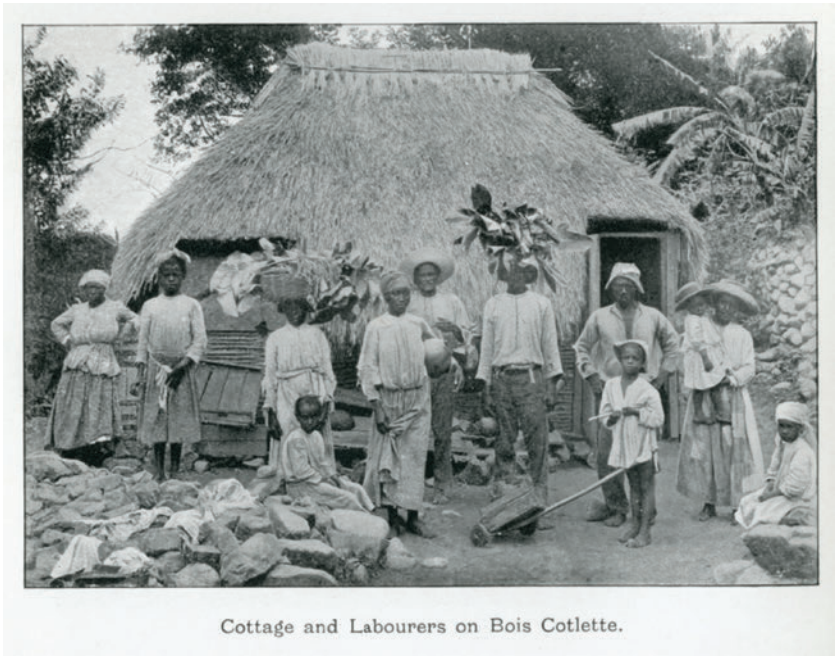


FIGURE 5.2. A Dominican houseyard at the turn of the twentieth century. The man and woman in the center are holding calabash water vessels. This photograph of wage laborers standing in front of a vernacular "ti kai" made of plastered wooden lattice on Bois Cotlette estate was taken more than sixty years after emancipation. Published in Vaquero, *Life and Adventure in the West Indies*.

placed. It appears the only accommodation to the environment was the alignment of the passage, which permitted a strong breeze to enter the house. This alignment also afforded a view of the estate—this way, conceptualizing space created distance between an elite observer and the landscape around them. From the entryway, Neave, if he had visited his property, would have been able to see at a distance the cane fields, sugar factory, and estate houses at Alleyne, Bell Hall, and Chance estates. Out of sight would have been the kitchen and other outbuildings that serviced the estate house. The village where laborers lived was only twenty meters away but concealed by a dramatic change in elevation.

Buildings like Sugarloaf's estate house, commissioned by absentee landlords, also require us to turn our perspective around. Rather than just considering how the estate would have looked from the entryway, such organization also paid attention to how the estate house looked from a distance. The houses where workers lived were out of sight, and organized with similar principles of

symmetry and spacing. The village extended away from the estate house in two parallel rows, in which houses and their gardens sat on platforms of relatively similar size. The combination of daily conditions for those who lived there and the overall organization of the estate meant that the estate was built to be seen from afar rather than lived up close.[39] For Richard Neave, this improvement of the land had tangible results. At the time of his purchase of Sugarloaf Estate, Neave was a merchant based at 9 Broad Street, London.[40] In 1795, he was bestowed with a Baronet for Dagnam Park, a title he was able to pass down to his heirs.[41] By commissioning an estate house in a place he would never visit, Neave was able to develop the symbolic capital that would advance his station at home.

French-speaking planters were positioned awkwardly in the spatially ordered social hierarchy of the plantation. From the perspective of the British island elites and their managers, all French planters shared the same deficiencies: a vague familiarity between French and Kwéyòl spoken on the estate; a more condensed arrangement of housing, which promoted too much familiarity; and material lives idiomatic of the West Indies much more than metropolitan tastes. According to British elites, French polite architecture in Dominica tended toward the pragmatic and less to the ostentatious. Brunias depicted these buildings against the background of the Roseau River. They consisted of a two-story building, where the ground floor, built of masonry walls, served as a storeroom.[42] A wooden-walled first floor would have been the residence and would have been entered from the side. A veranda on the principal face of the house would have provided residents a cool breeze and shelter from the rain. The house would have formed one side of a courtyard that would also have functioned as a glacee. Slave housing and factories formed boundaries on the other sides of this paved courtyard. As such, there was always a suspicion that they were closer to the enslaved in political and taxonomic ways.

French planters, aware of these stereotypes, nonetheless judged themselves by standards that subscribed to racial taxonomies of the time period. In their own eyes, they were superior to enslaved Africans, and they were meticulous in keeping their public distance. The earliest polite housing in Soufriere, including surviving houses at Morne Rouge and Petit Coulibri, standing ruins at Bette Rouge and Crabier, and excavated foundations at Bois Cotlette and Morne Patate, conformed to the descriptions above and could have been a prototype for Brunias. A 1777 indenture of Belligny to his heirs provides a description of the disposition of the land and buildings at Morne Patate: the "dwelling house built of stone, 60 feet long by 20 and galleries on three sides."[43] Vernacular housing,

where slaves lived, was close to and visible from their verandas, marking a distinct contrast from British polite architecture.

Distance was a concern, but enforced through other means. Not all references to polite architecture were in the floor plans and the facades of houses. The owner of Bois Cotlette, for example, built a short wall to divide his living space from that of the enslaved. It was also in smaller details that difference shaped how spaces would be lived in. At all of the properties, distance was maintained through hydrosocial means. Perhaps the clearest references to polite French architecture are the dependencies, including the kitchen and its cistern. Owners of Crabier and Morne Rouge, for example, employed dripstones to purify water for their own exclusive consumption. The estate house at Morne Patate contained a case à eau: a crawl space or outbuilding where Biot jars stored drinking water (figure 5.3). At Bois Cotlette, Biot jars were encased in masonry walls where nearby rooftops collected rainwater to fill them. Biot Jars encased in masonry improved the water. Sediment in the water was allowed to settle, clarifying the water over time. Because of the insulation provided by the stone and mortar, these cisterns also cooled the water in ways that were not possible in open cisterns. These smaller cisterns were characteristic of polite French architecture, including well-to-do townhouses and estate houses.[44] Case à eau also distanced the water from its source, separating it for the exclusive use of the slave owners.

After 1763, colonial houses in Dominica, both polite and rustic, came to carry meanings of higher or lower social status with differing degrees indexed by size, building material, and decorative elaboration. French planters tried to create spatial distance when they could by building larger estate houses and manipulating landscapes. The owners of Bois Cotlette and Morne Patate dismantled their estate houses sometime after 1777 and constructed grander buildings that referenced polite architecture in Martinique and Guadeloupe. Both planters played important roles for the French during the American Revolution. Bellot was the island's agent at the Court of Versailles, and Belligny sat on the island privy council for the French governor. The new housing referenced grand estates in Martinique and Guadeloupe in the decorative elements, construction materials, and layout. Bois Cotlette was most closely associated with Joseph Bellot, who took possession of the property when he married Adrien Constance's niece. The centerpiece of the estate is the maison de maître, located in the center of its glacee. The house was constructed out of masonry with a gabled roof and dormers. While much smaller, the front-facing facade matches the maison de maître at Habitation Macouba. The internal layout of the house consisted of a central parlor with stone and ceramic tiles and a circumambulating gallery surrounding

FIGURE 5.3. Biot jar from southeastern France used to store water for the kitchen at Morne Rouge in Dominica, 2015. Photo by author.

it. This layout is common among grander estate houses, including the maison de maître at Habitation Clément. When this house was built, it coincided with a relocation of the slave village to a hillside farther away and arranged in such a way as to obstruct the view of the inhabitants.

Belligny, who owned properties in both Dominica and Martinique, including Morne Patate, commissioned the construction of an estate house employing this floor plan over the older, more humble iteration. An 1816 probate indenture states that the estate house was fifty-five feet by forty feet. It had a masonry foundation and a wooden frame. It contained six chambers, "one of them a store, a hall and two galleries." According to the anonymous author who visited the area in 1823, the "mansion house" was a grand house with "A large *salle a manger*, or dining room with two bedrooms . . . wooden blinds to admit air and exclude the rain."[45] Because the owners were used to hosting neighbors, friends, and tradespeople like Troup, they built "barrack rooms for visitors" on the second floor. To protect their valuables, the owners built a "safe" on the second floor "for all sorts of household goods."[46] Like Sugarloaf's estate house, Morne Patate's and Bois Cotlette's played with sight lines and perspective to present a particular

kind of grandeur from afar. While it is clear that the polite architecture of the French accommodated the landscape in ways that their British counterpart did not, it had the same effect: to distance the elite observer from the landscape surrounding them. The anonymous author described the arrangement of the estate housing: "The negro houses extended in two rows, at a short distance from the mansion-house."[47] While we do not know if the author is describing Morne Patate, archaeological studies of the site documented a similar arrangement in village layout.[48]

The area surrounding the estate house was expansive. The boundary of this yard was clearly delineated by a wall and cobble surface. The areas attached to the housing in the village decreased dramatically and became more regimented. The platforms ranged in size from eight to ten meters on one dimension and ten to twelve meters along another dimension. Evidence of architecture, in the form of postholes dug into the subsoil, indicates that the houses were roughly three meters by five meters. The floors of the houses may have been wooden or compacted earth. The orientation of these structures shows an equal regimentation to the orientation of the buildings and the use of space. Concomitant with this change was an increase in the number of enslaved people living on the site. In 1777, Belligny claimed ownership over 117 Dominicans living on three different plantations. In 1816, 120 enslaved workers lived on Morne Patate alone. These people were Creoles: people who were born on the island and had lived on the property since the 1740s. They also included people born on the estate after British annexation. Importantly, many of the enslaved Dominicans living there in 1816 were born on other islands or continents.

While neither personal nor portable, the houses did the same thing as clothing, buttons, and other items of conspicuous consumption, which Brunias used to fix class and race in a harmonious colonial society. As landscapes to be observed, Sugarloaf, Bois Cotlette, and Morne Patate signaled the improvement of its residents; the fields in the background were an index of the island's productivity and the ability to improve it. They also marked the people who owned these lands in an exclusive community of belonging—an exclusivity that began to extend to planters "of color." In 1831, the assembly passed the "Brown Privilege Bill." This opened up the franchise beyond the narrow confines of skin color and resulted in the election of three people of color to the assembly.

Belongings in a Houseyard

The houseyard was an assemblage of features, landforms, and artifacts consisting of a swept space where "one house or more, is usually surrounded by . . . a small quantity of land, and set off from the outside by a fence, clumps of vegetation, or a hedge or living fence."[49] At an important and fundamental level, this framework dissolves the distinction between inside and outside, where people played games and sang songs, reared children, cooked food, sharpened tools, rested and relaxed, birthed babies, and buried community members.[50] Because the house and yard vary within and between Caribbean islands, archaeologists have employed the house and associated yard as their unit of analysis in addressing questions of cultural politics and reproduction.[51] The arrangement of the yard, including the layout of the house, the location of the hearth, and the organization of the garden, provides a lens through which to interrogate how slaves used domestic space.[52]

Personal portable possessions found in houseyards illuminate how people negotiated predicaments, though in an indirect fashion. Evidence of engagements with the land provide more direct accounts of such situated knowledge. Pits, floors, and cooking hearths of the village contained a rich assemblage of dietary information. Such information has traditionally been used to reconstruct foodways, but it also provides essential data about people's relationships with the environment.[53] Some plant species were African, some from the New World, but all were caught up in relations with humans. People propagated guavas, and in turn, the tree provided fruit. Indeed, to consider the ecological priority of the plot would be to change the idiom of the houseyard from one of accumulation, as has been widely discussed, to one of reciprocity.[54] The geography of lives and livelihoods of enslaved people extended beyond the narrow confines of the estate and was significant for more than its denizens.

The Social Life of the Houseyard

Slaves, whose labor was legally not their own, not only possessed goods produced in their free time, but also owned what the sale of those goods could yield. Discussions by the anonymous author and Young speak—though only through the aid of context and analogy—to the relations created in and around the houseyard and to idioms of kinship and support. The archaeological record is helpful in building those analogies and provoking questions of the text to flesh out the context. In this case, the provision grounds, gardens, and yards were sites where the work of slaves and others could be exchanged on a reciprocal basis. For example, in the gardens of an elderly slave, the work of granddaughters too young to

work in the fields could be seen as a set of obligations encumbered by kinship. It could also be seen as a set of gifts, in labor, through which the sale of goods could be reciprocated. Although the houseyards were units of production, savings, and investment, these would not be complete descriptions of their social function.

We know little about who lived in these houses and what their relationships were to each other. In the 1823 anonymous account, the French estate described by the author had a village extending behind the maison de maître:

> All the married negroes had a house to each family, and the men who had no families had a large house, properly fitted for their accommodation, like a barrack. . . . On extensive estates, these different buildings form small towns of two to four or five hundred people.[55]

The author is, no doubt, bringing his assumptions about kinship and family to describe the internal workings of the village at this French coffee estate. While it is true that most enslaved laborers who married did so with someone who grew up on the same plantation, there are a range of life histories of the enslaved that include some movement from one plantation to another.[56]

In some cases, these could be neighboring plantations owned by the same family. In other cases, this could mean moving workers to entirely different colonies. For example, through either bankruptcy or frustration, Bellot and Constance relinquished their ownership of Bois Cotlette to Charles Court. By 1817, J. B. Dupigny, a local estate manager and their son-in-law, purchased the estate through a sale of the majority of the eighty-seven slaves who remained on the estate. With only twelve slaves, Dupigny began to acquire means to grow coffee. The majority of the slaves Dupigny sold were shipped to a new plantation in Demerara.[57] As such, siblings who shared the same mothers or fathers could occupy different houses, villages, or colonies. That being said, linking the household with the houseyard was a concern, so much so that by 1823, laws enacted to encourage biological reproduction of slaves in the West Indies discouraged the separation of husbands, wives, and their children under the age of fifteen.

The document authored by the anonymous resident in 1828 fails to mention that siblings who shared the same mother could occupy distinct structural positions. A series of manumissions for enslaved individuals aged about twenty-one further suggest that the children of male planters and enslaved women would be manumitted upon reaching the age of majority. In 1788, Jean Louis Bellot, Joseph Bellot's son, manumitted Charles Melor, a "Creole Mesif," when he turned twenty-one. At Morne Patate, Nicholas Croquet Belligny manumitted

Pancrasee, a "mullato man" aged twenty-two years. Two years later, Belligny's son manumitted Germain, a mullato man, on his twenty-fifth birthday.[58] Such children would have grown up with their mother, in the village, but most likely were afforded a status quite distinct from other yard mates.

According to assemblages from Morne Patate, the estate that was dramatically transformed in the years immediately following the sugar revolution, many of the personal and portable possessions recovered from these houseyard contexts were found in several large circular features.[59] Subfloor pits beneath the houses are a common characteristic of slave quarters, especially in the antebellum South. While some contextual and ethnohistoric data suggest they may have served as West African–style shrines in the Southeast United States, many have argued that these pits acted as places for people to store their individual belongings.[60] Accordingly, their presence would suggest a concern over private property and its security.[61]

Sometime after 1761, an enslaved laborer buried what must have been a "life savings" underneath the floorboards of their house. In a storage pit associated with one houseyard, we recovered sixteen copper sou. On one side, Louis XVI was inscribed. On the other, *Colonie de Cayenne*. These coins were minted for an expedition undertaken by the French to found a new colonial enterprise in Guyana. The coins themselves were in circulation around the West Indies almost immediately. Indeed, some enslaved Creoles took advantage of new laborers as a potential workforce for their own grounds. One could imagine that new arrivals would easily become responsible for household production, "in quest for wood, water, or grass, as may be wanted."[62]

Importantly, these differences can be granular where the amount of land that workers had access to, the system of land tenure in which it was worked, and the status of those who controlled decisions over the land equally shaped domestic assemblages.[63] Recruiting new houseyard members was a way to build the domestic network and the kind of resiliency a robust network carried with it:

> . . . every negro in his garden, and at his leisure hours, earning much more than is necessary to feed him, these young inmates are the wealth of the negro who entertains them, and for whom they work; their work finding plenty for the little household, and a surplus for sale at the market, and for feeding his stock.[64]

On well-managed estates, the author says, "where negroes have long been resident, many of them possess hoards of money, which they deposit with the manager or are, at all times, ready to lend him."[65] Coins such as these remind us that

assemblages of belonging are not just a function of accumulation, but emerge from substantive practices through which people engage with each other and the land.

Rather than being the function of personal property in which goods are individuating, such pits can also suggest that houseyards of the regimented villages formed the nucleus of "domestic networks," whereby individuals from one plantation might belong to multiple households, including those located on different estates.[66] The strange land and conditions of labor engendered new bonds that originated in "common assumptions, idioms, and beliefs."[67] "Domestic networks" in Dominica engendered relations of care for newly arrived Africans who had yet to accumulate wealth, build food reserves, and develop the kind of social ties that enabled them to feed themselves or make a profit in the market.

Newly arrived slaves were oftentimes incorporated into existing households as a way to socialize newcomers to the conditions in which they found themselves. Young described that managers would "distribute them [enslaved Africans] in the huts of the Creole negroes, under their direction and care, who are to feed them, train them to work, and teach them their new language."[68] He continues to describe that households were "oppressed" with new mouths to feed, and they received "no allowance of provisions what so ever."[69] On Grenada and elsewhere, long-term residents were entrusted with the social reproduction of the estate. While Morne Patate, Bois Cotlette, and Sugarloaf were home to a large number of Dominican-born Creoles (70 percent, 77 percent, and 44 percent of the workforce, respectively), there were also a significant number of Africans. These newly arrived Africans were handed over to "old negroes" on the estates "to be taught the requisite duties."[70] For the necessities of everyday life, they had to rely on the houseyards of which they were made members. For the service of indoctrinating slaves, Creoles were given "a knife, a calabash to eat from, and an iron boiling pot for each."[71] Presumably, these wares given to the household were intended for the enslaved laborers, but could have also been sold to accumulate cash for the household.

Other options were to engage in less formal transactions, such as games of skill and chance. Gaming in the eighteenth and nineteenth centuries consisted of numerous games, including but not limited to card games, dominos, backgammon, and games of chance using dice. The popular English game of draughts is the same as American checkers and was played with circular disks. Archaeologists have found game pieces on predynastic sites in Egypt, Iron Age sites in Cyprus and Turkey, on British Roman sites, on pre- and post-contact-period Native American sites across the American Southeast, and on colonial-period

sites across the world. In his first few days, Troup witnessed two newly arrived enslaved Africans play a game on "a board with [a] number of hollows in it & they pass from one hole to another . . . small pebbles. . . . They [also] will take pieces of bottles & stoneware & toss them up after they have rapidly mixt them from hand to hand & in this way gain plantanes."[72] The passage seems to indicate two distinct games were being played. The board game being played is probably wari.[73] Wari is a game of skill found throughout Africa, the Indian Ocean, and the West Indies.[74] At Morne Patate, sixty-three carved ceramic disks excavated from houseyard contexts match the glass and ceramic fragments described in the text. Interpretations of "gaming disks" range from "button backs" to "counters" to "gaming pieces" to toilet paper.[75] Regardless of meaning, games of skill and chance were an important way that new slaves acquired food. The presence of these pieces on the site would seem to indicate that such concerns were at play for at least some of the residents.

These domestic networks formed around communities of care. Take, for example, Granny Sarah, who was enslaved on an estate in St. Vincent called Calliaqua. William Young the Second, who authored the account, estimated her age to be ninety-five and reported that she was born in Africa and enslaved at the age of fourteen after having her first child.[76] She had first labored on the family estate in Antigua for two years. Her age conferred upon her a special status among the enslaved and for Young. In his account, he speaks about how she held court among the other slaves when he first arrived on the island. He describes how he looked forward to dancing one jig with her at the Christmas ball. Importantly, given her age, she was no longer required to work except in her garden, "some hours of the day." Sarah had formed a combined household with multiple generations. To increase her income, she recruited her young, six-year-old great-granddaughter to assist in the garden and was "thereby very rich."[77]

The burden of care for children varied depending on the kind of estate, the disposition of its manager, and the age of the child. On sugar estates, "The children are taken care of, during their mother's absence in the field, by the other old women no longer equal to field labor."[78] On a coffee estate, the anonymous author describes children "playing in the sun while their mother picked coffee."[79] Six appears to be an important age, as it is when the children began to labor for the estate in a more formal capacity. Between the ages of six and twelve, they were placed in the vine gang, where they were responsible for small tasks like collecting vines for the animals and light weeding and hoeing. This is the age, the anonymous author claims, at which English mothers and

fathers send their children home for education that they could not receive in the West Indies.

Formal education is, of course, only one manner through which knowledge is imparted from one generation to the next. Notwithstanding the requirements of labor that slavery imposed on children as early as the age of six, illiteracy was not a foregone conclusion. Writing slates were found in nearly all houseyards that dated to the period immediately after 1763. In most cases, the fragments of slate were small, and evidence suggests some fragments were crafted into buttons. Despite alternative possibilities, one fragment shows that the slate was still used for writing. This fragment found on the surface of one houseyard has etched into it two letters that are hard to make out. Items such as writing slate offer questions that are difficult to answer. Who tutored people to read and who learned to read? Distinctions such as young and old, family and nonfamily members don't answer this question. Many who lived in the same houseyard, who might belong to the same household, were not family. It could also be the case that some took responsibility for educating those who might not be considered kin.

There was a material basis by which people achieved status and gained wealth through the work of others. Personal portable objects, and archaeologists' interpretations of them, have shown how culture was a tool both for subjugating class interests and for repudiating those interests by subordinated classes.[80] While the houseyard and its contents came to exist through the plans of English-speaking elites, they formed a space beyond their plans. As the enslaved dealt with details of the environment like hurricanes and droughts, as they made their day-to-day decisions about what to plant and where, a situated knowledge was expressed in other, equally important finds.[81]

The Ecological Life of the Houseyard

To make the land suitable for housing, people had to clear forests and carve out platforms. It is no surprise, then, that the same archaeological record that confirms the organization of the workers' village also shows evidence of a site plagued by landslides and erosion. Without the benefit of terraces or other means of support, the loose, sandy soil could easily crumble through the repeated footsteps of humans or a dislodged rock from above sliding down the hill. In this way, then, we can see that villages were not placed on marginal lands, but land was made marginal through their occupation. The adaptation of slaves was not so much to a foreign environment, but to a set of conditions that made the land foreign. Houses became very similar, while at the same time, a broad distinction between elite and subordinate housing emerged. The amount of land attached

to these houses diminished, while at the same time becoming more regulated. What they did with marginal spaces, however, was quite extraordinary.

In the years between 1763 and 1834, enslaved laborers would most likely have unusual stories about weather and the land upon which they made a living. Between 1763 and 1834, Dominicans lived through seventeen years in which hurricanes impacted their lives. Storm cycles were most intense in the years between 1764 and 1787, and between 1817 and 1834.[82] The most substantial single loss of life was on August 14, 1788, when over 500 were killed after the island experienced three hurricanes. In 1806, within days of each other—on September 9, and again on September 20—450 and 165 individuals were killed in two separate hurricanes. On October 21, 1817, a combined total of about 250 persons were killed. On September 20, 1834, just after the declaration of emancipation was read out in market squares, more than 200 people were killed during a storm, and countless more in its aftermath.[83] We have to imagine the new challenges faced by slaves who had once had their farms in the area surrounding their houses. After the sugar revolution transformed their landscape, their sources of food were, for the most part, in grounds located several miles from where they lived, and difficult to access during a hurricane. Hurricanes, such as the devastating hurricane in 1788, would uproot plantain and banana trees and destroy maize crops. While failure to harvest root crops from waterlogged soils might cause them to rot, tubers such as cassava, taro, and yam were secure against the devastating impacts of high winds. Such hurricanes would also endanger the village with landslides.

Enslaved people likely tried to maximize the cash revenue, so that those who could not grow enough food to feed their families/households could purchase additional foodstuffs in markets. Wild pigs, feral dogs, and untethered goats, which were voracious opportunists, made this difficult as "improving" the land meant woodland habitats grew smaller and more distant. Strong fences were required to keep such animals out of the household gardens.

Denizens made choices about which plants to grow to take care of their environment. Many excavated houses contained seeds of guava (*Psidium guajava* L.). These observations, coupled with contemporary accounts, suggest that this fruit was popular among most residents in Dominica.[84] A small tree with a wide, short canopy and a sturdy single- to multi-stemmed trunk, guava is part of the myrtle family and is indigenous to central America. While no evidence of guava seeds has been recovered from pre-colonial sites in the region, it is likely that the trees were already in Dominica when Europeans arrived. Growing guava from seed may not produce fruit for up to eight years, but once established they fruit

for up to forty years. With plenty of sun, they do very well in well-drained soil, such as in Soufriere.

While many of the guava trees in the gardens of slaves could have grown through accidental placement, certainly some of those seeds were planted and cared for. In addition to eating the ripe fruit in and of itself, people could preserve and commercialize it by making jellies, jams, or cheeses.[85] The relatively high ubiquity but generally low numbers of seeds in all the habitation areas sampled at Morne Patate may suggest that processing of fruits was a common occurrence. Fruit trees were an important part of any garden or provision ground, preventing stubborn weeds by shading them out. The roots also provided protection from soil erosion by holding the soil to its roots and spreading a leafy canopy to reduce the impact of wind and rain. Fruit trees would have been an important fix to the soil erosion that accompanied deforestation and sugar agriculture.

These trees anchored the fertile topsoil of gardens and grounds in the subsoil. Such a strategy was crucial in Portsmouth and Soufriere, where the nature of the subsoil made the area prone to landslides after deforestation. For example, while passion fruit, another popular fruit, was eaten or made into drinks, its cultivation had beneficial effects.[86] The climbing vines of passion fruit species often thrive in the living fence materials of fruit trees and shrubs around fields and gardens, providing an additional source of food. We recovered one seed in the provision ground, suggesting that the fruit and vines were used by people to feed themselves and secure the land. Okra (*Abelmoschus esculentus* Moench) is another seemingly important West African crop that became a staple of provision grounds throughout the Americas once it was introduced.[87] In Dominica, okra was a widely cultivated crop, and it was incorporated into all kinds of soups and stews, where "leaves were cooked like spinach; and . . . buds were cut, processed, dried, or boiled, and served in a variety of dishes."[88] When not eaten fresh, in much of West Africa the processing of okra involves sun-drying the sliced okra pods, which are then ground and used when needed.[89] Unharvested leaves of the viney plants enriched the soil with nutrients that other plants needed.

The wide variety of woody and herbaceous plants grown together in a dense pattern confused European observers, prompting them to consider cultivation strategies of enslaved laborers as inefficient, wasteful, and untidy. On the contrary, this strategy of cultivation is highly efficient.[90] Beans and tubers have different nutrient requirements, and trees are useful in drawing nutrient-rich matter from considerable depths from decaying leaves that drop onto the ground.[91] The spacing of species away from each other through intercropping also protects against disease. Finally, intercropping aids in stabilizing soils. Duncan McGregor

has shown how the use of such a multistory system provides a sustainable engagement with the land, especially in the aftermath of land degradation.[92] The local knowledge that McGregor observed was one that developed in the steep slopes and forested land on which enslaved laborers made their living. The assemblage of botanical remains shows that enslaved laborers paid careful attention to how the plants would improve the soil, despite forces that might make it more difficult to grow food. Enslaved laborers could not count on planters to provide their "ration" in times of crisis.

A drought was as much a risk to food security as a hurricane, though its frequency and impact were poorly documented in the late eighteenth and early nineteenth centuries. Soufriere is located on the leeward side of Dominica, which is generally characterized by higher evaporation rates and more drought-tolerant vegetation. Provision grounds were located on steep slopes with poor access to roads and very limited irrigation potential, and few had access to year-round, gravity-fed irrigation, which aqueducts afforded sugar plantations. Cultivation was planned around the rainy season between October and February, as well as a smaller precipitation peak in May. New food crops came into use after the sugar revolution. The enslaved probably experimented with growing millet in areas unsuitable for other crops; both millet and sorghum were grown on other, more arid Caribbean islands.[93] This West African crop is an important staple of sub-Saharan Africa, where it performs well in arid regions, where limited or erratic rainfall makes maize and sorghum yields less reliable. Another important West African cereal, sorghum, is a valuable grain in that it has relatively high yields and is less sensitive than maize to hot and dry conditions.[94] Throughout the Caribbean and the Southeast US, sorghum is documented as having previously been a common crop in provision grounds. In some cases, sorghum was also grown as fallow for sugar fields and was harvested as a primary source of food for the enslaved workers. This suggests that in earlier periods, sorghum may have been widely favored, a familiar crop from Africa that became incorporated into plantation and provision ground agriculture due to its high yields and tolerance of aridity.[95]

This last point requires some elaboration. In Dominica, where precipitation cycles varied widely, the use of such drought-tolerant crops would have been vital to both newly arrived Africans and Creole enslaved workers alike.[96] Because there is no archaeological or textual evidence that such grains were grown in Dominica previous to 1763, it is likely that millet and sorghum cultivation began only after enslaved Africans began to arrive. This means that Creole slaves living through the transformation of the landscape may have lost familiarity with the plant or not had the requisite seed stock with which to experiment. Newly

arrived slaves would have had the requisite knowledge, and perhaps seed stock, to grow sorghum and millet. Under what conditions to plant seeds, when to harvest grain, and how best to protect it from a harsh sun would have all been skills with which people living on marginalized land would have to contend. By considering the materiality of plants, we also have to consider the agency of newly arrived Africans in villages such as Morne Patate's.

This botanical evidence suggests that there was some forethought, consideration, and care that went into planting a garden and tending provision grounds. People who worked were not just labor. By this account, it would be all too easy to valorize such activities and overlook some of the deleterious effects of shifting cultivation and over-exploitation. Rather, the "contextual local knowledge and practice" accounted for long-term consequences. A signal of the health of forests and woodlands are species that are vulnerable to overhunting and changes in habitat. The giant ditch frog, or crapeaux, described in chapters 1 and 4, is one such species. As amphibians they are fairly susceptible to changes in climate and because of their size (13 cm in length) are readily visible to predators. As "sit and wait" predators, they lie motionless for long periods, consuming whatever they can swallow. They predominantly eat crickets and beetles, but also land crabs, small frogs, lizards, and, very occasionally, small birds and mammals.[97] They are unusual in that they breed on land in burrows and require seasonal rain to survive. They are also susceptible to predation by humans and feral mammals. On neighboring islands, ditch frogs were subject to overhunting and habitat loss to the point they ceased to be part of the dietary record by the late nineteenth century.[98] The archaeological record highlights that enslaved laborers ate the giant ditch frog in some quantity in Dominica. Despite this, the species persisted with little danger well into the twentieth century. Only after tourism and disease in the 1990s was the ditch frog threatened.

This is not to say that enslaved workers were ecologically neutral. They had a different set of priorities with which they encountered the land and its resources. These priorities were informed by the problems created by others, which they then had to negotiate. They also held different assumptions about who belonged to a community and what membership meant in terms of rights and responsibilities. Assemblages of care, therefore, become a material question with implications for everyday life.

The Hydrosocial Houseyard

Water assemblages can illuminate increased water insecurity. Water on Dominica that might have been more freely available from nearby wells or cisterns became increasing precious and risky. Vessels circulating through peripheral flows acted as a medium linking disparate settlements where laborers lived. Vessels did not just reflect culture; they created the very categories upon which it was premised. Hydrosocial dimensions of the houseyard allow us to track relationships in the houseyard. Different relationships emerged with cool water; some had access to it, and some did not. These different relationships were a medium in colonial slave society for cultural politics—the struggles over meaning at the level of daily life.[99]

Archaeological materials reflect hierarchies of power and privilege, in this case, indexing differences in the amount of stored water available to owners versus enslaved.[100] In contexts where idioms of property shaped relations of land and labor, the transfer of water could be tied to competition and profit. When people filled or had someone fill goglets, glass bottles, or gourds, the vessels changed the ownership status of the water. The substance was no longer corporate, since no one else could use that water unless they had the pottery owner's permission. Vessels that made water private helped reproduce some of the predicaments of slavery. Here, vessels are part of a "naturalizing and sustaining subaltern difference that serves as a legitimizing discourse."[101] Differences were created in relationships of a house's inhabitants with water. Importantly, some of these differences worked against the grain of dominant narratives.

People crafted water in both Soufriere and Portsmouth.[102] For example, at Morne Patate, excavated botanical evidence from houseyards suggests that enslaved laborers employed additive methods to craft beverages, including brewed coffee and tea made with fennel.[103] Most likely, other teas and infusions were used, but the biased nature of the archaeological record limits our ability to document the variations. There was also evidence that people employed methods to remove elements from the water, through filtration or sedimentation. Owners of Crabier and Morne Patate employed filtration methods illustrated by dripstones found in close proximity to the estate houses. Estate owners appear to have employed filtration at Bois Cotlette, storing household water in five Biot jars encased in a masonry wall behind the estate house. The residents of the estate house at Sugarloaf also appear to have relied on sedimentation, employing a repurposed drip jar similar to the large local jars depicted in Bellisario's painting "Water-jar Sellers."

Enslaved laborers living in the villages of Soufriere and Portsmouth appear to have relied on large jars to clarify water through sedimentation. Residents of the village at Sugarloaf relied principally on repurposed drip jars to store and clarify water. Denizens of Bois Cotlette's village relied on a combination of Biot jars and repurposed drip jars to store water. This difference indicates that enslaved laborers relied on different means and commodity networks to obtain their water objects. There were crucial similarities as well. It is difficult to establish from archaeological materials alone how many vessels these sherds represent for a variety of reasons, including deposition patterns (where people disposed of refuse), sampling strategies (where archaeologists decide to excavate), and recovery methods (how people decide to excavate). Using broken sherds from a rim, we can provide an estimate of the minimum number of vessels in each houseyard that was excavated. At Bois Cotlette and Sugarloaf, residents of one or more houseyards may have employed the same large jar (Biot or drip jar) to store water–suggesting that this was a communal source.

People used goglets to craft cool water in Portsmouth and Soufriere. As with estimating the number of Biot and drip jars, estimating the number of these smaller jars presents methodological challenges. That said, house areas that contained the greatest density of goglet vessels were those occupied by plantation owners in Soufriere. At Bois Cotlette, a minimum of three vessels were recovered from a trash midden associated with the estate house. Eleven minimum vessels were documented across a village that contained eighty-six people on average. The residents of the estate house at Sugarloaf and the enslaved laborers living in its village used far fewer goglets. In archaeological testing of an area comparable in size to Bois Cotlette, only one minimum vessel was documented.[104]

Clearly jars with the ability to cool water were valuable to people who used them. A 1770 indenture contracting a marriage between Joseph Bellot and Theresa de la Ferrier Constance lists two "water pots" as part of Bois Cotlette's valuable effects.[105] Since the effects documented in the probate would have been when the household contained three people—Louise and Adrian de La Ferrier Constance, in addition to Theresa—the document implies that not everyone in the household had access to the contents of the water jars. This calculus seems to have extended into the slave village. Goglets and water bottles held roughly equivalent amounts of water. Glass was the most represented waterway object of each context's assemblage. This is hardly surprising, as glass bottles were used to store many liquids, including water, and were relatively inexpensive compared to regionally made goglets. Goglets were found in each of the house areas, but in lower quantities than glass bottles. Sampling and excavation strategies always

trouble our ability to establish correlations, but the relative density of glass bottles and ceramic goglets at houseyards excavated at Bois Cotlette and Sugarloaf allows us to infer there might have been far fewer goglets than necessary to support enslaved households.

Crafting People

Just as objects were used to craft types of water, they also crafted people. The observed record of the hydrosocial houseyard has two implications. How people crafted water was informed by the peripheral flows that made slave colonies work. Biot jars that clarified water and goglets that cooled it were more part of the waterways of the French-oriented Bois Cotlette than of the English-oriented Sugarloaf. Here, culture is a not a thing or a shared set of values. It is an assemblage of ideas materialized through the work of people encountering the predicaments that emerged from new economic and social orders. The second implication refers to the number of people who might have had access to water from the goglets. To apprehend why there might have been far fewer goglets than necessary to support all the residents in the houseyard, we have to consider its materiality. Porous goglets transform the quality of water, adding coolness. For example, highlighting the importance of coolness, Belisario (see chapter 2) seems most concerned with coolness. Belisario commented that most newcomers were "greatly surprised at the quantity of water drunk by natives [Creoles of African and/or European descent]" until their "thirst" got the better of them. While Belisario, for example, claimed that water jars would not be "presentable at the sideboards of the respectable families," there was a "decided preference" for their water, which was "rendered much cooler from the free admission of air" due to their "porous nature."[106] Water cools in these vessels because the pores in the earthenware accelerate interaction between air and water. The importance of the quality of coolness "was new to strangers to the Caribbean but one for which they soon grew a taste."[107]

Cool water plays an important role in the symbolic systems that manage the health of Dominicans today. Some rural Dominicans employ a humoral medical system that conforms to many such systems in the French Antilles.[108] Drinking water plays a curative role in balancing cold/hot humors and cleansing pollutants. Foreign substances, like dirt, can pollute the blood, causing inflammation. Dominicans believe cool water from a stream or pitcher balances humors and cleans dirt, reducing inflammations.[109] Smoke from fires used to clear brush, cook food, and distill bay rum is also seen as a source of polluting dirt that can lead to inflammation. Other sources include dust associated with agriculture in

the dry season and the airborne particulate of Roseau and Portsmouth. While it is unknown whether Caribbean dwellers in the eighteenth century believed cool water to have curative properties, coolness was an important quality of water then. Jonathan Troup described how one enslaved woman, Penny, enjoyed cool water.[110] He also documented the use of cold water by itself or with remedies for gas, hangovers, nausea, small pox, and virility.[111] Cool water was not a cure-all, however. Troup notes that a carpenter he hosted in August, after heavy rains, suffered diarrhea after imbibing cold water with his dinner.[112]

Because goglets held about one liter of water, they would have required constant refilling over the course of the day. For landowners, this was not a problem. In 1903, Lafcadio Hearn observed "the thick red earthen vessels which keep your drinking-water cool on the hottest days, but which are always filled thrice between sunrise and sunset with clear water from the mountain.'"[113] The only sources of cool water available to slaves at Bois Cotlette and Sugarloaf were one of two freshwater springs in Soufriere or rivers in Portsmouth. In Soufriere, accessing this water meant transgressing property boundaries, walking several miles, and climbing fifteen- to twenty-degree slopes. No doubt water carriers made several such trips a day, but not everyone had access to the product of their labor. Near Portsmouth there are many rivers with cool water. The clarity of that water can be quite variable. During the rainy season, many of those rivers become filled with sediment as eroded soils and fallen plant debris are churned up in fast-moving water.

Oral histories provide evidence for the limited use of goglets in all households. According to one of my interlocutors, one or two such pots were set on a sideboard near where people would eat. The water in them was cool and sweet, and served to elders and guests. As a child, my interlocutor was never allowed to drink this water. As an adult caretaker at a wealthy Englishman's property, he was rarely granted access to the vessel's contents. A century earlier, Hearn described the role of "Bonne" in Martinique: "She is the confidential messenger, the nurse, the chamber-maid, the water-carrier, everything, in short, except cook and washer-woman."[114] Hearn draws parallels to slavery in his discussion of the intimate workings of wealthy households. While considered a member of the family, Bonne did not enjoy the benefits of its membership, including access to water stored in the case à eau.

It is difficult to interpret these gradations in Dominica's slave villages. As I have suggested, membership in households in the villages where enslaved laborers lived is notoriously tricky to define. The residents of slave dwellings were not always related, nor did they necessarily consider themselves family. Some could

be kin, such as Granny Smith. Other kinds of relationships could also exist, such as reciprocal forms of exchange that defined the interaction between slaves and maroons. Certainly, holding a profession such as a carpenter, nurse, or boiler meant that one enjoyed material and social benefits. At the same time, multiple hierarchies could exist simultaneously on a plantation. Healers, charismatic leaders, or specialists were recognized by denizens and reflected a social organization not documented by Europeans. Gradations of age and rituals of hospitality were important dimensions establishing who drank cool water and under what conditions they could do so. To care for someone or something with water, it first had to be crafted. In crafting that water, however, a person was also crafted.[115]

There is indirect evidence that some enslaved laborers had differential access to crafted water. Many maladies associated with slave life could have also resulted from water scarcity brought about by the sugar revolution. Aside from the discomfort, dehydration can lead to complications including heat stroke, swelling on the brain, seizures, low blood volume, shock, kidney failure, and even death. Caribbean physicians, including Troup, often diagnosed slaves with either dropsy (edema) or *mal d'etomach*. Planters and physicians believed that "dirt eating," or pica, which sometimes accompanied the bundle of symptoms, was the ultimate cause of the disease. In fact, the symptoms associated with *mal d'etomach* were the result of beriberi.[116] In 1817, Parliament instituted the triennial slave register as a way to monitor illegal trade in human beings. At Sugarloaf, whose manager was meticulous in detailing the causes of death, twenty-seven slaves died and seven individuals were sold. Causes of death listed include age (four), scrofula (one), consumption (three), injury (one), flux (three), rupture (two), paralectic (one), worms (six) and *mal d'etomach* (six). Eighteen of the twenty-seven deaths could be attributed to diseases in which water is a vector or its scarcity is a cause. Of those eighteen, all were new to the island.

While the above statistics suggest a relation, they are anecdotal at best. The observation of maladies causing death was uneven in its application and accuracy across the board. For example, in the same year enslaved laborers died at both Bois Cotlette and Morne Patate; causes were not listed. What the statistics do suggest is that water was part of the relations of care. Archaeologists have highlighted how such calculus forged or reinforced domestic networks and mitigated the embodied consequences of enslavement.[117] We know from other contexts that "enslaved nurses drew from a range of wild, tended and domestic plant and animal resources to care for their patients."[118] Certainly, the enslaved might have sought respite in hospitals, but from documentary evidence and Troup's own account, they were places of last resort. For Troup, treating someone was

a function of his profession, for which he received remuneration. For others in Dominica, it was also an act of care for one's community to ensure "belonging and regeneration." It is likely that the enslaved would have initially relied on domestic networks located in the houseyards of villages.

Administering to the sick in the houseyard was a communal act with political consequences. Water was crafted by ritual or medicinal specialists to harm, protect, or heal people. Belgian artist Pierre Jaques Benoit visited Suriname around 1831 and published pictures from his visit.[119] One painting illustrates a calabash and an "Indian Pot" of a "Water-Mama": a woman called on for physical and spiritual interventions including herbal decoctions and ritual acts. Describing the ritual, he states she "poured water from the pot into the calabash and then made the Negress drink. She made her drink again and then gave her herbs to be administered to her child. All finished, we departed, and I left my offering in the sibyl's hands. Tankie, masra (thank you, master), she responded to me."[120] While this performance should be understood within the specific context of Suriname and its particular ecological and social context, similar types of specialists operated in Dominica. The 1788 "Act for the better regulation and protection of slaves" punished "Obeah or Doctor Men" with death for administering certain drugs or potions generally of a poisonous" nature.[121] Nurses, among others, would have had access to such knowledge and been agents in political mobilization.[122] While it is likely that some beverages were decocted by enslaved laborers for sinister purposes, it is also likely that such beverages played a vital role in communities of care. Common medicines such as bush tea or rum infused with medicinal herbs could be cause for prosecution.[123]

Cool water was not enumerated in such texts, but it was no less present. Anthropologists have argued that when more than one person holds rights over the same objects, such as water, the circulation of objects is very different from the circulation of private property. Weiner refers to this process as "keeping while giving" and these types of objects as "inalienable possessions." Inalienable possessions are "symbolic repositories of genealogies and historical events, their unique, subjective identity gives them absolute value placing them above the exchangeability of one thing or another."[124] Exchanged objects materialize the social identity of the actors that are vested in them, preserve lineage ties, and reproduce the specific cultural characteristics of the larger group. So, while filling a goglet, glass bottle, or gourd changed the ownership status of the water, sharing that water changed the nature of the relationship. The substance was no longer individuating, since crafting water to heal or reunite was a communal act. Acts that made water communal helped resolve some of the predicaments of slavery.

Features documented and vessels recovered from houseyards in Portsmouth and Soufriere index different types of water, including murky, clear, holy, and cool. We can use the qualities of water encoded in these objects to envision how experiences varied for peoples who stood in different relations to objects that stored and transformed water. Rain fell in Soufriere and was collected in ponds or cisterns. Water could be diverted from roofs into Biot jars near the estate house. Goglets were filled and placed in galleries to be cooled during the day and served to elite occupants. While cisterns and distant springs were possible sources of water, few, if any, slaves would have had regular access to their contents, exacerbating social hierarchies. Instead, rainwater, rotting detritus, and sediment would collect in strategically placed ponds across Soufriere. Children would travel back and forth from those ponds to collect water in buckets and fill jars near slave houses. From jars, cooking pots were filled. Individuals might fill a smaller vessel made from plants, ceramic, or glass. A few people would have had access to water from goglets. The remainder relied on glass bottles, gourds, and calabashes.[125] Matter like water held in calabashes and goglets entangled long sequences of social events involving manufacture, gifting, administering care, ownership, and final disposal. It was the sequence that individuated or entangled people in relations of care. In crafting water, people and their relationship with each other were also crafted.

Conclusion

Scholars who have interrogated slave life have argued that it is intellectually shortsighted to ignore differences between slaveholder ideology and the everyday lives of people categorized as slaves. Dominica's sugar revolution marked the intensification of exclusionary relations of markets, regulation, force, and legitimation. These relations were assembled in the socioecological form of the sugar plantation. On these plantations, enslaved people racialized as Black lived in denser settlements and struggled in fields devoted to monocultural output for higher capital gain for owners. Concomitant with this emerging, socioecological form was a transformation of the landscape that impacted the availability of water for those living under the condition of slavery. Waterways were not free of charge.

Peripheral flows shaped the everyday uses of water that resolved some of these predicaments. Attaching waterways to these flows has two implications. Costs of resolving the competition of production and reproduction were unevenly borne by the slaves. Objects used to resolve challenges, brought through enslavement and intensified by the sugar revolution, were paid for by the unaccounted labor

of the enslaved. Acquisition, distribution, and use of water assemblages also transmitted and reinforced long-held structures of feeling surrounding water and its uses. Beyond containing types of water that composed people's waterways, the objects crafted water. Qualities (foul, clear, cool, and holy) imparted by containers (ponds, jars, goglets, and calabashes) to water shaped their position with each other. Changes include differences in status, as water was transferred from communal sources (ponds, cisterns, storage jars) to personal containers (goglets, calabashes, and glass bottles). Inflected with race, gender, and status, the vessels were part of the politics of belonging and social regeneration that framed everyday life for enslaved laborers.

Epilogue

Presenting Predicaments

> The case of Dominica is altogether an exceptional one. It is, I believe, one of the very richest islands in possession of the Crown in the West Indies in the natural productiveness of the soil; at the same time, it is an island in which practically nothing has been done, and to this day the very best Crown land in the island, amounting to about 100,000 acres, is absolutely unproductive.
>
> —Joseph Chamberlain, 1896

This book has shown how enslaved laborers engaged in everyday forms of resilience as they negotiated the slow and fast violence wrought by the plantation and its global interdependencies.[1] It is an all-too-predictable irony that 133 years after William Young planned the administration of Dominica, British Colonial Secretary Joseph Chamberlain addressed Parliament with the words above. Much of Dominica's history has been one in which nature was viewed as abundant, though utterly useless without the ability of labor and markets to catalyze that latency into capital. Laborers are portrayed as having little control over land use and thus being particularly ineffective stewards of the land and authors of their own poverty. Missing from this account are the predicaments faced by laborers making a living on lands they did not own, in a stratified society in which they were exploited. Political, economic, and environmental forces differentially impacted the lives and livelihoods of Dominicans of Indigenous and/or African descent in the years after the legal abolition of slavery. Also left out are the everyday acts of conservation and reorganization that enabled them to live. The resilient solutions they crafted might continue to be useful as people encounter new predicaments today.

In Dominica, people solved problems not of their own making. People legally defined as property were purchased to perform agricultural work in eighteenth-century Dominica. And while plantation labor was not the only experience of people categorized as slaves, and enslaved people were not the only ones affected by this transformation, they were the ones who were most directly

responsible for implementing the plans of English-speaking elites. Security, mobility, and belonging presented challenges in the everyday lives of enslaved workers. Water, as a political, economic, and cultural matter, maps these predicaments and how the enslaved resolved them.

These problems did not begin with the sugar revolution, but they intensified after agents of empire argued that Dominica and its resources should be put to new purposes. Humans have been shaping Dominica for nearly five thousand years. Water was an important part of this story. It was a resource that had to be accounted for as farmers moved onto an island where, in some places, agriculture is entirely rainfall dependent. There were hydrosocial aspects to water, whereby ideas were shared and alliances forged. It was also a cultural substance with meanings, hard to recover, attached to its use. While sugar cane was not entirely new to the island in 1763, the intensity of activities undertaken to cultivate it and the geographic spread of these endeavors were. Before then, the labor and crops of enslaved workers supplied people who claimed ownership over them with profits from the sale of food to neighboring islands. There was flexibility to the choices they made about what crops to grow and where—flexibility that modulated changes in the environment, including political alliances, market demands, and the weather. This flexibility, however, was read by colonizing narratives as a poor utilization of the Nature Island.

In 1763, colonizing narratives viewed Nature's Island as an open frontier with a latent abundance that could be realized only through the work of slavery and markets. Agents of empire did not anticipate, however, the degree to which sugar would be adopted across the island. Factories and fields sprang up in places where these agents thought they should, as well as in places they thought they shouldn't. According to the standing and ruined buildings that dot the landscape, the process was dramatic. Within two decades, eighty-seven new sugar estates were built, and some 18,000 people were added to the population of the island. Land and its resources became scarce, making workers more vulnerable to changes in weather, precipitation cycles, and the vagaries of commerce. Scarcity here is not a prior condition, but something that emerged from discourses surrounding abundance. It is no surprise, then, that cheap goods used to store liquid become increasingly popular as parts of domestic assemblages only after Dominica's sugar revolution.

Observing these processes, land-holding residents grew increasingly disillusioned, fearing a future in which maroons and enslaved workers would conspire to dislodge them from the island. Where I stress scarcity, observers stressed the governor's, and his functionaries', inability to cope with the American Revolution

as the inflection point that changed their world. It interrupted commerce and the supply of the colony. It is important to take such arguments seriously, as they were formative in the experiences of the enslaved. Of course, such accounts are written from a particular stance filled with blind spots. Nonetheless, they point to questions to ask of the archaeological record. Objects recovered from the villages where enslaved laborers lived found their way there through illicit and sometimes illegal means. These objects speak not only to an unexpected economy in which workers interacted face to face with maroons and Kalinago, but also to increasingly shared idioms between people who lived on islands that owed allegiance to different sovereigns. Despite fears of poorly scrutinized alliances and attempts to maintain financial integrity to the island's economy, the mobility of slaves was needed to make slavery and plantations work. Though not within the scope of this book, I feel it is important to gesture that predicaments of security, mobility, and belonging did not just end with slavery.

Slow violence is intergenerational, as resolutions to predicaments create new problems. This study of agricultural intensification on the Nature Island anticipates the continuity of problems that a largely landless majority were still forced to resolve after effective emancipation in 1838.[2] In Dominica, markets for botanical commodities, new and old, created conditions in which small holders and planters alike would replace one crop with another (lime with sugar and cocoa with coffee), or plant new crops altogether, such as bananas.[3] By and large, people who were the children of enslaved workers, or who were once enslaved themselves, could not accumulate in ways that plantation owners and white settlers with enough cash could. Low wages, along with laws stipulating the minimum amount of land that could be purchased, regulated who got what land.[4] Wage workers continued to feel the squeeze. Force also played an exclusionary role. After familiar attempts to take away the political franchise the 1831 "Brown Privilege Bill" had conferred to people of color, violence erupted at the courthouse and the marines were summoned to quell the unrest.[5]

Discourses that legitimized some priorities over others continued to create problems that others were forced to solve. In the 1880s and 1890s, a spate of bushfires led some to complain that once-rich agricultural lands were now "barren wastes of rock," when the fertile "soil left burned and bare" was "washed to the valley or sea."[6] Dr. Nichols, one of the observers introduced in chapter 2, complained, "year after year, during the dry season, planters . . . suffered great losses by fires set by their neighbors."[7] The "neighbors" in this account are not other members of the planter class. Rather, they are people who were once enslaved, or the children of people who were once enslaved, who continued to be racialized

as Black. Provision strategies seem to be mostly portrayed by reference to pathology—a people living close to subsistence and next to disaster, who overtax the soil through unstable agricultural practices. Nichols would go on to argue that burning would rob the soils of "nitrifying microbes."[8]

With an eye to "modernize the island" and secure what was perceived to be an increasingly tenuous relationship between colony and metropole, Henry Hesketh Bell, Dominica's newly appointed governor, encouraged white settlement, funded experiments with new crops, and facilitated the banana industry. In 1900, Bell remarked "that a great majority of colored people speak nothing but patois." He went on to state, "it is sometimes difficult to realize that one is in a colony which has been British for more than 120 years."[9] To redress these perceived concerns, Bell encouraged whites to emigrate from Britain and even suggested that Boer prisoners be resettled in Dominica as part of a plan to whiten the island. He also lobbied for a Carib reserve, which the government established in 1903. Creation of this territory was foundational to interpretations of "authentic" and indigenous Caribbean history.[10]

What emerged in the wake of these efforts were new settlement patterns creating new predicaments. Crown-lands on the narrow band of coastline became the sites of new villages where landless, largely black Dominicans made new lives and livelihoods. Some continued to work as wage laborers on estates. Others became fishers. Still others found new opportunities as they continued to work the spaces between estates, experimenting with new crops for new markets and cultivating old ones that continued to be staples. Yet for the million problems faced, there were a million solutions.

This book is as much about the way we confront contemporary predicaments of water and soil as about those forged in the wake of the sugar revolution. Extreme weather events, changing precipitation, and sea-level rise have made those living in the global north more mindful of the vulnerability of lives and livelihoods in a time of climate change. "Resilience" has been popularized in policy statements written to confront these challenges. But what lesson does the mapping of water in eighteenth-century Dominica hold for contemporary policy on resilience? We can take note of how contemporary social relations shape our interpretations of the archaeological record.[11] We can also recast our focus on how the experience of those caught up in circumstances beyond their control shaped the archaeological record.[12] This record, then, addresses present-day concerns about "human rights, the environment, and socio-economic development," and provides an important set of data about everyday forms of resilience.[13]

Everyday life has gotten more difficult for many of the Dominican colleagues with whom I started this project. Increasingly intense weather associated with climate change has become part of the predicaments they have to negotiate on a daily basis. In September 2017, Dominica was ravaged by Hurricane Maria. While hurricanes are not a new threat to the region, the magnitude of the storm—in the wake of Tropical Storm Erika in 2016, from which the island was still in recovery—resulted in historic devastation. As has been widely reported in the media, the hurricane devastated the island nation's infrastructure, housing stock, and economic base, and the government sought assistance from governmental, nongovernmental, and private organizations for the long process of recovery. On some islands, such as St. Croix, sustainable archaeology projects were in place to immediately assess the short-and long-term damage.[14] For my small part, I went to Dominica in April 2018 to assist in whatever small way I could.

High winds, floods, landslides, and recovery efforts have deflated, exposed, or endangered important archaeological and historic sites, many of which have been central to Dominica's tourist industry. My specific goal in 2018 was to assist the government in assessing the storm's impact on these resources. We identified, documented, and described known and unknown archaeological sites as one step in recuperating the heritage infrastructure of the island. The other goal was less academic. I wanted to track down colleagues and friends with whom I could not talk via WhatsApp or Facebook.

I heard how environmental devastation impacted everyday life. In the days after the storm, water was so scarce that in some cases people would drink water straight from the open drains that line the roadways in the small coastal villages. I had also heard how NGOs used these communities as an opportunity to promote themselves through their good efforts, creating a predicament of abundance. I was told many stories of relief agencies providing items that would be of little use at the time they were delivered. The port was crammed with containers holding items that might have been useful but also might not have been appropriate for the conditions at hand. I witnessed the damage to houses and housing stock. Many of the coastal villages settled in the years immediately after emancipation were the ones hardest hit by the storm. Damage varied from a few missing roofs to villages completely buried by the loose, gravelly soils exposed over the years due to aggregate mining for concrete. The aggregate was used for roads and buildings, erected by Dominican and foreign capital in the form of hospitality companies and overseas aid organizations.

The day I was leaving on that first trip after Maria, optimism struck as I drove past a garden high above the village of Massacre and saw shoots of dasheen begin

to poke through the soil. That provision grounds still provided security in the aftermath of environmental devastation suggested the importance of solutions of the past. In the weeks, months, and years after Maria, resilience became a common phrase and a call to action. But as I hope this book has shown, there is a social history and archaeology to resilience. For centuries, people living on Caribbean islands, particularly those who are most economically and politically vulnerable, have been at the forefront of solving climate problems, including agricultural precarity, water resource management, and forced migration. Despite the harsh conditions of slavery, enslaved laborers in regimented plantation villages carved out new spaces where they could lead rich social lives with networks extending to other communities on Dominica and beyond, including Kalinago and maroon. Through these ties, they cultivated a set of ecological priorities that helped solve problems not of their own making.

NOTES

Foreword

1. See Mintz, *Sweetness and Power*, for the classic Caribbean account of this process.
2. See Haraway, "Anthropocene."
3. See Brown, *The Reaper's Garden*.
4. See Trouillot, *Peasants and Capital*.
5. McNeill and Engelke, The Great Acceleration.

Introduction

1. In this book I rely heavily on Vincent Brown's discussion of predicament and slavery in *The Reaper's Garden*.
2. Scarborough, *The Flow of Power*.
3. See Rasmussen, *Andean Waterways*; and Swyngedouw, "Modernity and Hybridity."
4. Mintz, *Sweetness and Power*.
5. I draw considerable inspiration from Saidiya Hartman's *Scenes of Subjection* and her discussion of social death. See also Nixon, *Slow Violence*. Violence is more thoroughly discussed in chapter 3.
6. For scholars examining the relationship between capitalism and the environment, see Haraway, *Staying*; Moore, "The Capitalocene"; and Tsing, "On Nonscalability." For scholars looking at slavery and governance in colonial settings see Brown, *The Reaper's Garden*; Bryant, *Rivers of Gold*; Dawdy, *Building the Devil's Empire*; Delle, *The Colonial Caribbean*; Higman, *Montpelier*; and Singleton, *Slavery Behind the Wall*.
7. Fanon, *The Wretched of the Earth*; McKittrick, "Plantation Futures"; Wynter, "Novel and History"; Haraway, *Staying*, f5.
8. This phrase is borrowed from Tsing, *The Mushroom*, 3.
9. Wynter, "Novel and History."
10. I borrow this formulation from Elizabeth DeLoughrey's "Yam, Roots, and Rot."
11. Fanon, *The Wretched of the Earth*.
12. Wynter, "Novel and History," 99.
13. My use of alternative geography is indebted to McKittrick, "Plantation Futures." Tsing, "A Threat," 54.

Chapter 1

1. Hamilton, *Scotland*, 117.

2. McDonald, "Sex, Power, and Slavery."

3. Slave Voyages: The Trans-Atlantic Slave Trade Database. According to the Trans-Atlantic Slave Trade Database, 300 Africans in the hold of the vessel embarked at Gambia. Of the 278 that disembarked in Dominica, 174 were men, 98 were women, and 16 were children.

4. See S. Campbell, "Africans to Dominica." See Slave Voyages: The Trans-Atlantic Slave Trade Database. According to the database, by the year 1779, 50 percent of all human beings had been transported to the Americas.

5. A. Smith, *An Inquiry*.

6. Carretta, *Phillis Wheatley*.

7. Sensu A. Agrawal's "Environmentality," 16. Everyone who stood in relation to land and its resources was what he would call an environmental subject, that is, someone for whom the environment "constitutes a critical domain of thought and action," where ecological priorities are part of matrices of power.

8. Evans and Rydén, *Baltic Iron*.

9. Antczak, Antczak, and Antczak, "Risky Business."

10. Mrozowski, Hayes, and Hancock, "Archaeology of Sylvester Manor."

11. Cranstone, "From Slitting Mill to Alloy Steel."

12. For review, see Scheid, "Political Economy of Ceramic Production."

13. Finley and Shaw, *Ancient Slavery*.

14. J. Miller, *Problem of Slavery*.

15. J. Handler and Lange, *Plantation Slavery in Barbados*.

16. Orser, *An Archaeology*.

17. Patterson, *Slavery and Social Death*, 3. Patterson defines slavery as "one of the most extreme forms of the relation of domination, approaching the limits of total power from the viewpoint of the master, and of total powerlessness from the viewpoint of the slave."

18. Cameron, "Captives and Culture Change."

19. Battle-Baptiste, "Sweepin' Spirits," 88, 92; Wilkie, "Culture Bought"; Fennell, "Group Identity"; Ferguson, *Uncommon Ground*.

20. Sayers, *Desolate Place*; Hauser, *Archaeology of Black Markets*; T Weik, "Archaeology of Maroon Societies in the Americas"; TM Weik, *Archaeology of Anti-Slavery Resistance*.

21. Pearson, *Archaeology of Death and Burial*.

22. Harrod and Martin, "Bioarchaeological Case Studies of Slavery"; Blakey "Bioarchaeology"; S. Agrawal "Biomorphologies."

23. Blouet, "Interpretations of Burial and Commemoration."

24. D. Armstrong and Fleischman, "House-Yard Burials"; Corruccini et al., "Osteology of a Slave Burial"; Courtaud et al., "Le Site D'anse Sainte-Marguerite "; Schroeder, Haviser, and Price, "The Zoutsteeg Three"; Watters, "Mortuary Patterns."

25. Brown, "Social Death," 1249.

26. Brown, "Social Death."
27. Beckles, "An Economic Life of Their Own"; Mintz, *Caribbean Transformations*.
28. Tomich, "Une Petite Guineé."
29. W. K. Marshall, "Provision Ground and Plantation Labour."
30. Brown, "Social Death," 1249.
31. Brown, *Reaper's Garden*, 59, 10.
32. Hauser and Hicks, "Colonialism and Landscape," 267.
33. I am referring here to the work of critical geographers such as Kenneth Olwig and Don Mitchell. See Mitchell, "New Axioms"; Olwig, "Recovering." See also Richard, *Reluctant Landscapes*, 19.
34. Brown, *Reaper's Garden*.
35. Williams, "Structures of Feeling," 129.
36. Burnard, *Mastery, Tyranny, and Desire*.
37. Morrison and Hauser, "Risky Business."
38. J. Handler and Wallman, "Production Activities in the Household Economies."
39. Tomich, "Une Petite Guineé," 89.
40. There is a large body of scholarship on these systems beginning with Mintz and Hall, *Origins of the Jamaican Internal Marketing System*, 57. For a review, see Hauser, *Archaeology of Black Markets*.
41. Delle, *Colonial Caribbean*.
42. DuTertre, *Histoire Générale*, 3, 515.
43. Moitt, *Women*, 55.
44. Debien, *Les Esclaves*, 184.
45. Debien, "La Nourriture," 14.
46. Gibson, "Domestic Economy"; Wallman, Kelly, and Berard, "Slave Community Food Ways."
47. Hauser and Kelly, "Colonies."
48. Sheridan, "Domestic Economy."
49. Mulcahy, *Hurricanes*, 80.
50. Mr. Grove to Mr. Leslie, 19 May 1789 BNA: CO 71/8
51. Governor Orde to Sydney, 19 May 1789 BNA: CO 71/8
52. Orde to the Privy Council, BNA: BT 6/41, 205–11
53. *Papers Presented to the House of Commons*, 19.
54. Cracknell, *Dominica*, 33. Grains including sorghum, maize, and rice were cultivated by enslaved laborers in Martinique, Jamaica, Hispaniola, and Surinam. Carney, *Black Rice*.
55. Parliament, *Papers Presented to the House of Commons*, 19.
56. Parliament, *Report of the Lords of the Committee,* no 10.
57. UA, MS 2070, Journal of Jonathan Troup, 26.
58. UA, MS 2070, Journal of Jonathan Troup, 75v.
59. UA, MS 2070, Journal of Jonathan Troup, 122v.
60. UA, MS 2070, Journal of Jonathan Troup, 92.
61. UA, MS 2070, Journal of Jonathan Troup, 66.

62. UA, MS 2070, Journal of Jonathan Troup, 131.

63. UA, MS 2070, Journal of Jonathan Troup, 155.

64. UA, MS 2070, Journal of Jonathan Troup, 168v.

65. UA, MS 2070, Journal of Jonathan Troup, 122v.

66. M. Franklin, "The Archaeological Dimensions of Soul Food"; Wallman, Kelly, and Berard, "Slave Community Food Ways"; Yentsch, *Chesapeake Family*.

67. UA, MS 2070, Journal of Jonathan Troup, 108.

68. UA, MS 2070, Journal of Jonathan Troup, 108.

69. UA, MS 2070, Journal of Jonathan Troup, 108.

70. See Morrison and Hauser, "Risky Business." The phrase is borrowed from Ó Gráda, "The Ripple that Drowns?"

71. Wolf and Mintz, "Haciendas and Plantations." In 1957, Wolf and Mintz note that Canamelar "was characterized by a large modern 'factory in the field.'"

72. Robbins and Marks, "Assemblage Geographies."

73. Moore, "Capitalocene."

74. T. Mitchell, *Rule of Experts*, 51.

75. Li, *Lands End*, 17.

76. Haraway, *Companion Species Manifesto*, 1.

77. Nordin, "Metals of Metabolism."

78. Ingold, "One World"; Deleuze and Guattari, *A Thousand Plateaus*.

79. Bauer and Bhan, *Climate without Nature*, 4.

80. Haraway, *Staying*, f5.

81. Haraway, *Staying*, 206.

82. Tsing, "A Threat," 54.

83. De León, *Land of Open Graves*; Dawdy, "Taphonomy of Disaster"; Schiffer, *Formation Processes*.

84. For a review of this work, see Honychurch, *Archaeology in Dominica*.

85. K. Bakker, "The 'Commons'"; Rasmussen, *Andean Waterways*.

86. Rasmussen, *Andean Waterways*, 5.

87. Hauser, *Archaeology*.

88. Kelly et al., "Compositional Analysis."

89. Trouillot, *Peasants and Capital*, 27–32.

90. I borrow this phrase from Li, "Beyond 'the state.'"

91. For the most recent review of this work see Ryzewski, "Thorny Endeavor."

92. D. Armstrong and Fleischman, "House–Yard Burials."

93. Pattullo, *Your Time Is Done Now*.

94. Bell, "Report"; McKusick, "Aboriginal Canoes"; Ober, *Camps in the Caribbees*; Rennard, "Les Caraïbes"; Taylor, "Caribs"; Taylor, "Tales and Legends."

95. Berard, "'South-Dominica' Archaeological Mission"; Boomert, "Searching"; Honychurch, *Archaeology of Dominica*; S Lenik, "Carib as a Colonial Category"; Shearn, "Pre-Columbian Settlement."

96. J. Boromé, *Aspects*.

97. Pérotin-Dumon, *La Ville Aux Iles*.
98. Honychurch, *Dominica Story*.
99. Ingram, *Manuscripts*.
100. Black, *Archival Development*.
101. Ford and Ford, *A Guide*.
102. Higman, "Sugar Revolution."
103. Welch, "Synthesis."
104. Trouillot, *Peasants and Capital*.
105. Watts, *West Indies*, 8.
106. Girault, "Recherches De Géographie," 70; Richardson, *Caribbean*; Wood, *Trinidad in Transition*, 101.
107. Dunn, *Sugar and Slaves*, 53.
108. For a functional definition, see Orser, "On Plantations and Patterns"; Orser, "Archaeological Approaches."
109. Mintz, "Houses and Yards," 10.

Chapter 2

1. Priestley, *Directions for Impregnating Water*, 310–11.
2. Schwalbe, "Landscapes of Movement," 3.
3. For the concept "indigenous frontier," see Li, *Land's End*.
4. For "First Nature," see Cronon, *Nature's Metropolis*.
5. Shearn, "Pre-Columbian Settlement."
6. Schubert and Szabo, "Uranium-Series Ages."
7. Rochefort, *History of the Caribby Islands*, 277.
8. Berard, "'South-Dominica' Archaeological Mission."
9. Wadge, "Morne Patates."
10. Nijland and El Guindi, "Crop Yields."
11. A. Armstrong, "Effect of Drainage."
12. Rudd and Chardon, "Effects."
13. Cooper and Peros, "Archaeology of Climate Change"; Hofmann and Hoogland, "Beautiful Tropical Islands."
14. Keegan, "Lucayan Settlement Patterns," 5.
15. Toscano and Macintyre, "Corrected Western Atlantic."
16. Wilson, Iceland, and Hester, "Preceramic Connections."
17. Cooper, "Climatic Context."
18. Rouse, *Migrations in Prehistory*.
19. Napolitano et al., "Reevaluating Human Colonization." Trinidad contains the earliest site, occupied ca. 5950 BCE, when the island was most likely attached to the South American mainland, (Tankersley et al., "Geochronology"). Charcoal, believed to be the result from anthropogenic fires, was recovered from lake core sediment and

places early occupation of the island ca. 3650 BCE (Siegel et al., "Paleoenvironmental Evidence"). Barbados also contains an early site occupied sometime between 3280 and 2940 BCE (Fitzpatrick, "Verification").

20. Callaghan, "Ceramic Age Seafairing." Archaeologists have criticized this later model for its overreliance on models with a series of assumptions about past behavior, and failure to explain early dates in the Eastern Caribbean—see Ross et al., "Faces Divulge."

21. Siegel et al., "Paleoenvironmental Evidence."

22. Pantoja, García, and Díaz, "El Fenómeno."

23. Curet et al., "Evidence of Major Flooding."

24. Cooper, "Fail to Prepare."

25. Samson et al., "Resilience."

26. Petitjean Roget, "Notes."

27. Arrom, "Creation Myths."

28. Oliver, "Proto-Taino," 251.

29. Traditionally, they have viewed continuities and discontinuities through the lens of migration. Here, archaeologists view technological innovations, social and political changes, and shifts in worldview as the result of the influx of new peoples or "cultures" (Rouse, *Migrations in Prehistory*). Similarities and differences in decorative inventories, shapes of vessels, and foodways equated to changes in the population who used them. Take the term "Saladoid." According to scholars emphasizing migration, these pottery-producing people replaced an Indigenous group of people who relied heavily on maritime foodstuffs and are known by a material culture assemblage that includes spearpoints fashioned from bone, animal teeth worn as jewelry, and stone tools used as net weights, grinding stones, and choppers (Keegan and Hofman, *Caribbean*; D. Davis, "Archaic settlement"). They were replaced by a second wave of pottery-producing migrants (Troumasoid) who left the Orinoco basin and colonized the Lesser Antilles between 600 CE and 1200 CE (Bright, *Blood Is Thicker*). Potters on these densely occupied islands began to produce ceramics following similar recipes of manufacture and repertoires of design, but with detectable localizations in technique and style (Hofman et al., "Island Rhythms," 253).

30. Wilson, *Archaeology of the Caribbean*, 175

31. Bright, *Blood Is Thicker*, 110.

32. Boomert, "The Cayo complex." This evidence relies on one of the ingredients potters added to the matrix of the clay to ensure more successful firing. This is the burned bark of the South American 'kwepi' tree (Sp. *licania*). This tree, while indigenous to South America, is not found in the Windward Islands.

33. Raleigh, *Sir Walter Ralegh's Discoverie*, 326–27.

34. Boomert, "Cayo Complex," 12.

35. Hofman et al., "Island Rhythms."

36. Anonymous, *An Answer*; Douglas et al., *A Letter*; B Franklin and Jackson, *Interest*; Jefferys, *West Indies*; Jefferys, *Natural and Civil History*.

37. Breton, *Dictionnaire Caraïbe-Français*. There is a 1666 companion volume, *Dictionaire Francois-Caraibe*.

38. See Hulme, *Remnants of Conquest*, 45–46.

39. Breton, *Dictionnaire Caraïbe-Français*.

40. Breton, *Dictionnaire Caraïbe-Français*, 292.

41. Laffoon et al., "Long-Distance Exchange"; Ramos, *Rethinking*; Ramos, Pagán-Jiménez, and Hofman, "The Humanization."

42. Hofman et al., "Stage of Encounters."

43. Boomert, "Amerindian–European Encounters." In 1593, one Spanish official complained that Amerindians in Trinidad were bartering with French and English privateers—providing tobacco, among other things, for knives and trinkets.

44. J. Handler, "Aspects of Amerindian Ethnography."

45. Hulme, "Meditation on Yellow."

46. Breton, *Dictionnaire Caraïbe-Français*, 191.

47. Oliver, *Caciques*.

48. Petitjean Roget, "Les Petroglyphes." See also Groom, "Rock Art Management."

49. Petitjean Roget, "Notes," 105.

50. Cited in Hofman and Hoogland, "Beautiful Tropical Islands," 112.

51. Hofman and Hoogland, "Beautiful Tropical Islands," 109.

52. Scarborough and Lucero, "Non-Hierarchical Development."

53. Wittfogel, *Oriental Despotisim*, 12.

54. Swyngedouw, "Modernity and hybridity"; Brite, "Hydrosocial Empire."

55. Boelens et al., *Hydrosocial Territories*.

56. Brite, "Hydrosocial Empire," 124.

57. Brite, "Hydrosocial Empire," 125. See also Ingold, "Toward an Ecology."

58. Here I paraphrase Edgeworth, *Fluid Pasts*, 19.

59. Deetz, *In Small Things Forgotten*.

60. Harrower, *Water Histories*.

61. Lucero and Fash, *Precolumbian Water*; Scarborough, *Flow of Power*.

62. Morehart and Morell-Hart, "Beyond the Ecofact."

63. Scarborough, *Flow of Power*, 117.

64. Morehart, "Mapping Ancient Chinampa."

65. Mintz, *Sweetness and Power*.

66. Morrison, "Archaeologies of Flow"; Bauer and Morrison, "Water Management."

67. McIntosh, *Ancient Middle Niger*.

68. Carney, *Black Rice*, 57.

69. Rostain, *Islands*.

70. Rostain, "Agricultural Earthworks."

71. McKey et al., "Pre-Columbian Agricultural Landscapes."

72. Pagán-Jiménez, "Human-Plant Dynamics."

73. Broodbank, *Making*, chap. 2; Knappett, Evans, and Rivers, "Modelling Maritime Interaction"; Stahl, "Colonial Entanglements."

74. Hofman et al., "Island Rhythms."

75. See Broodbank's discussion of the Mediterranean as an assemblage of winds and currents, topography, biota, and landmasses that is neither deterministic in human history nor is unimportant in its unfolding (*Making*, chap. 2).

76. Mrozowski, "Colonization."
77. Chouin and Lasisi, "Crisis and Transformation."
78. Law, "Slave-Raiders," 222–24.
79. Law, "Slave-Raiders," 213–17.
80. Edgeworth, *Fluid Pasts*, 96.
81. Labat, *Nouveau Voyage*, v.
82. Taylor, *Caribs*, 141–42
83. Murphy, "Creole Archipelago," 33, fig. 32; Labat, *Memoirs*, 140–42; Labat, *Nouveau Voyage*, 100, 122.
84. Murphy, "Creole Archipelago," 33, fig. 32; Rochmonteix, *Le Père*, 77.
85. Mintz, *Sweetness and Power*, 185–86.
86. Robin, *Everyday Life Matters*.
87. Zedeno, "Animating by Association."
88. Zedeno, "Animating by Association," 408.
89. Escobar, "After Nature," 6.
90. Stedman, *Narrative*, 457, 655.
91. For an alternative explanation, see Espenshade, "A River of Doubt."
92. Joseph, "'. . . All of Cross.'"
93. Nicholls, *Report on Yaws*, 73.
94. Nicholls, *Report on Yaws*, 73.
95. Lennox Honychurch, personal communication, September 27, 2018.
96. Nicholls, *Report on Yaws*, 40.
97. *Slavery Images: A Visual Record*
98. Mills, "Communities."
99. Mills, "Communities," 249.
100. Roth, *Tea drinking*, 225, 73.
101. Quinlan, "From the Bush," 76.
102. Quinlan, "From the Bush," 114.
103. Ranston, *Belisario*, 262.
104. Ranston, *Belisario*, 262.
105. Arcangeli, "For Water, Food, Tables and Health," 190–200.
106. Ranston, *Belisario*, 264.
107. J. Handler, "Diseases."
108. Nickolls, *Letter*, 17.
109. Atwood, *History*, 257.
110. Coleman, "Dripstones."
111. Sloane, *Voyage*, x.
112. Victor, *La Poterie*.
113. Allsopp, *Dictionary*, 260.
114. Smaller vessels were also circulating. The monkey jar, characterized by a spout, handle and lid, is similar to a vessel called le krish, made by contemporary potters in St. Lucia (see Vérin, "Quelques Aspects," 467). Michael Scott uses one of the first

appearances of the term in English to describe this porous earthenware: "the Monkey of cool water" See, M Scott, *Tom Cringle's log*.

115. J Fryer, *A new account*, 47. See Oxford English Dictionary.

116. A Vieyra, *A Dictionary*, 1.

117. See Bueze for an example of colonial ceramics L-R Bueze, "La Potterie." and Carraze for an example of old world antecedents, F Carrazé, *Kantis*.

118. In the more recent past, some communities produced ceramics so well known for their relative evaporative qualities that their wares were sought after in global economies. Tonalá bruñida ware, made in Jalisco, Mexico, became particularly valued in Europe for its ability to cool water and make it sweet to the taste (see Voss, "Status and Ceramics").

119. Cook and Bakker, "Water Security."

Chapter 3

1. In reference to the epigraph that opens this chapter, when sugar cane was ripe, enslaved workers cut it by hand with curved knives called cane bills and loaded the stalks onto oxcarts. In 1745, the Reverend William Smith commented, "During crop time they work night and day almost incessantly" (*A Natural History of Nevis*, 232). Quicklime was produced by the crushing and burning of coral and shell, found in the reefs near the island shore.

2. Nicholson, *Dictionary*, 22.

3. Mintz, *Sweetness and Power*.

4. Moore, "Sugar and the expansion."

5. For a review of this debate, see Logan, *Scarcity Slot*, 22.

6. For a review, see Cook and Bakker, "Water security."

7. Brown, *Reaper's Garden*; Burnard, *Mastery, Tyranny, and Desire*; Dubois, *Avengers*.

8. Nixon, *Slow Violence*, 2.

9. Here I draw on Hall, Hirsch, and Li, "Introduction to Powers of Exclusion."

10. Breton, *Father Raymond Breton's Observations*, 1.

11. Hulme and Whitehead, *Wild Majesty*, 81–82.

12. Hulme, *Colonial Encounters*, 246.

13. Atwood, *History of the Island of Dominica.*, 221.

14. Hauser and Armstrong, "The Archaeology of Not Being Governed."

15. Murphy and Hauser, "Dominica as an Evolving Landscape."

16. S. T. Lenik, "*Frontier Landscapes*"; Murphy and Hauser, "Dominica as an Evolving Landscape."

17. Hauser, "The Infrastructure."

18. DNA Grants, Leases and Conveyances B N. 1 #40. Units were recorded as three quarrés and two quarrés, respectively. This French unit of measure varies significantly, but in eighteenth-century Antilles it was approximately equal to 3.2 acres.

19. Murphy and Hauser, "Dominica as an Evolving Landscape."

20. See S. T. Lenik, "*Frontier Landscapes*"; Murphy and Hauser, "Dominica as an Evolving Landscape."

21. J. Boromé, "The French and Dominica."

22. ANOM DPPC, G1/498, Recensement de l'Isle de La Dominique de Année 1730; ANOM DPPC, G1/498, Recensement de l'Isle de La Dominique de Année 1731; ANOM, DPPC, G1/498, Dénombrement General de l'Isle de La Dominque; Susiant Les Quartrers . . . 1743; ANOM, DPPC, G1/498, Dénombrement L'Isle Dominique pour l'année 1745; ANOM, DPPC, G1/498, Récapitulation Générale de L'isle Dominque pour l'année 1749; DPPC, Recensement Général de l'Isle de La Dominique 1753. Joseph Borome notes that there is an error in the 1753 Recensement related to coffee production, see Borome, *Aspects*, 97.

23. See Murphy and Hauser "Dominica as an Evolving Landscape," 35 ANOM DPPC, État Civil, Le Prêcheur, July 29, 1821.

24. A farina house is a structure where the tuber is grated, soaked, and drained. The subsequent matter is ground and baked on cast iron pans to create a stable flour. This flour could then be used in a porridge or made into a hearty bread. This process borrowed from the centuries-old method developed by Indigenous peoples throughout the Caribbean Basin. It increased the capacity of the technique by employing slave labor and regimenting the process.

25. Murphy and Hauser, "Dominica as an Evolving Landscape."

26. "Agriculture et économie rustique – Sucrerie et affinage des sucres" (Diderot, *Encyclopédie ou Dictionnaire*).

27. Hall, "Land Grabs," 839. For English treatise on husbandry, see Ligon, *True and Exact History*; Robertson, *Supplement to the Detection*; Hughes, *Natural History of Barbados*; Belgrove and Drax, *Treatise Upon Husbandry*.

28. Tarlow, *Archaeology of Improvement*, 12.

29. Tarlow, *Archaeology of Improvement*, 87.

30. I rely on Kalyani Menon's definition of dissonant subjects as those who transgress norms of a social movement ("Dissonant subjects").

31. Tarlow, *Archaeology of Improvement*, 81.

32. Bryant, *Rivers of Gold*, 7.

33. Bryant, *Rivers of Gold*, 32.

34. Bryant, *Rivers of Gold*, 29.

35. Brewer, *Sinews of Power*.

36. Young, *Considerations*.

37. Anderson, *Crucible of War*.

38. Hall, "Land Grabs."

39. Honychurch, *Dominica Story*.

40. Murdoch, "Land Policy."

41. Pensom, *Colonial Agents*.

42. A. Johnson, "Passage," 507.

43. Brewer, *Sinews of Power*.

44. Byres, "Plan of the Island"; Byres, *References to the Plan*.

45. Young, *Considerations*, 19.
46. Young, *Considerations*, 16.
47. Murdoch, "Land Policy," 556.
48. Anonymous, *North-American and the West-Indian Gazetteer*, 87.
49. Murdoch, "Land Policy."
50. Young, *Considerations*, 37.
51. Young, *Considerations*, 39.
52. This island, in Young's estimation, was comparable in geography and potential to St. Vincent and Dominica. Young argued that Grenada's "soil produces a sugar of most excellent quality. It is well watered with rivulets and abounds with good provision grounds for the negroes, which save a considerable expense to the planters in their maintenance." A fourth potential of the island was the presence of a well-forested and mountainous interior. This, he argues, is "on the whole an advantage, not a defect; for although there are some objections too great an inequality in their surface, and to large tracts of wood, yet as they contribute to insure rains and fertility, and to produce rivers, they are very beneficial in these climates" (*Considerations*, 31).
53. Young, *Considerations*, 32.
54. Young, *Considerations*, 32.
55. Young, *Considerations*, 36.
56. Young, *Considerations*, 43.
57. Young, *Considerations*, 43.
58. Young, *Considerations*, 47–48.
59. Young, *Considerations*, 43.
60. Young, *Considerations*, 47–48.
61. Murphy, "Creole Archipelago."
62. Sivaramakrishnan, *Modern Forests*, 35.
63. ANOM DPPC, G1/498, Recensement de la Colonie pour la population et la culture de Année 1785.
64. DPPC, Recensement Général de L'isle De La Dominique 1753; Parliament, *Papers Presented to the House of Commons*, 119.
65. Baker, *Centering the Periphery*.
66. "Returns of Produce given in under General Tax Bill 1827" *Dominica Almanac and Register*.
67. Parliament, *Papers Relating to Her Majesty's Colonial Possessions*, 52, 144.
68. Morris, *Report*, 122–23.
69. Hall, "Land Grabs," 840.
70. Higman, "Sugar Revolution," 229.
71. For examples, see D. Armstrong, *Old Village and the Great House*; Clement, "Settlement Patterning"; Delle, *Archaeology of Social Space*; Hicks, *"Garden of the World"*; Meniketti, *Sugar Cane Capitalism*; Ryzewski and Cherry, "Struggles of a Sugar Society."
72. Delle, "Power and Landscape"; Singleton, *Slavery behind the Wall*.
73. Cossin and Hauser, "Sugar Economics."
74. Singleton, *Slavery behind the Wall*.

75. Delle, *Archaeology of Social Space*.

76. Morrison, "Rethinking Intensification," 236.

77. For review, see Bolender, "From Surplus Land to Surplus Production."

78. Meniketti, *Sugar Cane Capitalism*.

79. Higman, *Slave Populations*.

80. J. Handler, "Plantation Slave Settlements"; Higman, *Jamaica Surveyed*.

81. As a cost-saving measure, planters soon began to use "coppers" made of iron. Marco Meniketti used the number of coppers as a proxy for the volume of sugar produced ("Sugar Mills," 60). Therefore, a boiling house that had three coppers produced less sugar and molasses than a seven-copper boiling house (Meniketti, "Sugar Mills," 75).

82. Atwood, *History of the Island of Dominica*, 284.

83. Niddrie, "Eighteenth-Century Settlement," 72.

84. Edgeworth, *Fluid Pasts*, 109.

85. I borrow this term from Edelson, *Plantation Enterprise*, 24.

86. Kosiba and Hunter, "Fields of Conflict," 40.

87. Wells et al., "Agroindustrial Soilscapes."

88. Ellis, *Historical Account of Coffee*, 42.

89. Ellis, *Historical Account of Coffee*, 25–26.

90. Young, *Considerations*, 32.

91. Moreton, *West India Customs*, 44.

92. Moreton, *West India Customs*, 44.

93. Edwards, *History of the British Colonies*, 221.

94. Colthurst, *Colthurst Journal*.

95. Salisbury, "Engaging with Soil," 25.

96. Salisbury, "Engaging with Soil," 27.

97. Salisbury, "Engaging with Soil," 27.

98. Atwood, *History of the Island of Dominica*., 81.

99. Atwood, *History of the Island of Dominica*., 80.

100. Jefferys, *The Natural and Civil History*, 80.

101. Jefferys, *The Natural and Civil History*, 83.

102. Jefferys, *The Natural and Civil History*, 83.

103. Atwood, *History of the Island of Dominica*, 95.

104. Atwood, *History of the Island of Dominica*, 95.

105. BNA CO 71/10. Letter, 17 April 1786, Alex Stewart and Thomas Beech to the King.

106. Hauser, "Everyday Economies and Ecologies."

107. As Kathleen Morrison argues, to use measures "of what we presume to be the consequence of intensification," such as complexity, population, or productivity, is an example of confirmation bias ("Rethinking Intensification," 237).

108. D. Armstrong and Kelly, "Settlement Patterns."

109. Higman, *Montpelier*.

110. See Miller et al., "Telling Time"; for a detailed analysis of methodology, see Chenoweth and Farahani, "Color."

111. See Kelly, "La Vie Quotidience"; Walthall, "Faience"; Waselkov and Walthall, "Faience Styles."

112. See Bates, Galle, and Neiman, "Building."

113. Miller, "Revised."

114. Wilkie and Farnsworth, *Sampling*.

115. Honychurch, "Slave Valleys."

116. Benoît, *Corps, Jardins, Mémoires*.

117. Debien, *Les Esclaves*; J. Handler, "Plantation Slave"; Higman, *Jamaica Surveyed*.

118. See Hauser, "Political Ecology."

119. T. Davis, *Agricultural Water Use*. A study documenting water usage in the Niger and Chad basins found that one hectare of sugar cane required 55,000 m^3 of water, as opposed to rice (31,000 m^3), wheat (21,000 m^3), and vegetables (18,000 m^3).

120. Browne and Blouin, *Chemistry of the Sugar*, 276.

121. Porter, *Nature*, 252.

122. DNA Grants, Leases and Conveyances E.N. 1 1775, f. 258.

123. Saunders and Warford, *Village Water Supply*.

124. Higman, *Slave Populations*, 385.

125. Higman, *Slave Populations*, 68.

126. *Papers Presented to the House of Commons*, 19.

127. These equations estimate a single individual's daily requirement is somewhat variable and is dependent on size, diet, daily exertion, and climate. Estimates for individual daily requirements range from two liters per capita per day to five liters per capita per day. See Saunders and Warford, *Village Water Supply*; Vivanti, "Origins."

128. Deerr, *Sugar*.

129. Colthurst, *Colthurst Journal*, 245–47.

130. Colthurst, *Colthurst Journal*, 251.

131. J. Handler, "Plantation," 135.

132. Watts, *West Indies*, 8, 196.

133. Galle, "Costly Signaling."

134. Debien, *Les Esclaves*, 232.

135. Hauser, "Political Ecology," table 2.

136. BNA CO 71/10. Letter, 17 April 1786, Alex Stewart and Thomas Beech to the King.

Chapter 4

1. Riviere, "Bittersweet Childhoods," 43.

2. K. Bakker, "The 'commons.'"

3. Dunaway, *Gendered Commodity Chains*.

4. Peterson, "Rewriting (Global) Political Economy," 14.

5. Tabak and Crichlow, *Informalization*.

6. Dawdy, *Building the Devil's Empire*. Shannon Dawdy describes the relationship between New Orleans and the metropole as an example of "rogue colonialism": the entanglement of factions including agents, criminals, and low-status individuals, whose interests traditionally would compete in the metropole, and who rely on diverse economic networks to ensure the colony's success. Importantly, it was New Orleans' multiple trade networks that materialized "the Mississippi-Caribbean World" (102). Smuggling and piracy were so ubiquitous that the city became "a de facto port of free trade" (224).

7. Stoler and Cooper, "Between Metropole and Colony."

8. VanValkenburgh and Osborne, "Home Turf."

9. M. Smith, "Networks," 846.

10. A. T. Smith, *Political Landscape*, 22.

11. Edelson, *New Map of Empire*.

12. Pedley, "Map Wars."

13. Harley, "Bankruptcy of Thomas Jefferys."

14. Young, *Considerations*, 8.

15. Cain and Hopkins, "Gentlemanly Capitalism."

16. Greene, *Peripheries and Center*.

17. Tarrade, *Le Commerce*, 12.

18. Clément, "English and French Mercantilist Thought," 304.

19. Butel, *Histoire*, 51.

20. Goebel, "'New England Trade,'" 332.

21. Goebel, "'New England Trade,'" 343.

22. Tomich, *Slavery*, 160; Pérotin-Dumon, *La Ville Aux Iles*.

23. Pérotin-Dumon, "Cabotage," 66.

24. Clapham, "Last Years."

25. Pitman, *Development*, 221.

26. Sheridan, "Molasses Act," 63.

27. Sheridan, "Molasses Act," 64.

28. "Acts of the Assembly Passed in the Island of Barbadoes," 303. Cited in Sheridan, "Molasses Act," 68.

29. Pitman, *Development*, 228.

30. Sheridan, "Molasses Act," 69.

31. Sheridan, "Molasses Act."

32. Pitman, *Development*, 242.

33. I use Britain to designate metropolitan interests after the "Act of Union" in 1707.

34. Armytage, *Free Port System*, xx.

35. P. Thomas, "First Rockingham," 139.

36. B. Marshall, *Slavery*.

37. Hunt, "Contraband, Free Ports, and British Merchants." Chief among these was Prime Minister Charles Watson-Wentworth, Marquess of Rockingham.

38. Christelow, "Contraband Trade," 311.

39. Stein, *French Sugar*, 76.

40. BNA, CO 76/4–6. In some years, the contents of cargo, ship names, or the flags they carried were illegible. This alters our picture of trade and its change over time. All told, in these years I documented 2,808 arrivals carrying an estimated 430,000 tons of goods in the hold.

41. For example, a sloop could range anywhere between 12 and 50 tons, and a ship could range from 500 to 850 tons.

42. Sheridan, "Commercial and Financial Organization," 251.

43. BNA Shipping Returns, CO 76/4–8. Numbers are estimated based on itineraries documented with goods recorded in the hold.

44. A. T. Smith, *Political Landscape*, 10.

45. A. T. Smith, *Political Machine*.

46. Tagliacozzo, *Secret Trades*.

47. S. Campbell, "Africans to Dominica." Some of these laborers were transshipped to other Caribbean Ports in Louisiana, Cuba, and Martinique. See Kastor and Weil, *Empires*, 209.

48. Karras, "Caribbean Contraband."

49. Karras, "Caribbean Contraband," 251. See also Karas *Smuggling*, 8 for a discussion of contraband in Dominica.

50. Between 1807 and 1809, seventeen American and French vessels were captured along with their cargo as prizes. They carried a much broader array of goods, though in smaller quantities, intended to supplement diets, furnish households, build furniture, process cloth, and to adorn oneself. Neutral nations could provision islands in desperate need of goods by taking advantage of near-incessant warfare between France, Britain, and Spain.

51. Studies of smuggling in the region relying principally on the documentary record have focused on several themes, but are especially well represented in three important studies. On the British side, Francis forms the foundation of studies exploring "the colonial policy" and its afterlife in the late eighteenth century. See Armytage, *Free Port System*, xx. Lance Grahn has looked at smuggling as one of the linchpins of colonial economies in the Caribbean Basin (see *The Political Economy of Smuggling*). The agents of this trade form the focus of Linda Rupert's discussion of a more "bottom-up" perspective on the coastal trade that made the eighteenth-century Caribbean work (see *Creolization*).

52. Young 2nd, *Account*, 55.

53. Hofman et al., "Colonial Encounters."

54. Lafleur, *Les Caraïbes*, 235. Gérard Lafleur used baptismal, marriage, and burial records to document the presence of mixed communities populating the small inlets in and around Guadeloupe. For example, on the small island of Christophe in the Grand Cul-de-Sac Marin, a pastor baptized a "Carib" Magdeleine in 1749. She was the daughter

of Magdeleine, "Caraïbesse," and Nicholas, "Caraïbe" and her godparents were "Jean Pierre, a Negro of Mr. Bermingham," and "Magdeline, free mulattres." In 1756, a son of a petit blanc and a Kalinago woman, Jean-Baptiste Cheron, was baptized on la Désirade. In 1786, Thérésine, the daughter of two "carahibes" from nearby keys in Petit Cul-de-Sac, was buried in the Parish cemetery in Petit-Bourg in Guadeloupe.

55. Debien, *Les Esclaves*, 60.

56. Dubois, *Colony of Citizens*, 200; Pérotin-Dumon, *La Ville Aux Iles*, 49.

57. BNA, CO 71/23, Orde to Dundas, 13 June 1792.

58. BNA, T1 434/134.

59. BNA, CO 71/8, Mr. Grove to Mr. Leslie, 19 May 1784; BNA, BT 6/41, ff. 205–11, John Orde to the Board of Trade, 1 September 1787.

60. DNA, Acts of the Privy Council, March 1790 Minutes.

61. DNA, Acts of the Privy Council, March 1790 Minutes.

62. UA, MS 2070, Journal of Jonathan Troup, 132.

63. McCusker, "Money," 5–6.

64. *Oxford English Dictionary*, s.v. "Joe, N.1."

65. UA, MS 2070, Journal of Jonathan Troup, 107v.

66. Bush, "Slave Women."

67. Resident, *Sketches*, 243.

68. Hauser, *Archaeology*.

69. Bayley, *Four Years' Residence*, 61. According to his obituary, Bayley was a soldier who served in the Peninsular War and at Waterloo. In 1825, he was ordered to serve in Barbados, where he wrote the account from which the text was extracted. "Obituary," 324.

70. Abénon, *La Guadeloupe*; Pérotin-Dumon, "Commerce Et Travail"; Schnakenbourg, *Histoire*.

71. Klooster, *Illicit Riches*; Pérotin-Dumon, "Cabotage."

72. Honychurch, *In the Forests*.

73. Atwood, *History*, 226.

74. Pattullo, *Your Time Is Done Now*.

75. Pattullo, *Your Time Is Done Now*, 63.

76. Pattullo, *Your Time Is Done Now*, 90.

77. Pattullo, *Your Time Is Done Now*, 69.

78. Pattullo, *Your Time Is Done Now*, 92.

79. UA, MS 2070, Journal of Jonathan Troup, 65.

80. UA, MS 2070, Journal of Jonathan Troup, 66.

81. UA, MS 2070, Journal of Jonathan Troup, 119.

82. UA, MS 2070, Journal of Jonathan Troup, 122v.

83. Atwood, *History*, 261.

84. Young, 2nd, "A Tour through Several Islands" 267.

85. Price, "When Is a Calabash Not a Calabash?"

86. Price, "Always Something New," 21.

87. Breton, *Dictionnaire Caraïbe-Français*, 49, 261.

88. Hauser, "Political Ecology of Water."

89. Bain et al., "Landscape Transformation"; Oas and Hauser, "Political Ecology of Plantations."

90. G. Miller, "Marketing Ceramics in North America."

91. Losier, "Approvisionner Cayenne"; Avery et al., "French Faience"; Waselkov and Walthall, "Faience Styles."

92. G. Miller, "Revised Set of CC Index Values."

93. Wilkie, "Culture Bought."

94. Wilkie, "Culture Bought," 12.

95. Petrucci, "Les Poteries." Jean Ferdinand Petrucci, in a thesis completed in 1999, documented the history of pottery manufacturers in Vallauris By the mid-eighteenth century, an orange slip was introduced, and the potters made the vessels with a flatter rim and a straighter sides, though the base continued to be round (6–8). This form was followed by a straight-sided marmite with a red slip at the turn of the nineteenth century. The vessel was also made into small toys and saucepans (9–11). Importantly, what this means is that on an archaeological site occupied from the 1720s to the 1830s, connected to the peripheral flows of the eighteenth century, one would expect Vallauris pottery that is considerably varied in shape and decoration.

96. In Guadeloupe, Vallauris cooking pots were recovered from several sites in Basse-Terre. Heather Gibson documented over 5,500 sherds, making it the most numerous coarse earthenware. In Martinique, controlled excavations at Crève-Coeur also recovered a large quantity of Vallauris-type ceramics. Their distribution extends as far north as St. John, USVI (Hauser and Kelly, "Colonies without frontiers"). They have also been found as far south as Grenada (Hauser, Hofman, and Martin, *Report of Work Done*). .

97. Trendell, *Her Majesty's Colonies*, 367.

98. Ober, *Guide*, 361.

99. Taylor, "Caribs," 140.

100. "Debates in Parliament," 247.

101. Jeremie, "More Facts," 42. Pierre Vérin remarked of that community over 120 years later, "The 'Caribs' of La Pointe are probably to a certain extent, the descendants of Martinique Caribs who resettled St. Lucia in the 17th Century" ("Carib Survivals," 40).

102. Yvon and Cassagrande, "La Production."

103. R. Campbell, *London Tradesman*, 184, 272.

104. Chapelot, "Le raffinage"; Normand and Pauly, "Archéologie Et Raffinage"; Ravoire and Renel, "Note Sur Des Céramiques."

105. C. M. Brooks, "Aspects."

106. In 1787, the sloop Lydia arrived from Antigua carrying twenty-five feet of lumber, six kegs of nails, and one hundred "Sugar Drips." In 1801, the sloop Prince arrived from Martinique carrying one drip.

107. Hauser, "Routes and Roots"; Bloch and Bollwerk, "Sourcing Coarse Earthenware."

108. Stahl, "Colonial Entanglements," 840.

109. Inda and Rosaldo, "Tracking Global Flows," 25.

110. I. Bakker, "Social Reproduction."
111. Heath, "Yabbas."
112. Fennell, "Group Identity."
113. Ferguson, "'The Cross Is a Magic Sign.'"
114. Hauser and DeCorse, "Low-Fired Earthenwares." Time and evidence have led me to soften my position and see a third way to understand why these forms were so ubiquitous. Familiarity with the documentary record, ethnographic accounts, and personal experience have given me a chance to ask perhaps more nuanced questions.
115. Hauser, *Archaeology*.
116. Hauser, "Routes and Roots."
117. By 1750, a combination of town planning, including paved streets, stone and brick housing, and a number of local statutes related to drainage, rubbish removal, water provision, and new hospitals had shown a decreased death rate in England (Buer, *Health, Wealth and Population*). Naval and civilian physicians began to pay careful attention to hygiene and fresh potable water (Haines and Shlomowitz, "Explaining the Mortality Decline," 272).
118. Arcangeli, "For Water, Food, Tables and Health," 190–200.
119. Kiple, *Caribbean Slave*, 45.
120. Kiple, *Caribbean Slave*, 145.
121. J. Handler, "Diseases," 18–25.
122. J. Handler, "Diseases," 15.
123. Sloane, *Voyage*.
124. Labat, *Nouveau Voyage*, v, 330.
125. Arcangeli, "For Water, Food, Tables and Health," 484.
126. Losier, "Bouteilles Et flacons."
127. UA, MS 2070, Journal of Jonathan Troup, 95.
128. Coleman and Porter, "The So-Called 'Spanish Jars.'"
129. Victor, *La Poterie*, 31.
130. Amouric and Vallauri, *Biot, Jarres*, 65.
131. Arcangeli, "For Water, Food, Tables and Health," 213.
132. Kelly et al., "Compositional Analysis."
133. Arcangeli, "For Water, Food, Tables and Health," 203.
134. Brongniart, *Description Méthodique*, 1.
135. Arcangeli, "For Water, Food, Tables and Health," 231.
136. Hauser, "Political Ecology of Water."
137. GLC, GLC02542.32.15.
138. GLC, GLC02542.32.15, 2
139. GLC, GLC02542.32.15, 1
140. Anonymous, "West Indian News," 171.
141. Anonymous, "West Indian News," 259.
142. GLC, GLC02542.32.15, 1
143. Arcangeli, "For Water, Food, Tables and Health,"

Chapter 5

1. UA, MS 2070, Journal of Jonathan Troup, 50v.

2. UA, MS 2070, Journal of Jonathan Troup, 51.

3. In a personal communication to Jerome Handler, Steven Behrendt located an Old King George at Old Calabar in the Bight of Biafara, in present-day Nigeria. According to the Trans-Atlantic Slave Trade Database, between 1788 and 1789, nineteen voyages were made from the Bight of Biafra to Dominica. Of these seventeen vessels, six purchased slaves at Calabar, and three took on cargo slaves at New Calabar. Only one vessel makes a repeat stop to Dominica: the Ned, captained by John Spencer.

4. UA, MS 2070, Journal of Jonathan Troup, 51.

5. J. S. Handler, "Custom and Law."

6. Morris, *Southern Slavery*.

7. J. S. Handler, "Custom and Law."

8. Mintz and Price, *Birth of African American Culture*, 43.

9. *Oxford English Dictionary*, s.v. "Belonging, N."

10. Garraway, "Race."

11. Battle-Baptiste, *Black Feminist Archaeology*.

12. Beaudry, "Households beyond the House"; M Johnson, *English Houses*; Leone, *Archaeology of Liberty*; Loren, "Creating Social Distinction"; Voss, "Poor People."

13. See M Johnson, *Housing Culture*. He notes that during the fifteenth and sixteenth centuries in England, there was a process of "closure," involving new taxonomies of domestic space that coincided with a complex of cultural and social changes. Flexible interior spaces, typified by the medieval open hall, were increasingly segmented into rooms associated with particular charges. As an aesthetic predicated upon the enclosure of inside spaces, the house became a physical boundary from the outside, "natural" space.

14. Honychurch, "Chatoyer's Artist."

15. Kriz, *Slavery*, 53.

16. Kriz, *Slavery*, 38.

17. S. Thomas, "'On the spot.'"

18. Tobin, *Colonizing Nature*, 15. Sarah Thomas notes that like an ethnography, these paintings produce an account of colonial society. See Thomas, "On the Spot."

19. Tobin, *Colonizing Nature*, 17; See also Honychurch, "Chatoyer's Artist."

20. Tobin, *Colonizing Nature*, 12.

21. UA, MS 2070, Journal of Jonathan Troup, 160.

22. Kriz, *Slavery*.

23. Garraway, "Race."

24. de Saint, *Description Topographique*, 1. According to Doris Garraway, this classification was based on an earlier one established by Hilliard d'Auberteuil (see "Race," 239).

25. Garraway, "Race," 240.

26. UA, MS 2070, Journal of Jonathan Troup, 77v.

27. DNA, Triennial Slave Register, 1817, St. Mark's Parish.
28. UA, MS 2070, Journal of Jonathan Troup, 107v.
29. UA, MS 2070, Journal of Jonathan Troup, 107v.
30. Bush, "Slave Women."
31. UA, MS 2070, Journal of Jonathan Troup, 107v.
32. UA, MS 2070, Journal of Jonathan Troup, 107v.
33. M. Johnson, *English Houses*.
34. Green, "Evolution of Jamaican Architecture," 100.
35. Long, *History of Jamaica*, 2, 515.
36. Long, *History of Jamaica*, 2, 515.
37. Resident, *Sketches*, 71.
38. Resident, *Sketches*, 239.
39. Cossin and Hauser, "Sugar Economics."
40. Neave operated through his Roseau-based attorney, John Nelson. As a powerful London merchant, Neave was a director of the Hudson's Bay Company and the Chairman of the West India Merchants. In 1763, he joined the Bank of England, and between 1783 and 1785 was its governor (Clapham, *The Bank of England*, 197). His social and professional networks brought him in constant interaction with absentee planters, who held properties in St. Kitts, Nevis, and Antigua. Neave would have understood the social capital and prestige that accompanied owning a West Indian sugar estate, and purchasing an estate in Dominica was one such way for social advancement in London (Johnston, *Stapleton Sugar Plantations*, 199).
41. Debrett, *Baronetage of England*, 263.
42. Longin, *Voyage*, 43–44. Félix Longin (1787–1822) visited Guadeloupe between 1816 and 1822. His observations, eventually published in 1848, describe some of the masonry repertoires: "In Guadeloupe, people build with hard, greyish, rounded stones that are found in large quantities at certain places on the shoreline, or riverbeds. . . . These rocks, held by mortar made of volcanic sands and lime are very solid."
43. DNA Grants, Leases and Conveyances T N.2. In 1806, the same estate owner purchased a small house in St. Pierre for 10,000 livres, which matched the description of dwelling houses found on coffee estates, DPPC NOT MAR, Notary Landais, St. Pierre, 1806.
44. Pérotin-Dumon, *La Ville*, 426; Arcangeli, *Sherds of History*.
45. Resident, *Sketches*, 59.
46. Resident, *Sketches*, 59.
47. Resident, *Sketches*, 60.
48. Harris, "Morne Patate House Yards."
49. Mintz, *Caribbean Transformations*.
50. D. Armstrong, *Old Village*.
51. Harris, "Morne Patate House Yards."
52. Heath and Bennett, "'The Little Spots Allow'd Them,'" 38.
53. For a more detailed discussion of the botanical assemblage recovered from Morne Patate, see Oas and Hauser, "Political Ecology."
54. Wallman and Oas, "An Environmental Archaeology."

55. Resident, *Sketches*, 60.

56. Higman, *Slave Populations*, 369. The triennial slave register and other documents tended only to list the biological mother, meaning the biological father might be unnamed. This pattern is seen in the early years of the sugar revolution and is repeated in its waning years, after the beginning of the triennial slave register.

57. DNA, Trienneal Slave Register, 1817, St. Mark's Parish.

58. Murphy and Hauser, "Dominica as an Evolving Landscape," footnote 2.

59. Bates, Galle, and Neiman, "Building an Archaeological Chronology."

60. Samford, *Subfloor Pits*, 9.

61. Samford, *Subfloor Pits*, 141.

62. Resident, *Sketches*, 71.

63. Bates, "Surplus and Access." Bates found that land size and tenure of provision grounds had significant effects on status. While the areas for surplus production were poor relative to the cane fields, variation between estates in conditions and observable artifact attributes indicate the investment in ceramic vessels based on cost.

64. Young, 2nd, "A Tour through Several Islands" 172.

65. Resident, *Sketches*, 71.

66. Battle-Baptiste, "Sweepin' Spirits," 88, 92.

67. Brown, *Reaper's Garden*, 31.

68. Young, 2nd, "A Tour through Several Islands" 271.

69. Young, 2nd, "A Tour through Several Islands" 272.

70. Resident, *Sketches*, 71.

71. Young, 2nd, "A Tour through Several Islands" 271.

72. UA, MS 2070, Journal of Jonathan Troup, 114.

73. Wari, also called mankala, is a type of board game that shares attributes of accounting (Townshend, "African Mankala"). It is often played with a block of wood with cups or holes carved out of it. Pieces are advanced in order to capture all or some set of the opponent's pieces. In some cases, it can be played in holes dug or scooped out the earth JS Handler, "Gizzard Stones."

74. For two examples, see de Voogt, "The Comoros"; and Herskovits, "Wari."

75. Bates, Galle, and Neiman, "Building an Archaeological Chronology."

76. Young, 2nd, "A Tour through Several Islands" 71.

77. Young, 2nd, "A Tour through Several Islands" 248.

78. Young, 2nd, "A Tour through Several Islands" 72.

79. Young, 2nd, "A Tour through Several Islands" 62.

80. JC Scott, *Weapons*, 349.

81. McKittrick, "Plantation Futures"; See Li, "Beyond 'the state,'" 383, for "situated knowledge."

82. Benson and Clay, *Dominica*, app. 2.

83. *General Report*, 2, 359 (Letter from J. P. Lockhart to the Governor); Harris, "A Hard Kind of Freedom."

84. UA, MS 2070, Journal of Jonathan Troup, 66. See Oas and Hauser, "Political Ecology," 6; and Parry, "Plantation and Provision Ground."

85. Oas and Hauser, "Political Ecology," 6; Higman, *Jamaican Food*, 198.

86. Oas and Hauser, "Political Ecology," 7; Higman, *Jamaican Food*, 204.

87. Carney and Rosomoff, *In the Shadow*, 138.

88. Oas and Hauser, "Political Ecology," 7.

89. For a discussion in Jamaica, see Higman, *Jamaican Food*, 174–75.

90. Innis, "Efficiency."

91. Innis, "Efficiency," 21.

92. McGregor, "Investigation."

93. Carney, "Fields," 72–73.

94. Carney, "Fields," 72.

95. Higman, *Jamaican Food*, 229–32.

96. Chickens, cows, pigs, and other animals are represented in West Indian foodways, and they have a functional role as well. Feeding animals would be a way of converting excess maize from a garden into protein and dairy. Up until the 1830s, Jamaican slaves were hesitant about eating goat; rather, goats were kept for the "purpose of supplying milk" (see Higman, *Jamaican Food*, 391).

97. GR Brooks, "Analysis of Prey Consumed."

98. Wallman, "Negotiating the Plantation."

99. Escobar, "After Nature."

100. Reeves, "Archaeological Case Study."

101. Pezzarossi, "Camouflaging Consumption," 153.

102. For data pertaining to this discussion, see Hauser, "Political Ecology of Water," 239, table 3.

103. Oas and Hauser, "Political Ecology."

104. When entire houseyards of enslaved laborers were excavated at Sugarloaf and Bois Cotlette, we can estimate that there were approximately two goglets per houseyard in the regimented villages of Sugarloaf and Boise Cotlette (see Hauser, "Political Ecology of Water").

105. DNA, Grants, Leases and Conveyances ON.1 251–59.

106. Ranston, *Belisario*, 264.

107. Ranston, *Belisario*, 262.

108. Hardly unique to Latin America's humoral theory, a healthy body is conceptualized in a state of balance between hot and cold. Illness is a result of imbalance between these (see Bougerol, *La Médecine*; Bougerol, "Logique De L'excès." Hot or cold substances can be applied (oils, water, etc.) or consumed (foods of particular qualities) to rebalance bodily humors. Everyday practices such as bathing outdoors can be seen as a healthy habit (see Benoît, *Corps*, 175).

109. Quinlan and Quinlan, "Eating and Healing."

110. UA, MS 2070, Journal of Jonathan Troup, 60.

111. UA, MS 2070, Journal of Jonathan Troup. These are mention on pages 104, 104v, 22v, 118, and 172, respectively.

112. UA, MS 2070, Journal of Jonathan Troup, 66.

113. Hearn, *Two Years*, 382.

114. Hearn, *Two Years*, 224.

115. Archaeologists have suggested that artisans who share habits and conventions through social networks compose a community of practice (Roddick, "Scalar Relations"). Archaeologists have employed this concept widely, but not exclusively, to organize evidence about pottery manufacture and explain how it passes from one community to the next in time or space (Stark, "Glaze Ware Technology," 25.

116. Kiple, *Caribbean Slave*, 145.

117. Mrozowski, Franklin, and Hunt, "Archaeobotanical Analysis"; Tilley and Schrenk, "Introduction"; Wilkie, *Archaeology of Mothering*.

118. Reifschneider, "Enslavement and Institutionalized Care."

119. J. Handler and Bilby, *Enacting Power*.

120. Cited in J. Handler and Bilby, *Enacting Power*, 33.

121. Cited in J. Handler and Bilby, *Enacting Power*, 81.

122. Edwards-Ingram, "African American Medicine."

123. J. Handler and Bilby, *Enacting Power*, 40.

124. Weiner, *Inalienable Possessions*, 33.

125. See Sally Price, "When is a Calabash not a Calabash," for meaningful distinctions between gourds and calabash.

Epilogue

1. For Resilience, See Conolly and Lane, "Vulnerability, Risk and Resilience." Archaeologists working in other times and places have shown that interdependency and resilience, the ability to accommodate the unexpected, are inversely correlated. See Redman and Kinzig "Resilience of Past Landscapes."

2. See Honychurch, *In the Forests of Freedom*.

3. Ellens, "Tracing the Postemancipation."

4. Harris, "*Hard Kind of Freedom*"; Honychurch, "Slave Valleys."

5. J. A. Boromé, "Crown Colony," 30.

6. Richardson, *Igniting*, 74.

7. Cited in Richardson, *Igniting*, 95.

8. Cited in Richardson, *Igniting*, 95.

9. Bell, *Glimpses*, 27.

10. Hulme, *Remnants*, 26.

11. F. Richard, *Reluctant Landscapes*.

12. Meskell and Preucel, "Knowledges."

13. Lane, "Possibilities," 260; Logan et al. "Usable Pasts."

14. See Dunnavant et al., "Assessing Heritage."

BIBLIOGRAPHY

Archival Sources

British National Archives (BNA)
- Colonial Office and predecessors: Dominica:
  - Shipping Returns, CO 76/4–8
- Original Correspondence, CO 71/8–14, 71/23
- Commissions of Legal Inquiry, CO 318/76
- Board of Trade (BT)
  - Dominica, Miscellania, 6/41
- Treasury Papers
- West Indies, Dominica, Grenada and St. Vincent, T1 453/71
- West Indies, Dominica, Papers related to Commision, T1 500
- West Indies, Dominica, Papers Related to Smuggling, T1 434

Dominica National Archives (DNA)
- Grants, Leases and Conveyances
- Acts of the Privy Council
- Common Pleas
- Probates
- Trienneal Slave Register

Archives Nationales d'Outre-Mer, Aix-en-Proveance (ANOM)

Censuses and Notarial Minutes

Depot des Papiers Publics des Colonies [DPPC]
- Recensements, rôles et états de réfugiés, fois et hommages, titres de concessions, G 1/498

Parish records, northern Martinique [NOT MAR]
- Prêcheur: 1665–1816, 5Mi19
- Marigot: 1666–1762, 1Mi92, 5Mi174
- Macouba: 1683–1847, 5Mi170
- Basse-Pointe 1662–1874, 5Mi106
- Lorrain, 1672–1776, 1Mi91

Commerce

Etats de commerce, Martinique, 1744–1767, C8B21
Commerce avec les colonies, 1748–1788, F2B2–F2B7:
Statistics relating to commerce, F2B13

Administration

Fonds Ministeriels [FM]
Correspondence a l'arrivee, Martinique, FMC8A 1–121
Correspondence a l'arrivee, Martinique, divers, FMC8B, 1–55
Iles de Vent, 1672–1787, FM C10D/3

Gilder Lehrman Collection (GLC)

The Examination of Polinaire taken the seventh day of February 1791, 02542.32.15

University of Aberdeeen Special Collections (UA)

Journal of Jonathan Troup 1789–1790, MS 2070

References

Abénon, L. R. *La Guadeloupe de 1671 à 1759*. Paris: Harmattan, 1987.

"Acts of the Assembly Passed in the Island of Barbadoes, from 1648 to 1721." In *Act No. 598, Passed March 21, 1715, Confirmed October 17, 1717*. London: John Baskett, 1721.

Agrawal, Arun. "Environmentality: Community, Intimate Government, and the Making of Environmental Subjects in Kumaon, India." *Current Anthropology* 46, no. 2 (2005): 161–90.

Agarwal, Sabrina. "Bone Morphologies and Histories: Life Course Approaches" in *Bioarchaeology. Yearbook of Physical Anthropology* 159 (2016): 130–49.

Allsopp, Richard. *Dictionary of Caribbean English Usage*. New York: Oxford University Press, 1996.

Amouric, Henri, and Lucy Vallauri. *Biot, Jarres, Terrailles et Fontaines, Xvie-Xxe Siècles*. Arezzo, Italy: Arezzo Association, 2006.

Anderson, Fred. *Crucible of War: The Seven Years' War and the Fate of Empire in British North America, 1754–1766*. Random House Digital, Inc., 2007.

Anonymous. *An Answer to the Letter to Two Great Men: Containing Remarks and Observations on That Piece, and Vindicating the Character of a Noble Lord from Inactivity*. London: Printed for A. Henderson, 1760.

———. *The North-American and the West-Indian Gazetteer: Containing an Authentic Description of the Colonies and Islands in That Part of the Globe, Shewing Their*

Situation, Climate, Soil Produce, and Trade; with Their Former and Present Conditions. London: Payne, 1776.

———. "West Indian News." *The Gentlemen's Magazine* (1786).

Antczak, Andrzej, Konrad A. Antczak, and Marlene Antczak. "Risky Business: Historical Archaeology of the Dutch Salt Enterprise on La Tortuga Island, Venezuela (1624–38)." *Post-Medieval Archaeology* 49, no. 2 (2015): 189–219.

Arcangeli, Myriam. "For Water, Food, Tables and Health: The Colonial Ceramic Culture of Guadeloupe, French West Indies." PhD diss., University of Boston, 2012.

———. *Sherds of History: Domestic Colonial Life in Guadeloupe*. Gainesville: University Press of Florida, 2015.

Armstrong, A. C. "The Effect of Drainage Treatments on Cereal Yields: Results from Experiments on Clay Lands." *Journal of Agricultural Science* 91, no. 1 (1978): 229–35.

Armstrong, Douglas. *The Old Village and the Great House: An Archaeological and Historical Examination of Drax Hall Plantation, St. Ann's Bay, Jamaica*. Urbana: University of Illinois Press, 1990.

Armstrong, Douglas, and Mark Fleischman. "House-Yard Burials of Enslaved Laborers in Eighteenth-Century Jamaica." *International Journal of Historical Archaeology* 7, no. 1 (2003): 33–65.

Armstrong, Douglas, and Kenneth Kelly. "Settlement Patterns and the Origins of African Jamaican Society: Seville Plantation, St. Ann's Bay, Jamaica." *Ethnohistory* 47, no. 2 (2000): 369–97.

Armytage, Frances. *The Free Port System in the British West Indies: A Study in Commercial Policy 1766–1822*. Imperial Studies Vol. XX. London: Longman Greens, 1953.

Arrom, José Juan. "The Creation Myths of the Taíno." In *Taíno: Pre-Columbian Art and Culture from the Caribbean*, edited by R. Alegria, 68–79. New York: Monacelli Press, 1997.

Atwood, Thomas. *The History of the Island of Dominica*. London, 1791.

Avery, George, H. F. Gregory, Jason Emery, and Jeffrey Girard. "French Faience in Northwest Louisiana." In *French Colonial Pottery: An International Conference*, edited by G. Avery, 411–67. Nachitoches, LA: Northwestern State University Press, 2007.

Bain, Allison, Anne-Marie Faucher, Lisa M. Kennedy, Allison R. LeBlanc, Michael J. Burn, Rebecca Boger, and Sophia Perdikaris. "Landscape Transformation During Ceramic Age and Colonial Occupations of Barbuda, West Indies." *Environmental Archaeology* 23, no. 1 (2018): 1–11.

Baker, Patrick. *Centering the Periphery: Chaos, Order and the Ethnohistory of Dominica*. Kingston, Jamaica: University of the West Indies Press, 1994.

Bakker, Isabella. "Social Reproduction and the Constitution of a Gendered Political Economy." *New Political Economy* 12, no. 4 (2007): 541–56.

Bakker, Karen. "The 'Commons' Versus the 'Commodity': Alter-Globalization, Anti-Privatization and the Human Right to Water in the Global South." *Antipode* 39, no. 3 (2007): 430–55.

Bates, Lynsey Ann. "Surplus and Access: Provisioning and Market Participation by Enslaved Laborers on Jamaican Sugar Estates." Ph.D. diss., University of Pennsylvania, 2015.

Bates, Lynsey A., Jillia Galle, and Fraser D. Neiman. "Building an Archaeological Chronology for Morne Patate." Chap. 4 In *Archaeology in Dominica: Everyday Ecologies and Economies at Morne Patate*, edited by Mark Hauser and Diane Wallman, 64–86. Gainesville: University Press of Florida, 2020.

Battle-Baptiste, Whitney. *Black Feminist Archaeology.* New York: Routledge, 2017.

———. "Sweepin'spirits: Power and Transformation on the Plantation Landscape." In *Archaeology and Preservation of Gendered Landscapes*, edited by Sherene Baugher and Suzanne M. Spencer-Wood, 81–94. New York: Springer, 2010.

Bauer, Andrew M., and Mona Bhan. *Climate without Nature: A Critical Anthropology of the Anthropocene.* Cambridge: Cambridge University Press, 2018.

Bauer, Andrew, and Kathleen Morrison. "Water Management and Reservoirs in India and Sri Lanka." In *Encyclopaedia of the History of Science, Technology, and Medicine in Non-Western Cultures*, edited by Helaine Selin, 2213–14. Dordrecht: Springer Netherlands, 2008.

Bayley, Frederic William Naylor. *Four Years' Residence in the West Indies.* London: William Kidd, 1830.

Beaudry, Mary C. "Households beyond the House: On the Archaeology and Materiality of Historical Households." In *Beyond the Walls: New Perspectives on the Archaeology of Historical Households*, edited by Kevin Fogle, James Nyman, and Mary C. Beaudry. Gainesville: University Press of Florida, 2015.

Beckles, Hilary McD. "An Economic Life of Their Own: Slaves as Commodity Producers and Distributors in Barbados." *Slavery and Abolition* 12, no. 1 (1991): 31–47.

Belgrove, William, and Henry Drax. *A treatise upon husbandry or planting. By William Belgrove. A regular bred, and long experienc'd planter, of the island of Barbados. And may be of great use to the planters of all the West-India Islands.* Boston: D. Fowle in Ann-Street, near the town-dock, 1755.

Bell, Henry Hesketh. *Glimpses of a Governor's Life: From Diaries, Letters, and Memoranda.* London: S. Low, Marston & co., ltd., 1946.

———. "Report on the Caribs of Dominica." *Dominica Report on Caribs*, no. 2 (1902).

Benoît, Catherine. *Corps, Jardins, Mémoires: Anthropologie Du Corps Et De L'espace À La Guadeloupe.* Paris: CNRS; Maison des sciences de l'homme, 2000.

Benson, Charlotte, and Edward Clay. *Dominica: Natural Disasters and Economic Development in a Small Island State.* Washington, D.C.: World Bank, 2001.

Berard, Benoit. "The 'South-Dominica' Archaeological Mission: The Soufrière Site." In *XXII Conference of the International Association of Caribbean Archaeology*, 23–29, 2007.

Black, Clinton. *Archival Development: Report Prepared for the Government of the Commonwealth of Dominica by the United Nations Educational, Scientific and Cultural Organization.* Paris: UNESCO, 7 November 1983.

Blakey, Michael. "Bioarchaeology of the African Diaspora in the Americas: Its Origins and Scope." *Annual Review of Anthropology* 30, no 1 (2001): 387–422.

Bloch, Lindsay, and Elizabeth Bollwerk. "Sourcing Coarse Earthenware at Morne Patate: The Impacts of French Colonialism and Local Exchange." Chap. 7 In *Archaeology in Dominica: Everyday Ecologies and Economies at Morne Patate*, edited by Mark Hauser and Diane Wallman, 129–52. Gainesville: University Press of Florida, 2020.

Blouet, Helen C. "Interpretations of Burial and Commemoration in Moravian and African Diasporas on St. John, Virgin Islands." *International Journal of Historical Archaeology* 17, no. 4 (2013): 731–81.

Boelens, Rutgerd, Jaime Hoogesteger, Erik Swyngedouw, Jeroen Vos, and Philippus Wester. "Hydrosocial Territories: A Political Ecology Perspective." *Water International* 41, no. 1 (2016): 1–14.

Bolender, Douglas J. "From Surplus Land to Surplus Production in the Viking Age Settlement of Iceland." In *Surplus: The Politics of Production and the Strategies of Everyday Life*, edited by Christopher T. Morehart and Kristin De Lucia, 153–74. Boulder: University Press of Colorado, 2015.

Boomert, Arie. "Amerindian–European Encounters on and around Tobago (1498–Ca. 1810)." *Antropológica* 97, no. 98 (2002): 71–207.

———. "The Cayo Complex of St. Vincent: Ethnohistorical and Archaeological Aspects of the Island Carib Problem." *Anthropologica* 66 (1986): 3–68.

———. "Searching for Cayo in Dominica." Paper presented at the XXIII Congress of the International Association for Caribbean Archaeology, St, John, Antigua, edited by S. Rebovich, 655–77, 2009.

Boromé, Joseph A. "How Crown Colony Government Came to Dominica by 1898." *Caribbean Studies* 9, no. 3 (1969): 26–67.

Boromé, Jospeh. *Aspects of Dominica History.* Roseau, Dominica: Government Printing Office, 1972.

———. "The French and Dominica, 1699–1763." *Jamaican Historical Review* 7, nos. 1–2 (1967): 9–39.

Bougerol, Christiane. *La Médecine Populaire À La Guadeloupe.* Paris: Karthala, 1983.

———. "Logique De L'excès, Logique De La Rupture: Le Chaud Et Le Froid Dans La Médecine Populaire De Guadeloupe." *L'Ethnographie* 81, nos. 96–97 (1985): 159–67.

Breton, Raymond. *Dictionnaire Caraïbe-Français*. 1665. Edited by Marina Besada Paisa, Jean Bernabé, Sybille De Pury, Raymond Relouzat, Odile Renault Lescure, Marc Thouvenot and Duna Troiani. Paris: Karthala, 1999.

———. *Father Raymond Breton's Observations of the Island Carib: A Compilation of Ethnographic Notes Taken from Breton's Carib-French Dictionary Published in 1665.* Translated by Marshall McKusick and Pierre Vérin. New Haven, CT: Human Relations Area Files, 1958.

Brewer, John. *The Sinews of Power: War, Money, and the English State, 1688–1783.* 1st American ed. New York: Knopf, 1989.

Bright, Alistair J. *Blood Is Thicker Than Water: Amerindian Intra-and Inter-Insular Relationships and Social Organization in the Pre-Colonial Windward Islands.* Leiden, NL: Sidestone Press, 2011.

Brite, Elizabeth Baker. "The Hydrosocial Empire: The Karakum River and the Soviet Conquest of Central Asia in the 20th Century." *Journal of Anthropological Archaeology* 52 (2018): 123–36.

Brongniart, Alexandre. *Description Méthodique Du Musée Céramique De La Manufacture Royal De Porcelaine De Sevres*. Vol. 1, Paris: A. Leleux, 1845.

Broodbank, Cyprian. *The Making of the Middle Sea: A History of the Mediterranean from the Beginning to the Emergence of the Classical World*. Oxford: Oxford University Press, 2013.

Brooks, Catherine M. "Aspects of the Sugar-Refining Industry from the 16th to the 19th Century." *Post-Medieval Archaeology* 17, no. 1 (1983): 1–14.

Brooks, G. R. "An Analysis of Prey Consumed by the Anuran Leptodactylus Fallax, from Dominica, West Indies." *Biotropica* 14 (1982): 301–9.

Brown, Vincent. *The Reaper's Garden: Death and Power in the World of Atlantic Slavery.* Cambridge, MA: Harvard University Press, 2008.

———. "Social Death and Political Life in the Study of Slavery." *The American Historical Review* 114, no. 5 (2009): 1231–49.

Browne, Charles, and R. E. Blouin. *The Chemistry of the Sugar Cane and Its Products in Louisiana*. Louisiana Bulletin No. 91. Louisiana State University and Agricultural and Mechanical College, Agricultural Experiment Station, 1907.

Bryant, Sherwin. *Rivers of Gold, Lives of Bondage: Governing through Slavery in Colonial Quito.* Chapel Hill: University of North Carolina Press, 2014.

Buer, Mabel Craven. *Health, Wealth and Population in the Early Days of the Industrial Revolution.* New York: Routledge, 2013.

Bueze, Lynn-Rose. "La Potterie En Martinique." In *Les Cahiers Du Patrimoine: Artisanal Et Petit Métiers.* Fort-de-France, Martinique: Conseil Regional de la Martinique, 1990.

Burnard, Trevor. *Mastery, Tyranny, and Desire: Thomas Thistlewood and His Slaves in the Anglo-Jamaican World.* Chapel Hill: University of North Carolina Press, 2004.

Bush, Barbara. *Slave Women in Caribbean Society, 1650–1838*. Bloomington: Indiana Univerity Press, 1990.

Butel, Paul. *Histoire des Antilles françaises XVIIe–XXe siècle.* Paris: Perrin, 2002.

Byres, John. "Plan of the Island of Dominica Laid Down by Actual Survey under the Direction of the Honourable Commissioners for the Sale of Lands in the Ceded Islands." London: S. Hooper, 1776.

———. *References to the Plan of the Island of Dominica, as Surveyed from the Year 1765 to 1773*. London: S. Hooper, 1777.

Cain, Peter, and Anthony Hopkins. "Gentlemanly Capitalism and British Expansion Overseas I. The Old Colonial System, 1688–1850." *Economic History Review* 39, no. 4 (1986): 501–25.

Callaghan, Richard T. "Ceramic Age Seafaring and Interaction Potential in the Antilles: A Computer Simulation." *Current Anthropology* 42, no. 2 (2001): 308–13.

Cameron, Catherine M. "Captives and Culture Change." *Current Anthropology* 52, no. 2 (2011): 169–209.

Campbell, R. *The London Tradesman Being a Compendious View of All the Trades, Professions, Arts, both Liberal and Mechanic, Now Practised in the Cities of London and Westminster . . .* London: T. Gardner, 1747.

Campbell, Susan. "Africans to Dominica: 100,000 Middle Passages from 'Guinea' to the Eastern Caribbean, 1764–1808." *Dominica Academy of Arts and Sciences* 25 (2007).

"Carmen Thyssen-Bornemisza Collection, Agostino Brunias," https://coleccioncarmenthyssen.es/en/artist/agostino-brunias/ (accessed March 20, 2018).

Carney, Judith A. *Black Rice: The African Origins of Rice Cultivation in the Americas*. Cambridge, MA: Harvard University Press, 2002.

———. "Fields of Survival, Foods of Memory." In *Geographies of Race and Food: Fields, Bodies, Markets*, edited by Rachel Slocum and Arun Saldanha, 61–78. Abingdon: Routledge, 2016.

Carney, Judith, and Richard Nicholas Rosomoff. *In the Shadow of Slavery: Africa's Botanical Legacy in the Atlantic World*. Berkeley and Los Angeles: Univerrsity of California Press, 2011.

Carrazé, François. *Kantis Et Gargoulettes Du Midi Méditerranéen*. Rieumes: Revue du G.R.E.C.A.M, 2002.

Carretta, Vincent. *Phillis Wheatley: Biography of a Genius in Bondage*. Athens: University of Georgia Press, 2011.

Chapelot, J. "Le Raffinage Du Sucre Dans La Deuxième Moitié Du XVI Siècle À La Rochelle Et Ses Relations Avec Les Ateliers Céramiques Régionaux." *Archéologie médiévale* 35 (2005): 141–73.

Chenoweth, John M., and Alan Farahani. "Color in Historical Ceramic Typologies: A Test Case in Statistical Analysis of Replicable Measurements." *Journal of Archaeological Science: Reports* 4 (2015): 310–19.

Chouin, Gérard L., and O. Lasisi. "Crisis and Transformation in 'Bight of Benin' at the Dawn of the Atlantic Trade." In *Power, Political Economy, and Historical Landscapes of the Modern World: Interdisciplinary Perspectives*, edited by Christopher R. DeCorse, 285. Binghamton: SUNY Press, 2019.

Christelow, Allan. "Contraband Trade between Jamaica and the Spanish Main, and the Three Port Act of 1766." *The Hispanic American Historical Review* 22, no. 2 (1942): 309–43.

Clapham, John. *The Bank of England, a History*. 2 vols. Cambridge: The University Press, 1944.

———. "The Last Years of the Navigation Acts." *The English Historical Review* 25, no. 99 (1910): 480–501.

Clément, Alain. "English and French Mercantilist Thought and the Matter of Colonies During the 17th Century." *Scandinavian Economic History Review* 54, no. 3 (2006): 291–323.

Clement, Christopher Ohm. "Settlement Patterning on the British Caribbean Island of Tobago." *Historical Archaeology* 31, no. 2 (1997): 93–106.

Coleman, Ronald. "Dripstones: Rudimentary Water Filters on Ship and Shore in the 18th Century." *Bulletin of the Australian Institute for Maritime Archaeology* 25 (2001): 113–20.

Coleman, Ronald, and Anthony Porter. "The So-Called 'Spanish Jars' of Jamaica and Their Italian Connection." *Jamaica Journal* 30, no. 3 (2007): 50–61.

Colthurst, John Bowe. *The Colthurst Journal: Journal of a Special Magistrate in the Islands of Barbados and St. Vincent, July 1835–September 1838.* Edited by Woodville Marshall. Millwood, NY: KTO Press, 1977.

Cook, Christina, and Karen Bakker. "Water Security: Debating an Emerging Paradigm." *Global Environmental Change* 22, no. 1 (2012): 94–102.

Conolly, James, and Paul J. Lane. "Vulnerability, Risk, Resilience: An Introduction." *World Archaeology* 50, no. 4 (2018): 547–53.

Cooper, Jago. "The Climatic Context for Pre-Columbian Archaeology in the Caribbean." *The Oxford Handbook of Caribbean Archaeology*, edited by William F. Keegan, Corinne L. Hofman, and Reniel Rodríguez Ramos, 47. Oxford: Oxford University Press, 2013.

———. "Fail to Prepare, Then Prepare to Fail: Rethinking Threat, Vulnerability, and Mitigation in the Precolumbian Caribbean." In *Surviving Sudden Environmental Change: Answers from Archaeology*, edited by Jago Cooper and Payson Sheets, 91–114. Boulder: University Press of Colorado, 2012.

Cooper, Jago, and Matthew Peros. "The Archaeology of Climate Change in the Caribbean." *Journal of Archaeological Science* 37, no. 6 (2010): 1226–32.

Corruccini, Robert S., Jerome S Handler, Robert J. Mutaw, and Frederick W. Lange. "Osteology of a Slave Burial Population from Barbados, West Indies." *American Journal of Physical Anthropology* 59, no. 4 (1982): 443–59.

Cossin, Zev, and Mark W. Hauser. "Sugar Economics: A Visual Economy of the Plantation Landscape in Colonial Dominica." In *Historical Archaeologies of Capitalism*, edited by Mark Leone and Janet Napoli, 399–418. New York: Springer, In press, 2015.

Courtaud, Patrice, Thomas Romon, Lot Belmont, and Maison Jersier. "Le Site D'anse Sainte-Marguerite (Guadeloupe, Grande Terre) Presentation D'un Cimetiere D'epoque Coloniale." *Journal of Caribbean Archaeology* 1 (2004): 58–67.

Cracknell, Basil E. *Dominica*. Newton Abbot, UK: David & Charles, 1973.

Cranstone, David. "From Slitting Mill to Alloy Steel: The Development of Swalwell Ironworks." *Industrial Archaeology Review* 33, no. 1 (2011): 40–57.

Cronon, William. *Nature's Metropolis: Chicago and the Great West*. New York: W. W. Norton & Company, 2009.

Curet, L. Antoniol, Will J. Pestle, J. Stringer, and D. Green. "Evidence of Major Flooding Event in Southern Puerto Rico." *Proceedings of the International Association for Caribbean Archaeology* 25 (2015): 944–62.

Davis, Dave. "Archaic Settlement and Resource Exploitation in the Lesser Antilles: Preliminary Information from Antigua." *Caribbean Journal of Science* 17, nos. 1–4 (1982): 107–22.

Davis, Tim. *Agricultural Water Use and River Basin Conservation*. Gland, Switzerland: WWF, 2003.

Dawdy, Shannon Lee. *Building the Devil's Empire: French Colonial New Orleans*. Chicago: University of Chicago Press, 2008.

———. "The Taphonomy of Disaster and the (Re)Formation of New Orleans." *American Anthropologist* 108, no. 4 (2006): 719–30.

De León, Jason. *The Land of Open Graves: Living and Dying on the Migrant Trail*. Berkeley: University of California Press, 2015.

de Saint, Médéric Louis Elie Moreau. *Description Topographique, Physique, Civile, Politique Et Historique De La Partie Francaise De L'isle Saint Domingue (Etc.)*. Vol. 1: Moreau de Saint-Mery, Paris: Société française d'histoire d'outre-mer 1797 [2004].

de Voogt, Alex. "The Comoros: A Confluence of Board Game Histories." *Board Game Studies Journal* 13, no. 1 (2019): 1–13.

Debien, Gabriel. "La Nourriture Des Esclaves Sur Les Plantations Des Antilles Françaises Aux XVIIe et XVIIIe Siècles." *Caribbean Studies* 4, no. 2 (1964): 3–27.

———. *Les Esclaves Aux Antilles Françaises, XVIIe–XVIIIe Siècles*. Basse-Terre, Guadeloupe: Société d'Histoire de la Guadeloupe, 1974.

Debrett, John. *The Baronetage of England*. London: J. G. & F. Rivington, 1839.

Deerr, Noël. *Sugar and the Sugar Cane: An Elementary Treatise on the Agriculture of the Sugar Cane and on the Manufacture of Cane Sugar*. Altrincham (Manchester): Norman Rodger, 1905.

Deetz, James. *In Small Things Forgotten: The Archaeology of Everyday Life in Early America*. New York: Anchor Books, 1977.

Deleuze, Gilles, and Félix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia*. London: Bloomsbury Publishing, 1988.

Delle, James. *An Archaeology of Social Space: Analyzing Coffee Plantations in Jamaica's Blue Mountains*. Contributions to Global Historical Archaeology. New York: Plenum Press, 1998.

———. *The Colonial Caribbean Landscapes of Power in Jamaica's Plantation System*. New York: Cambridge University Press, 2014.

———. "Power and Landscape: Spatial Dynamics in Early Nineteenth Century Jamaica." In *The Dynamics of Power*, edited by Maria O. Donovan, 341–61. Carbondale: Center for Archaeological Investigations, Southern Illinois University, 2002.

DeLoughrey, Elizabeth. "Yam, Roots, and Rot: Allegories of the Provision Grounds." *small axe* 15, no. 1 (2011): 58–75.

———. "The Settlement Pattern of Sugar Plantations on St Eustatius." In *Spatial Patterning in Historical Archaeology: Selected Studies of Settlement*, edited by Donald W. Linebaugh and Gary G. Robinson, 33–61. Williamsburg, VA: William and Mary Center for Archaeological Research, 1994.

Diderot, D. "Agriculture Et Économie Rustique – Sucrerie Et Affinage Des Sucres." In *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*, edited by Denis Diderot. Paris: Briasson, David, Le Breton, Durand, 1751–1765.

Dookhan, I. "Dominica Almanac and Register." Roseau: WM. F. Stewart Printer, 1828.

Douglas, John, William Pulteney, William Pitt, and Thomas Pelham-Holles. *A Letter Addressed to Two Great Men on the Prospect of Peace.* London: Printed for A. Millar . . . sold by A. Kincaid & J. Bell, Edinburgh, 1760.

Dubois, Laurent. *Avengers of the New World.* Cambridge, MA: Harvard University Press, 2005.

———. *A Colony of Citizens: Revolution and Slave Emancipation in the French Caribbean, 1787–1804*. Kingston, Jamaica: Ian Randle, 2004.

Dunaway, Wilma A. *Gendered Commodity Chains: Seeing Women's Work and Households in Global Production.* Palo Alto: Stanford University Press, 2013.

Dunn, Richard S. *Sugar and Slaves: The Rise of the Planter Class in the English West Indies, 1624–1713.* Chapel Hill,: University of North Carolina Press, 1972.

Dunnavant, Justin P., Ayana Omilade Flewellen, Alexandra Jones, Alicia Odewale, and William White. "Assessing Heritage Resources in St. Croix Post-Hurricanes Irma and Maria." *Transforming Anthropology* 26, no. 2 (2018): 157–72.

DuTertre, Jean Baptiste. *Histoire Générale Des Antilles Habite'es Par Les François.* Vol. 3. Paris: Thomas Iolly, 1667–1671.

Edelson, S Max. *The New Map of Empire: How Britain Imagined America before Independence*. Cambridge, MA: Harvard University Press, 2017.

———. *Plantation Enterprise in Colonial South Carolina.* Cambridge, MA: Harvard University Press, 2006.

Edgeworth, Matt. *Fluid Pasts: Archaeology of Flow.* London: Bristol Classical Press, 2011.

Edwards, Bryan. *The History of the British Colonies in the West Indies.* London: J. Stockdale, 1801.

Edwards-Ingram, Ywone. "African American Medicine and the Social Relations of Slavery." In *Race and the Archaeology of Identity*, edited by Charles E. Orser and James M. Skibo, 34–53. Salt Lake City: University of Utah Press, 2001.

Ellens, Samantha. "Tracing the Postemancipation Landscape of Dominica's Lime Industry." Chap. 8 in *Archaeology in Dominica: Everyday Ecologies and Economies at Morne Patate*, edited by Mark Hauser and Diane Wallman, 48–63. Gainesville: University Press of Florida, 2020.

Ellis, John. *An Historical Account of Coffee: With an Engraving and Botanical Description of the Tree: To Which Are Added Sundry Papers Relative to Its Culture and Use, as an Article of Diet and of Commerce.* London: Edward and Charles Dilly, 1774.

Escobar, Arturo. "After Nature: Steps to an Antiessentialist Political Ecology 1." *Current Anthropology* 40, no. 1 (1999): 1–30.

Espenshade, Christopher. "A River of Doubt: Marked Colonoware, Underwater Sampling, and Questions of Inference." *African Diaspora Archaeology Newsletter* 10, no. 1 (2007): 2.

Evans, Chris, and Göran Rydén. *Baltic Iron in the Atlantic World in the Eighteenth Century.* The Atlantic World: Vol. 13. Leiden, NL: Brill, 2007.

Fanon, Frantz. *The Wretched of the Earth.* Translated by Constance Farrington. New York: Grove Press, 1963.

Fennell, Christopher C. "Group Identity, Individual Creativity, and Symbolic Generation in a Bakongo Diaspora." *International Journal of Historical Archaeology* 7, no. 1 (2003): 1–31.

Ferguson, Leland. "'The Cross Is a Magic Sign': Marks on Eighteenth-Century Bowls from South Carolina." In *"I, Too, Am America": Archaeological Studies of African-American Life*, edited by Theresa Singleton, 116–31. Charlottesville: University of Virginia Press, 1999.

———. *Uncommon Ground: Archaeology and Early African America, 1650–1800.* 1992. Washington, D.C.: Smithsonian Institution, 2012.

Finley, Moses I., and Brent D. Shaw. *Ancient Slavery and Modern Ideology.* Princeton, NJ: Markus Wiener Publishers, 1998.

Fitzpatrick, Scott M. "Verification of an Archaic Age Occupation on Barbados, Southern Lesser Antilles." *Radiocarbon* 53, no. 4 (2011): 595–604.

Ford, Percy, and Grace Ford. *A Guide to Parliamentary Papers: What They Are, How to Find Them, How to Use Them.* Dublin: Irish Academic Press, 1972.

Franklin, Benjamin, and Richard Jackson. *The Interest of Great Britain Considered, with Regard to Her Colonies, and the Acquisitions of Canada and Guadaloupe.* London: Printed and sold by William Bradford, at the London-Coffee-House, 1760. http://turing.library.northwestern.edu/login?url=http://opac.newsbank.com/select/evans/8600.

Franklin, Maria. "The Archaeological Dimensions of Soul Food: Interpreting Race, Culture, and Afro-Virginian Identity." In *Race and the Archaeology of Identity*, edited by Charles E. Orser and James M. Skibo, 88–107. Salt Lake City: University of Utah Press, 2001.

Fryer, John. *A New Account of East India and Persia: Being Nine Years' Travels, 1672–1681.* 1681. New York: Kraus Reprint, 1915.

Galle, Jillian. "Costly Signaling and Gendered Social Strategies among Slaves in the Eighteenth-Century Chesapeake: An Archaeological Perspective." *American Antiquity* 75, no. 1 (2010): 19–43.

Garraway, Dorris. "Race, Reproduction and Family Romance in Moreau De Saint-Méry's Description . . . De La Partie Française De L'isle Saint-Domingue." *Eighteenth-Century Studies* 38, no. 2 (2005): 227–46.

General Report of the Emigration Commissioners. Vol. 2, London: H.M. Stationery Office, 1836.

Gibson, Heather. "Domestic Economy and Daily Practice in Guadeloupe: Historical Archaeology at La Mahaudière Plantation." *International Journal of Historical Archaeology* 13, no. 1 (2009): 27–44.

Girault, Christian. "Recherches De Géographie Économique Aux Antilles: Le Cas Haïtien." *Espace géographique* 14, no. 4 (1985): 285–88.

Goebel, Dorothy Burne. "The 'New England Trade' and the French West Indies, 1763–1774: A Study in Trade Policies." *William and Mary Quarterly* 20, no. 3 (1963): 332–72.

Grahn, Lance Raymond. *The Political Economy of Smuggling: Regional Informal Economies in Early Bourbon New Granada*. Boulder, CO: Westview Press, 1997.

Green, Patricia Elaine. "The Evolution of Jamaican Architecture 1494 to 1838." Master's thesis, University of Pennsylvania, 1988.

Greene, Jack. *Peripheries and Center: Constitutional Development in the Extended Polities of the British Empire and the United States, 1607–1788.* Athens: University of Georgia Press, 1986.

Groom, Kaelin M. "Rock Art Management and Landscape Change: Mixed Field Assessment Techniques for Cultural Stone Decay." PhD diss., University of Arkansas, 2017.

Haines, Robin, and Ralph Shlomowitz. "Explaining the Mortality Decline in the Eighteenth-Century British Slave Trade." *Economic History Review* 53, no. 2 (2000): 262–83.

Hall, Derek. "Land Grabs, Land Control, and Southeast Asian Crop Booms." *Journal of Peasant Studies* 38, no. 4 (2011): 837–57.

Hall, Derek, Philip Hirsch, and Tania Li. "Introduction to Powers of Exclusion: Land Dilemmas in Southeast Asia." In *Powers of Exclusion: Land Dilemmas in Southeast Asia*, edited by Derek Hall, Philip Hirsch and Tania Li, 1–27. Singapore: National University of Singapore Press and University of Hawaii Press, 2011.

Hamilton, Douglas J. *Scotland, the Caribbean and the Atlantic World, 1750–1820.* Manchester: Manchester University Press, 2005.

Handler, Jerome. "Aspects of Amerindian Ethnography in 17th Century Barbados." *Caribbean Studies* 9, no. 4 (1970): 50–72.

———. "Diseases and Medical Disabilities of Enslaved Barbadians, from the Seventeenth Century to around 1838." *Journal of Caribbean History* 40, no. 1 (2006): 1–38.

———. "Plantation Slave Settlements in Barbados, 1650s to 1834." In *In the Shadow of the Plantation: Caribbean History and Legacy*, edited by A. Thompson, 121–58. Kingston, Jamaica: Ian Randle, 2002.

Handler, Jerome, and Kenneth Bilby. *Enacting Power: The Criminalization of Obeah in the Anglophone Caribbean, 1760–2011.* St. Augustine, Trinidad: University of the West Indies Press, 2012.

Handler, Jerome, and Fredrick Lange. *Plantation Slavery in Barbados: An Archaeological and Historical Investigation.* Cambridge, MA: Harvard University Press, 1978.

Handler, Jerome, and Michael Tuite. *Slavery Images: A Visual Record of the African Slave Trade and Slave Life in the Early African Diaspora,* http://www.slaveryimages.org/s/slaveryimages/page/about.

Handler, Jerome, and Diane Wallman. "Production Activities in the Household Economies of Plantation Slaves: Barbados and Martinique, Mid-1600s to Mid-1800s." *International Journal of Historical Archaeology* 18 (2014): 441–66.

Handler, Jerome S. "Custom and Law: The Status of Enslaved Africans in Seventeenth-Century Barbados." *Slavery & Abolition* 37, no. 2 (2016): 233–55.

———. "Gizzard Stones, Wari in the New World, and Slave Ships: Some Research Questions." *African Diaspora Archaeology Newsletter* 12, no. 2 (2009): 22.

Haraway, Donna. "Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin." *Environmental Humanities* 6, no. 1 (2015): 159–65.

———. *The Companion Species Manifesto: Dogs, People, and Significant Otherness*. Vol. 1. Chicago: Prickly Paradigm Press, 2003.

———. *Staying with the Trouble: Making Kin in the Chthulucene.* Durham, NC: Duke University Press, 2016.

Harley, J. B. "The Bankruptcy of Thomas Jefferys: An Episode in the Economic History of Eighteenth Century Map-Making." *Imago Mundi* 20 (1966): 27–48.

Harris, Khadene. "A Hard Kind of Freedom: Land Labor and Material Culture in Post-Emancipation Dominica." Ph.D. diss., Northwestern University, 2019.

———. "Morne Patate House Yards 1750–1900." Chap. 5 in *Archaeology in Dominica: Everyday Ecologies and Economies at Morne Patate*, edited by Mark Hauser and Diane Wallman, 88–110. Gainesville: University Press of Florida, 2020.

Harrod, Ryan P, and Debra L Martin. "Bioarchaeological Case Studies of Slavery, Captivity, and Other Forms of Exploitation." In *The Archaeology of Slavery: A Comparative Approach to Captivity and Coercion*, edited by Lydia Wilson Marshall, 41–63. Carbondale: Southern Illinois University Press, 2015.

Harrower, Michael. *Water Histories and Spatial Archaeology: Ancient Yemen and the American West.* Cambridge: Cambridge University Press, 2016.

Hartman, Saidiya. *Scenes of Subjection: Terror, Slavery, and Self-Making in Nineteenth-Century America.* Race and American Culture. New York: Oxford University Press, 1997.

Hauser, Mark W. *An Archaeology of Black Markets: Local Ceramics and Economies in Eighteenth-Century Jamaica.* Gainesville: University Press of Florida, 2008.

———. "Everyday Economies and Ecologies of Plantation Life." Chap. 1 in *Archaeology in Dominica: Everyday Ecologies and Economies at Morne Patate*, edited by Mark Hauser and Diane Wallman, 1-30. Gainesville: University Press of Florida, 2020.

———. "The Infrastructure of Nature's Island: Settlements, Networks and Economy of Two Plantations in Colonial Dominica." *International Journal of Historical Archaeology* 19, no. 3 (2015): 601–22.

———. "A Political Ecology of Water and Enslavement: Water Ways in Eighteenth-Century Caribbean Plantations." *Current Anthropology* 58, no. 2 (2017): 227–56.

———. "Routes and Roots of Empire: Pots, Power, and Slavery in the 18th-Century British Caribbean." *American Anthropologist* 113, no. 3 (2011): 431–47.

Hauser, Mark W., and Douglas Armstrong. "The Archaeology of Not Being Governed: A Counterpoint to a History of Settlement of Two Colonies in the Eastern Caribbean." *Journal of Social Archaeology* 12, no. 3 (2012): 310–33.

Hauser, Mark W., and Christopher R. DeCorse. "Low-Fired Earthenwares in the African Diaspora: Problems and Prospects." *International Journal of Historical Archaeology* 7, no. 1 (2003): 67–98.

Hauser, Mark W, and Dan Hicks. "Colonialism and Landscape: Power, Materiality and Scales of Analysis in Caribbean Historical Archaeology." In *Envisioning Landscape: Situations and Standpoints in Archaeology and Heritage*, edited by Dan Hicks, Laura McAtackney, and Graham Fairclough, 251–74 Walnut Creek, CA: Left Coast Press, 2007.

Hauser, Mark W., C. Hofman, and Angus Martin. *Report of Work Done at the Playing Field, La Poterie, Grenada, January 2017.* Leiden, NL: Faculty of Archaeology, 2017.

Hauser, Mark W., and Kenneth G. Kelly. "Colonies without Frontiers: Inter-Island Trade in the Eighteenth and Nineteenth Century Caribbean." In *Islands at the Crossroads: Migration, Seafaring, and Interaction in the Caribbean*, edited by Antonio Curet and Mark Hauser, 41–56. Tuscaloosa: University of Alabama Press, 2011.

Hearn, Lafcadio. *Two Years in the French West Indies.* New York: Harper, 1903.

Heath, Barbara. "Yabbas, Monkeys, Jugs and Jars: An Historical Context for African-Caribbean Pottery on St. Eustatius." In *African Sites: Archaeology in the Caribbean*, edited by Jay Haviser, 196–220. Princeton, NJ: Markus Weiner Press, 1999.

Heath, Barbara J., and Amber Bennett. "'The Little Spots Allow'd Them': The Archaeological Study of African-American Yards." *Historical Archaeology* 34, no. 2 (2000): 38–55.

Herskovits, Melville J. "Wari in the New World." *Journal of the Royal Anthropological Institute of Great Britain and Ireland* 62 (1932): 23–37.

Hicks, Dan. *"The Garden of the World": An Historical Archaeology of Sugar Landscapes in the Eastern Caribbean.* Vol. 1632 of British Archaeological Reports International Series. 2007.

Higman, Barry W. *Jamaica Surveyed: Plantation Maps and Plans of the Eighteenth and Nineteenth Centuries.* Kingston, Jamaica: Institute of Jamaica, 1988.

———. *Jamaican Food: History, Biology, Culture.* Kingston, Jamaica: University of the West Indies Press, 2008.

———. *Montpelier, Jamaica: A Plantation Community in Slavery and Freedom, 1739–1912.* Kingston, Jamaica: University of the West Indies Press, 1998.

———. *Slave Populations of the British Caribbean, 1807–1834.* Johns Hopkins Studies in Atlantic History and Culture. Baltimore: Johns Hopkins University Press, 1984.

———. "The Sugar Revolution." *The Economic History Review* 53, no. 2 (2000): 213-–36.

Hofman, Corinne L., Alistair J. Bright, Arie Boomert, and Sebastiaan Knippenberg. "Island Rhythms: The Web of Social Relationships and Interaction Networks in the Lesser Antillean Archipelago between 400 BC and AD 1492." *Latin American Antiquity* 18, no. 3 (2007): 243–68.

Hofman, Corinne L., Menno Hoogland, Arie Boomert, and Angus Martin. "Colonial Encounters in the Southern Lesser Antilles: Indigenous Resistance, Material Transformations, and Diversity in an Ever-Globalizing World." In *Material Encounters and Indigenous Transformations in the Early Colonial Americas*, edited by C. Hofman and W. M. Keehan, 359–84. Leiden, NL: Brill, 2019.

Hofman, Corinne, Angus Mol, Menno Hoogland, and Roberto Valcárcel Rojas. "Stage of Encounters: Migration, Mobility and Interaction in the Pre-Colonial and Early Colonial Caribbean." *World Archaeology* 46, no. 4 (2014): 590–609.

Hofman, Corinne, and Menno Hoogland. "Beautiful Tropical Islands in the Caribbean Sea: Human Responses to Floods and Droughts and the Indigenous Archaeological Heritage of the Caribbean." In *Water & Heritage: Material, Conceptual and Spiritual Connections*, edited by Willem Willems and Henk P. J. van Schaik. The Hague: Sidestone Press, 2015.

Honychurch, Lennox. *Archaeology in Dominica.* Roseau, Dominica: Island Heritage Initiatives, 2011.

———. *The Archaeology of Dominica.* Roseau, Dominica: Island Heritage Initiatives, 2011.

———. "Chatoyer's Artist: Agostino Brunias and the Depiction of St Vincent." *Journal of the Barbados Museum and Historical Society* 50, no. 1 (2004): 104–28.

———. *The Dominica Story: A History of the Island*, 3rd ed. London: MacMillan Education, 1995.

———. *In the Forests of Freedom: The Fighting Maroons of Dominica*. Jackson: University Press of Mississippi, 2019.

———. "Slave Valleys, Peasant Ridges: Topography, Colour and Land Settlement on Dominica." Paper presented at the University of the West Indies Dominica Country Conference, Roseau, Dominica, January 7–10, 2001.

Hughes, Griffith. *The Natural History of Barbados: In Ten Books.* London: Printed for the Author, 1750.

Hulme, Peter. *Colonial Encounters: Europe and the Native Caribbean, 1492–1797.* London: Methuen, 1986.

———. "Meditation on Yellow: Trade and Indigeneity in the Caribbean." In *Economies of Representation, 1790–2000: Colonialism and Commerce*, edited by Leigh Dale and Helen Gilbert, 3–16. London: Ashgate, 2007.

———. *Remnants of Conquest: The Island Caribs and Their Visitors, 1877–1998.* New York: Oxford University Press, 2000.

Hulme, Peter, and Neil L. Whitehead. *Wild Majesty: Encounters with Caribs from Columbus to the Present Day: An Anthology.* Oxford: Oxford University Press, 1992.

Hunt, Nadine. "Contraband, Free Ports, and British Merchants in the Caribbean World, 1739–1772." *Diacronie. Studi Di Storia Contemporanea*, no. 13, 1: 1–12 (2013).

Inda, Xavier, and Renato Rosaldo. "Tracking Global Flows." In *The Anthropology of Globalization*, edited by Xavier J. Inda and Renato Rosaldo, 1–46. London: Blackwell, 2002.

Ingold, Tim. "One World Anthropology." *HAU: Journal of Ethnographic Theory* 8, nos. 1–2 (2018): 158–71.

———. "Toward an Ecology of Materials." *Annual Review of Anthropology* 41 (2012): 427–42.

Ingram, Kenneth. *Manuscripts Relating to Commonwealth Caribbean Countries in United States and Canadian Repositories.* St. Lawrence, Barbados: Caribbean Universities Press, 1975.

Innis, Donald Q. "The Efficiency of Jamaican Peasant Land Use." *Canadian Geographer/Le Géographe canadien* 5, no. 2 (1961): 19–23.

Jefferys, Thomas. *The Natural and Civil History of the French Dominions in North and South America*. London: Printed for Thomas Jefferys, 1761.

———. *The West Indies Exhibiting the English, French, Spanish, Dutch & Danish Settlements*. London: Printed for T. Jefferys, 1760.

———. *The West-India Atlas: Or, a Compendious Description of the West-Indies*. London: Robert Sayer and John Bennett, 1775.

Jeremie, John. "More Facts Showing the Safety of Emancipation." *The Anti Slavery Record* 1 (1835): 41–43.

Johnson, Allen. "The Passage of the Sugar Act." *William and Mary Quarterly* 16, no. 4 (1959): 507–14.

Johnson, Matthew. *Housing Culture: Traditional Architecture in an English Landscape*. Abingdon: Routledge, 2003. First published 1993 by UCL Press.

Johnson, Matthew. *English Houses 1300–1800: Vernacular Architecture, Social Life*. Abingdon: Routledge, 2014. First published 2010 by Pearson Education Limited.

Johnston, J. R. V. *The Stapleton Sugar Plantations of the Leeward Islands.* Manchester: Manchester University Press, 1965.

Joseph, Joe. "'. . . All of Cross'—African Potters, Marks, and Meanings in the Folk Pottery of the Edgefield District, South Carolina." *Historical Archaeology* 45, no. 2 (2011): 134–55.

Karras, Alan L. "Caribbean Contraband, Slave Property, and the State, 1767–1792." *Pennsylvania History: A Journal of Mid-Atlantic Studies* 64 (1997): 250–69.

———. *Smuggling: Contraband and Corruption in World History*. New York: Rowman & Littlefield, 2009.

Kastor, Peter J., and François Weil. *Empires of the Imagination: Transatlantic Histories of the Louisiana Purchase*. Charlottesville: University of Virginia Press, 2009.

Keegan, William F. "Lucayan Settlement Patterns and Recent Coastal Changes in the Bahamas." In *Paleoshorelines and Prehistory: An Investigation of Method*, edited by Lucille Lewis Johnson and Melanie Stright, 5–14. London: CRC Press, 1991.

Keegan, William F., and Corinne L. Hofman. *The Caribbean before Columbus*. Oxford: Oxford University Press, 2016.

Kelly, Kenneth G. "La Vie Quotidience: Historical Archaeological Approaches to the Plantation Era in Guadeloupe, French West Indies." In *French Colonial Archaeology in the Southeast and Caribbean*, edited by Kenneth Kelly and Meredith Hardy, 189–205. Gainesville: University Press of Florida, 2011.

Kelly, Kenneth G., Mark W. Hauser, Christophe Descantes, and Michael Glascock. "Compositional Analysis of French Colonial Ceramics: Implications for Understanding Trade and Exchange." *Journal of Caribbean Archaeology* 8, no. 85 (2008): 107.

Kiple, Kenneth. *The Caribbean Slave: A Biological History.* Cambridge: Cambridge University Press, 1984.

Klooster, Wim. *Illicit Riches: Dutch Trade in the Caribbean: 1648–1795.* Leiden, NL: KITLV Press, 1998.

Knappett, Carl, Tim Evans, and Ray Rivers. "Modelling Maritime Interaction in the Aegean Bronze Age." *Antiquity* 82, no. 318 (2008): 1009–24.

Kosiba, Steve, and R. Alexander Hunter. "Fields of Conflict: A Political Ecology Approach to Land and Social Transformation in the Colonial Andes (Cuzco, Peru)." *Journal of Archaeological Science* 84 (2017): 40–53.

Kriz, Kay Dian. *Slavery, Sugar, and the Culture of Refinement: Picturing the British West Indies, 1700–1840.* New Haven: Yale University Press, 2008.

Labat, Jean Baptiste. *The Memoirs of Père Labat, 1693–1705.* 1722. Translated and Abridged by John Eadon. London: Frank Cass & Co. Ltd., 1970.

———. *Nouveau Voyage Aux Isles De L'amérique*. Vol. II. Paris: Chez Pierre-François Giffart.

Laffoon, Jason E., Reniel Rodríguez Ramos, Luis Chanlatte Baik, Yvonne Narganes Storde, Miguel Rodríguez Lopez, Gareth R. Davies, and Corinne L. Hofman. "Long-Distance Exchange in the Precolonial Circum-Caribbean: A Multi-Isotope Study of Animal Tooth Pendants from Puerto Rico." *Journal of Anthropological Archaeology* 35 (2014): 220–33.

Lafleur, Gérard. *Les Caraïbes Des Petites Antilles.* Paris: Karthala, 1992.

Lane, Paul. "Possibilities for a Postcolonial Archaeology in Sub-Saharan Africa: Indigenous and Usable Pasts." *World Archaeology* 43, no. 1 (2011): 7–25.

Law, Robin. "Slave-Raiders and Middlemen, Monopolists and Free-Traders: The Supply of Slaves for the Atlantic Trade in Dahomey c. 1715–1850." *Journal of African History* 30, no. 1 (1989): 45–68.

Lenik, Stephan. "Carib as a Colonial Category: Comparing Ethnohistoric and Archaeological Evidence from Dominica, West Indies." *Ethnohistory* 59, no. 1 (2012): 79–107.

Lenik, Stephan T. "Frontier Landscapes, Missions, and Power: A French Jesuit Plantation and Church at Grand Bay, Dominica (1747–1763)." Ph.D. diss., Syracuse University, 2010.

Leone, Mark P. *The Archaeology of Liberty in an American Capital: Excavations in Annapolis.* Berkeley: University of California Press, 2005.

Li, Tania Murray. "Beyond 'the State' and Failed Schemes." *American Anthropologist* 107, no. 3 (2005): 383–94.

———. *Land's End: Capitalist Relations on an Indigenous Frontier.* Durham, NC: Duke University Press, 2014.

Ligon, Richard. *A True and Exact History of the Island of Barbados.* London: Printed for Humphrey Moseley, 1657.

Logan, Amanda. *The Scarcity Slot: Excavating Histories of African Food Security.* Berkeley: University of California Press, 2020.

Logan, Amanda L., Daryl Stump, Steven T. Goldstein, Emuobosa Akpo Orijemie, and M. H. Schoeman. "Usable Pasts Forum: Critically Engaging Food Security." *African Archaeological Review* 36, no. 3 (2019): 419–38.

Long, Edward. *The History of Jamaica: Or, General Survey of the Antient and Modern State of the Island.* Vol. 2. London: T. Lowndes, 1774.

Longin, Félix. *Voyage À La Guadeloupe: Œuvre Posthume.* Le Mans: Mannoyer, 1848.

Loren, Diana DiPaola. "Creating Social Distinction: Articulating Colonial Policies and Practices along the 18th-Century Louisiana/Texas Frontier." Ph.D. diss., State University of New York, Binghamton, 1999.

Losier, Catherine. "Approvisionner Cayenne Au Cours De L'ancien Régime: Étude Archéologique Et Historique De L'économie Et Du Réseau Commercial D'une Colonie Marginale, La Guyane (XVIIe et XVIIIe Siècle)." Ph.D. diss., Université Laval, 2012.

———. "Bouteilles Et Flacons: Les Contenants Utilitaires Français Du Début Du XVIIIe Siècle Au Début Du XIXe Siècle. Aspects Techniques Et Sociaux." *Journal of Glass Studies* 54 (2012): 151–79.

Lucero, Lisa, and Barbara Fash. *Precolumbian Water Management: Ideology, Ritual, and Power.* Tucson: University of Arizona Press, 2006.

MacGregor, David Roy. *Merchant Sailing Ships: Sovereignty of Sail, 1775-1815.* London: Naval Institute Press, 1988.

Marshall, Bernard. *Slavery, Law and Society in the British Windward Islands 1763–1823: A Comparative Study.* Kingston, Jamaica: Arawak Publications, 2007.

Marshall, Woodville K. "Provision Ground and Plantation Labour in Four Windward Islands." In *The Slaves' Economy: Independent Production by Slaves in the Americas*, edited by Ira Berlin and Philip Morgan, 48–67. London: Frank Cass, 1991.

McCusker, John J. "Money and Exchange in Europe and America, 1600–1775: A Handbook." Chapel Hill: University of North Carolina Press, 1978.

McDonald, Roderick. "Sex, Power, and Slavery in Late Eighteenth-Century Dominica." Association of Caribbean Historians, Martinique, May 11–14, 2014.

McGregor, Duncan F. M. "An Investigation of Soil Status and Landuse on a Steeply Sloping Hillside, Blue Mountains, Jamaica." *Singapore Journal of Tropical Geography* 9, no. 1 (1989): 60–71.

McIntosh, Roderick. *Ancient Middle Niger: Urbanism and the Self-Organizing Landscape.* Cambridge: Cambridge University Press, 2005.

McKey, Doyle, Stéphen Rostain, José Iriarte, Bruno Glaser, Jago Jonathan Birk, Irene Holst, and Delphine Renard. "Pre-Columbian Agricultural Landscapes, Ecosystem

Engineers, and Self-Organized Patchiness in Amazonia." *Proceedings of the National Academy of Sciences* 107, no. 17 (2010): 7823–28.
McKittrick, Katherine. "Plantation Futures." *Small Axe* 17, no. 3 (2013): 1–15.
McKusick, Marshall B. "Aboriginal Canoes in the West Indies." In *Papers in Caribbean Anthropology*, edited by Sidney Mintz. New Haven: Yale University, Department of Anthropology, 1960.
McNeill, John, and Peter Engelke. *The Great Acceleration: An Environmental History of the Anthropocene since 1945*. Cambridge: Belknap Press, 2016.
Meniketti, Marco. *Sugar Cane Capitalism and Environmental Transformation: An Archaeology of Colonial Nevis, West Indies.* Tuscaloosa: University of Alabama Press, 2015.
———. "Sugar Mills, Technology, and Environmental Change: A Case Study of Colonial Agro-Industrial Development in the Caribbean." *IA. The Journal of the Society for Industrial Archeology* 32, no. 1 (2006): 53–80.
Menon, Kalyani Devaki. "Dissonant Subjects: Women in the Hindu Nationalist Movement in India." Ph.D. diss, Syracuse University, 2003.
Meskell, Lynn, and Robert W. Preucel. "Knowledges." In *A Companion to Social Archaeology*, edited by Lynn Meskell and Robert W Preucel, 3–22. Malden, MA: Blackwell, 2008.
Miller, George. "Marketing Ceramics in North America: An Introduction." *Winterthur Portfolio* 19, no. 1 (1984): 1–5.
———. "A Revised Set of CC Index Values for Classification and Economic Scaling of English Ceramics from 1787 to 1880." *Historical Archaeology* 25, no. 1 (1991): 1–25.
Miller, George L., Patricia Samford, Ellen Shlasko, and Andrew Madsen. "Telling Time for Archaeologists." *Northeast Historical Archaeology* 29, no. 1 (2013): 1–22.
Miller, Joseph. *The Problem of Slavery as History: A Global Approach*. New Haven, CT: Yale University Press, 2012.
Mills, Barbara J. "Communities of Consumption: Cuisines as Constellated Networks of Situated Practice." In *Knowledge in Motion: Constellations of Learning across Time and Place*, edited by Andrew P. Roddick and Ann B. Stahl, 247–70. Tucson: University of Arizona Press, 2016.
Mintz, Sidney. *Caribbean Transformations*. New York: Columbia University Press, 1989.
———. "Houses and Yards among Caribbean Peasantries." In *Perspectives on the Caribbean: A Reader in Culture, History, and Representation*, edited and introduced by Philip W. Scher, 9–24. Malden, MA: Blackwell, 2010.
———. *Sweetness and Power: The Place of Sugar in Modern History.* New York: Viking: Elisabeth Sifton Books, 1985.
Mintz, Sidney, and Douglas Hall. *The Origins of the Jamaican Internal Marketing System*. Yale Publications in Anthropology. Vol. 57. New Haven, CT: Yale University Press, 1960.
Mintz, Sidney, and Richard Price. *The Birth of African American Culture: An Anthropological Approach*. Boston: Beacon, 1992.

Mitchell, Don. "New Axioms for Reading the Landscape: Paying Attention to Political Economy and Social Justice." In *Political Economies of Landscape Change: Places of Integrative Power*, edited by James L. Westcoat Jr. and Douglas M. Johnston, 29–50. Dordrecht, NL: Springer, 2008.

Mitchell, Timothy. *Rule of Experts: Egypt, Techno-Politics, Modernity.* Berkeley: University of California Press, 2002.

Moitt, Bernard. *Women and Slavery in the French Antilles: 1635–1848.* Bloomington: Indiana University Press, 2001.

Moore, Jason. "The Capitalocene, Part I: On the Nature and Origins of Our Ecological Crisis." *Journal of Peasant Studies* 44, no. 3 (2017): 594–630.

———. "Sugar and the Expansion of the Early Modern World-Economy: Commodity Frontiers, Ecological Transformation, and Industrialization." *Review (Fernand Braudel Center)* 23, no. 3 (2000): 409–33.

Morehart, Christopher T. "Mapping Ancient Chinampa Landscapes in the Basin of Mexico: A Remote Sensing and GIS Approach." *Journal of Archaeological Science* 39, no. 7 (2012): 2541–51.

Morehart, Christopher, and Shanti Morell-Hart. "Beyond the Ecofact: Toward a Social Paleoethnobotany in Mesoamerica." *Journal of Archaeological Method and Theory* 22, no. 2 (2015): 483–511.

Moreton, J. B. *West India Customs and Manners: Containing Strictures on the Soil, Cultivation, Produce, Trade, Officers and Inhabitants: with the Method of Establishing and Conducting a Sugar Plantation. To Which Is Added the Practice of Training New Slaves. By J. B. Moreton, Esq. A New Edition.* London: printed for J. Parsons; W. Richardson; H. Gardner; and J. Walter, 1793.

Morris, Sir Daniel. *Report of the West India Royal Commission: With Subsidiary Report.* London: Printed for Her Majesty's Stationery Office, 1897.

Morris, Thomas D. *Southern Slavery and the Law, 1619–1860.* Chapel Hill: University of North Carolina Press, 1996.

Morrison, Kathleen D. "Archaeologies of Flow: Water and the Landscapes of Southern India Past, Present, and Future." *Journal of Field Archaeology* 40, no. 5 (2015): 560–80.

———. "Rethinking Intensification: Studies in Human Ecology and Adaptation." In *Seeking a Richer Harvest*, edited by Tina L. Thurston and Christopher T. Fisher, 235–47. Boston: Springer, 2007.

Morrison, Kathleen D., and Mark W. Hauser. "Risky Business: Rice and Inter-Colonial Dependencies in the Indian and Atlantic Oceans." *Atlantic Studies* 12, no. 3 (2015): 371–92.

Mrozowski, Stephen. "Colonization and the Commodification of Nature." *International Journal of Historical Archaeology* 3, no. 3 (1999): 153–66.

Mrozowski, Stephen A., Maria Franklin, and Leslie Hunt. "Archaeobotanical Analysis and Interpretations of Enslaved Virginian Plant Use at Rich Neck Plantation (44WB52)." *American Antiquity* 73, no. 4 (2008): 699–728.

Mrozowski, Stephen, Katherine Hayes, and Anne Hancock. "The Archaeology of Sylvester Manor." *Northeast Historical Archaeology* 36, no. 1 (2007): 3.

Mulcahy, Matthew. *Hurricanes and Society in the British Greater Caribbean, 1624–1783.* Baltimore: Johns Hopkins University Press, 2010.

Murdoch, D. H. "Land Policy in the Eighteenth-Century British Empire: The Sale of Crown Lands in the Ceded Islands, 1763–1783." *Historical Journal* 27, no. 3 (1984): 549–74.

Murphy, Tessa. "The Creole Archipelago: Colonization, Experimentation, and Community in the Southern Caribbean, c. 1700–1796." Ph.D. diss., University of Chicago, 2016.

Murphy, Tessa, and Mark Hauser. "Dominica as an Evolving Landscape: Evidence of Changing Social, Political, and Economic Organization in the Eighteenth Century." Chap. 2 in *Archaeology in Dominica: Everyday Ecologies and Economies at Morne Patate*, edited by Mark Hauser and Diane Wallman, 31–47. Gainesville: University Press of Florida, 2020.

Napolitano, Matthew F., Robert J. DiNapoli, Jessica H. Stone, Maureece J. Levin, Nicholas P. Jew, Brian G. Lane, John T. O'Connor, and Scott M. Fitzpatrick. "Reevaluating Human Colonization of the Caribbean Using Chronometric Hygiene and Bayesian Modeling." *Science Advances* 5, no. 12 (2019). DOI: 10.1126/sciadv.aar7806.

Nicholls, Alford. *Report on Yaws in Tobago, Grenada, St. Vincent, St. Lucia and the Leeward Islands.* London: Eyre and Spottiswoode, 1894.

Nicholson, William. *A Dictionary of Practical and Theoretical Chemistry: With Its Application to the Arts and Manufactures, and to the Explanation of the Phaenomena of Nature . . .: With Plates and Tables.* London: Printed for Richard Phillips, No. 6, Bridge-Street, 1808.

Nickolls, Robert. *Letter to the Treasurer.* London: James Phillips, 1788.

Niddrie, David. "Eighteenth-Century Settlement in the British Caribbean." *Transactions of the Institute of British Geographers* (1966): 67–80.

Nijland, H. J., and S. El Guindi. "Crop Yields, Watertable Depth, and Soil Salinity in the Nile Delta, Egypt." In *Annual Report 1983*, *International Institute for Land Reclamation and Improvement*, 19–29. Wageningen, NL: International Institute for Land Reclamation and Improvement, 1984.

Nixon, Rob. *Slow Violence and the Environmentalism of the Poor.* Cambridge, MA: Harvard University Press, 2011.

Nordin, Jonas M. "Metals of Metabolism: The Construction of Industrial Space and the Commodification of Early Modern Sápmi." In *Historical Archaeologies of Capitalism*, edited by Mark P. Leone and Jocelyn E. Knauf, 249–72. Cham, Switzerland: Springer International, 2015.

Normand, Eric, and Sebastien Pauly. "Archéologie et Raffinage du Sucre à La Rochelle aux XVIIe et XVIIIe Siècles." *Archéopages* no. 31 (2011): 46–51.

Ó Gráda, Cormac. "The Ripple That Drowns? Twentieth-Century Famines in China and India as Economic History." *Economic History Review* 61, no. S1 (2008): 5–37.

Oas, Sarah E., and Mark W. Hauser. "The Political Ecology of Plantations from the Ground Up." *Environmental Archaeology* 23, no. 1 (2018): 4–12.

Ober, Frederick Albion. *Camps in the Caribbees: The Adventures of a Naturalist in the Lesser Antilles.* Edinburgh: D. Douglas, 1880.

———. *A Guide to the West Indies, Bermuda and Panama.* New York: Dodd, Mead, 1913.

"Obituary." *The Gentleman's Magazine, New Series* 39 (1853): 324.

Oliver, José R. *Caciques and Cemí Idols: The Web Spun by Taíno Rulers between Hispaniola and Puerto Rico.* Tuscaloosa: University of Alabama Press, 2009.

———. "The Proto-Taíno Monumental *Cemís* of Caguana: A Political-Religious 'Manifesto.'" In *Ancient Borinquen: Archaeology and Ethnohistory of Native Puerto Rico*, edited by Peter E. Siegel. Tuscaloosa: University of Alabama Press, 2005.

Olwig, Kenneth. "Recovering the Substantive Nature of Landscape." *Annals of the Association of American Geographers* 86, no. 4 (1996): 630–53.

Orser, Charles E. "Archaeological Approaches to New World Plantation Slavery." *Archaeological Method and Theory* 2 (1990): 111–54.

———. *An Archaeology of the English Atlantic World, 1600–1700.* Cambridge: Cambridge University Press, 2018.

———. "On Plantations and Patterns." *Historical Archaeology* 23, no. 2 (1989): 28–40.

Pagán-Jiménez, Jaime. "Human-Plant Dynamics in the Precolonial Antilles: A Synthetic Update." In *The Oxford Handbook of Caribbean Archaeology*, edited by William F. Keegan, Corinne L. Hofman, and Reniel Rodríguez Ramos, 391–406. New York: Oxford University Press, 2013.

Pantoja, Alexis Rives, Alberto E. García, and Gerardo Izquierdo Díaz. "El fenómeno de El Niño-la oscilación del sur-y la Arqueología del occidente de Cuba." *Cuba Arqueológica: Revista digital de Arqueología de Cuba y el Caribe*, no. 3 (June 2011): 5–69.

Parliament. *The Parliamentary Debates: Comprising the Period from the Eleventh Day of February to the Second Day of March 1896.* Vol. 37. London: Waterlow & Sons Limited, 1896.

Parliament, ed. *Debates in Parliament on the Resolutions and Bill for the Abolition of Slavery in the British Colonies* London: 162, Picadilly, 1834 (printed by Maurice & Co.).

Parliament, House of Commons. *Papers Presented to the House of Commons On the 7th May 1804, Respecting the Slave Trade.* London: Parliament, House of Commons, 1804.

Parliament, House of Commons. *Papers Relating to Her Majesty's Colonial Possessions, Reports for 1883 and 1884.* Vol. 52 of Accounts and papers, 1884–85. London: Eyre and Spotisswoode, 1885.

Parliament, House of Commons. *Report of The Lords of the Committee of Council appointed for the Consideration of all Matters relating to Trade and Foreign Plantations; Part II, Appendix Dominica A.* London: Parliament, 1789.

Parry, John H. "Plantation and Provision Ground: An Historical Sketch of the Introduction of Food Crops into Jamaica." *Revista de historia de America*, no. 39 (1955): 1–20.

Patterson, Orlando. *Slavery and Social Death: A Comparative Study.* Cambridge, MA: Harvard University Press, 1982.

Pattullo, Polly. *Your Time Is Done Now: Slavery, Resistance, and Defeat: The Maroon Trials of Dominica (1813–1814).* London: Papilliote Press, 2015.

Pearson, Michael Parker. *The Archaeology of Death and Burial.* Stroud, UK: Sutton Publishing, 1999.

Pedley, Mary. "Map Wars: The Role of Maps in the Nova Scotia/Acadia Boundary Disputes of 1750." *Imago Mundi* 50 (1998): 96–104.

Pensom, L. M. *The Colonial Agents of the British West Indies.* London: University of London Press, 1928.

Pérotin-Dumon, Anne. "Cabotage, Contraband, and Corsairs: The Port Cities of Guadeloupe and Their Inhabitants, 1650–1800." In *Atlantic Port Cities: Economy, Culture, and Society in the Atlantic World, 1650–1850*, edited by Franklin W. Knight and Peggy K. Liss, 58–86. Knoxville: University of Tennessee Press, 1991.

———. "Commerce et travail dans les villes coloniales des Lumières: Basse-Terre et Pointe-à-Pitre, Guadeloupe." *Revue française d'histoire d'outre-mer* 75, no. 278 (1988): 31–78.

———. *La ville aux îles, la ville dans l'île: Basse-Terre et Pointe-à-Pitre, Guadeloupe, 1650–1820.* Paris: Karthala, 2000.

Peterson, V. "Rewriting (Global) Political Economy as Reproductive, Productive, and Virtual (Foucauldian) Economies." *International Feminist Journal of Politics* 4, no. 1 (2002): 1–30.

Petitjean-Roget, Henry. "Les Pétroglyphes ses Petites Antilles: Médiateurs entre la Sécheresse et L'inondation." *International Newsletter of Rock Art* 50 (2008): 12–18.

———. "Notes on Ancient Caribbean Art and Mythology." In *The Indigenous People of the Caribbean*, edited by Samuel M Wilson, 100–08. Gainesville: University Press of Florida, 1997.

Petrucci, Jean Ferdinand. "Les Poteries Et Les Potiers De Vallauris 1501–1945. Tome I." Thèse de doctorat, University of Paris, 1999.

Pezzarossi, Guido. "Camouflaging Consumption and Colonial Mimicry: The Materiality of an Eighteenth and Nineteenth-Century Nipmuc Household." *International Journal of Historical Archaeology* 18, no. 1 (2014): 146–74.

Pitman, Frank. *The Development of the British West Indies, 1700–1763.* New Haven, CT: Yale University Press, 1917.

Porter, George Richardson. *The Nature and Properties of the Sugar Cane; with Practical Directions for the Improvement of Its Culture and the Manufacture of Its Products.* London: Smith, Elder, and Co., 1830.

Price, Sally. "Always Something New: Changing Fashions in a 'Traditional Culture.'" In *Crafting Gender, Women and Folk Art in Latin America and the Caribbean*, edited by Eli Bartra, 17–34. Durham, NC: Duke University Press, 2003.

———. "When Is a Calabash Not a Calabash?" *New West Indian Guide* 56, no. 1/2 (1982): 69–82.

Priestley, Joseph. *Directions for Impregnating Water with Fixed Air: In Order to Communicate to It the Peculiar Spirit and Virtues of Pyrmont Water, and Other Mineral Waters of a Similar Nature.* London: J. Johnson, 1772.

Quinlan, Marsha B. *From the Bush: The Front Line of Health Care in a Caribbean Village (Case Studies in Cultural Anthropology).* Belmont, CA: Wadsworth, 2004.

Quinlan, Marsha B., and Robert Quinlan. "Eating and Healing: Traditional Food as Medicine." In *Eating and Healing: Traditional Food as Medicine*, edited by A. Pieroni and L. Price, 197–212. Binghamton, NY: Haworth Press, 2006.

Raleigh, Walter, Sir. *Sir Walter Ralegh's Discoverie of Guiana*. 1596. Reprint, edited by Joyce Lorimer. Hakluyt Society, Series III, Volume 15. Aldershot, UK: Ashgate Publishing, 2006.

Ramos, Reniel Rodríguez. *Rethinking Puerto Rican Precolonial History.* Tuscaloosa: University of Alabama Press, 2010.

Ramos, Reniel Rodríguez, Jaime R. Pagán-Jiménez, and Corinne L. Hofman. "The Humanization of the Insular Caribbean." In *The Oxford Handbook of Caribbean Archaeology*, edited by William E. Keegan, Corinne L. Hofman, and Renial Rodríguez Ramos, 126–40. Oxford: Oxford University Press, 2013.

Ranston, Jackie. *Belisario: Sketches of Character. A Historical Biography of a Jamaican Artist.* Kingston, Jamaica: Mill Press, 2008.

Rasmussen, Mattias Borg. *Andean Waterways: Resource Politics in Highland Peru*. Seattle: University of Washington Press, 2015.

Ravoire, F., and F. Renel. "Note Sur des Céramiques de Raffinage du Sucre Découvertes à Paris (Paris 2e Arr.). Et à Roissy-En-France (Val D'oise) (Fin XVIIIe – Début XIXe S.)." *Revue archéologique d'Île-de-France*, no. 4 (2011): 317–24.

Redman, C. L., and A. P. Kinzig. "Resilience of Past Landscapes: Resilience Theory, Society, and the Longue Durée." *Conservation Ecology* 7, no. 1 (2003): 14–33.

Reeves, Matthew. "An Archaeological Case Study from Two Slave Settlements." In *Out of Many, One People: The Historical Archaeology of Colonial Jamaica*, edited by James Delle, Mark W. Hauser, and Douglas Armstrong, 183–210. Tuscaloosa: University of Alabama Press, 2011.

Reifschneider, Meredith. "Enslavement and Institutionalized Care: The Politics of Health in Nineteenth-Century St Croix, Danish West Indies." *World Archaeology* 50, no. 3 (2018): 494–511. https://doi.org/10.1080/00438243.2018.1459204.

Rennard, Joseph. *Les Caraïbes. La Guadeloupe, 1635–1656*: *Histoire des Vingt Premières Années de la Colonisation de la Guadeloupe, d'après les Relations du R. P. Breton, Publiées par L'abbé Joseph Rennard.* Paris: G. Ficker, 1929.

Resident. *Sketches and Recollections of the West Indies.* London: Smith, Elder & Company, 1828.

Richard, François G. *Reluctant Landscapes: Historical Anthropologies of Political Experience in Siin, Senegal.* Chicago: University of Chicago Press, 2018.

Richardson, Bonham C. *Igniting the Caribbean's Past: Fire in British West Indian History.* Chapel Hill: University of North Carolina Press, 2004.

———. *The Caribbean in the Wider World, 1492–1992: A Regional Geography.* Cambridge: Cambridge University Press, 1992.

Riviere, Alix. "Bittersweet Childhoods: Enslaved Youth in Nineteenth-Century Louisiana and Martinique." Ph.D. diss., Tulane University, 2019.

Robbins, Paul, and Brian Marks. "Assemblage Geographies." In *The Sage Handbook of Social Geographies*, edited by Susan J. Smith, Rachel Pain, Sallie A. Marston, and John Paul Jones III, 176–94. London: Sage, 2010.

Robertson, Robert. *A Supplement to the Detection of the State and Situation of the Present Sugar Planters.* London: printed for J. Wilford, behind the Chapter-House in St Paul's Church-Yard, 1733.

Robin, Cynthia. *Everyday Life Matters: Maya Farmers at Chan.* Gainesville: University Press of Florida, 2013.

Rochefort, César de. *The History of the Caribby Islands, Viz., Barbados. . . .* Translated by John Davies. London: Printed by J.M. for T. Dring and J. Starkey, 1666.

Rochmonteix, Le P. Camille de. *Le Père Antoine Lavalette à La Martinique: d'après Beaucoup de Documents Inédits.* Paris: Librairie Alphonse Picard et Fils, 1907.

Roddick, A. P. "Scalar Relations: A Juxtaposition of Craft Learning in the Lake Titicaca Basin." In *Knowledge in Motion: Constellations of Learning across Time and Place*, edited by Andrew P. Roddick and Ann B. Stahl, 126–54. Tucson: University of Arizona Press, 2016.

Ross, Ann, William Keegan, Michael Pateman, and Colleen Young. "Faces Divulge the Origins of Caribbean Prehistoric Inhabitants." *Scientific Reports* 10, no. 147 (2020). https://doi.org/10.1038/s41598-019-56929-3

Rostain, Stéphen. "Agricultural Earthworks on the French Guiana Coast." In *The Handbook of South American Archaeology*, edited by Helaine Silverman and William H. Isbell, 217–33. New York: Springer, 2008.

———. *Islands in the Rainforest: Landscape Management in Pre-Columbian Amazonia.* Translated by Michelle Eliott. 2013. Reprint, London: Routledge, 2016.

Roth, Rodris. *Tea Drinking in 18th-Century America: Its Etiquette and Equipage.* Vol. 225 of Bulletin (United States National Museum). Washington, DC: Smithsonian Institution, 1961.

Rouse, Irving. *Migrations in Prehistory: Inferring Population Movement from Cultural Remains.* New Haven, CT: Yale University Press, 1986.

Rudd, A. V., and C. W. Chardon. "The Effects of Drainage on Cane Yields as Measured by Watertable Heights in the Macknade Mill Area." Proceedings of the 44th Conference of the Queensland Society of Sugar Cane Technology, Brisbane, Australia, 1977.

Rupert, Linda M. *Creolization and Contraband: Curaçao in the Early Modern Atlantic World.* Athens: University of Georgia Press, 2012.

Ryzewski, Krysta. "A Thorny Endeavor: Historical Archaeology and Diachronic, Regional Landscape Survey in the Caribbean Lesser Antilles." In *Regional Approaches to Social and Political Complexity*, edited by Alex Knodell and Thomas Leppard, 225–45. Bristol: Equinox Publishing, 2018.

Ryzewski, Krysta, and John F. Cherry. "Struggles of a Sugar Society: Surveying Plantation-Era Montserrat, 1650–1850." *International Journal of Historical Archaeology* 19, no. 2 (2015): 356–83.

Salisbury, Roderick B. "Engaging with Soil, Past and Present." *Journal of Material Culture* 17, no. 1 (2012): 23–41.

Samford, Patricia. *Subfloor Pits and the Archaeology of Slavery in Colonial Virginia.* Tuscaloosa: University of Alabama Press, 2007.

Samson, A. V. M., C. A Crawford, M. L. P. Hoogland, and Corine L. Hofman. "Resilience in Pre-Columbian Caribbean House-Building: Dialogue between Archaeology and Humanitarian Shelter." *Human Ecology* 43, no. 2 (2015): 323–37.

Saunders, Robert, and Jeremy Warford. *Village Water Supply: Economics and Policy in the Developing World.* A World Bank Research Publication. Baltimore: Johns Hopkins University Press, 1976.

Sayers, Daniel O. *A Desolate Place for a Defiant People: The Archaeology of Maroons, Indigenous Americans, and Enslaved Laborers in the Great Dismal Swamp.* Gainesville: University Press of Florida, 2014.

Scarborough, Vernon. *The Flow of Power: Ancient Water Systems and Landscapes.* Santa Fe: School of American Research, 2003.

Scarborough, Vernon, and Lisa Lucero. "The Non-Hierarchical Development of Complexity in the Semitropics: Water and Cooperation." *Water History* 2, no. 2 (2010): 185–205.

Scheid, Dwayne Louis. "The Political Economy of Ceramic Production in Barbados: From Plantation Industry to Craft Production." Ph.D. diss., Syracuse University, 2015.

Schiffer, Michael B. *Formation Processes of the Archaeological Record.* Salt Lake City: University of Utah Press, 1987.

Schnakenbourg, Christian. *Histoire de l'industrie sucrière en Guadeloupe aux XIXe et XXe siècles. Tome I: La Crise Du Système Esclavagiste, 1835–1847.* Paris: L'Harmattan, 1980.

Schroeder, Hannes, Jay B. Haviser, and T. Douglas Price. "The Zoutsteeg Three: Three New Cases of African Types of Dental Modification from Saint Martin, Dutch Caribbean." *International Journal of Osteoarchaeology* 24, no. 6 (2014): 688–96.

Schubert, Carlos, and B. J. Szabo. "Uranium-Series Ages of Pleistocene Marine Deposits on the Islands of Curacao and La Blanquilla, Caribbean Sea." *Geologie en Mijnbouw* 57, no. 2 (1978): 325–32.

Schwalbe, Emily A. "Landscapes of Movement on Lowcountry Rice Plantations." *Journal of Social Archaeology* 20, no. 3 (2020): 268–91.

Scott, James C. *Weapons of the Weak: Everyday Forms of Peasant Resistance.* New Haven, CT: Yale University Press, 1985.

Scott, Michael. *Tom Cringle's Log.* London: Walter Scott, 1890.

Shearn, Isaac. "Pre-Columbian Settlement Trajectories in Eastern Dominica: Report on Initial Radiocarbon Age Estimates." *Journal of Island and Coastal Archaeology* 13, no. 1 (2018): 132–46.

Sheridan, Richard. "The Commercial and Financial Organization of the British Slave Trade, 1750–1807." *Economic History Review* 11, no. 2 (1958): 249–63.

———. "The Domestic Economy." *Colonial British America: Essays in the New History of the Early Modern Era*, edited by Jack P. Greene and J. R. Pole, 43–85. Baltimore: Johns Hopkins University Press, 1984.

———. "The Molasses Act and the Market Strategy of the British Sugar Planters." *Journal of Economic History* 17, no. 1 (1957): 62–83.

Siegel, Peter E., John G. Jones, Deborah M. Pearsall, Nicholas P. Dunning, Pat Farrell, Neil A. Duncan, Jason H. Curtis, and Sushant K. Singh. "Paleoenvironmental Evidence for First Human Colonization of the Eastern Caribbean." *Quaternary Science Reviews* 129 (2015): 275–95.

Singleton, Theresa. *Slavery behind the Wall: An Archaeology of a Cuban Coffee Plantation*. Gainesville: University Press of Florida, 2015.

Sivaramakrishnan, Kalyanakrishnan. *Modern Forests: Statemaking and Environmental Change in Colonial Eastern India*. Palo Alto: Stanford University Press, 1999.

"Slavery Images: A Visual Record of the African Slave Trade and Slave Life in the Early African Diaspora." Accessed March 20, 2017. http://www.slaveryimages.org.

Slave Voyages: The Trans-Atlantic Slave Trade Database, http://www.slavevoyages.org.

Sloane, Hans. *A Voyage to the Islands Madera, Barbados, Nieves, S. Christophers and Jamaica . . .* Vols. I and II. London: printed by B. M. for the author, 1707–1725.

Smith, Adam. *An Inquiry into the Nature and Cause of the Wealth of Nations: Selections*. Chicago: H. Regnery, 1953.

Smith, Adam T. *The Political Machine: Assembling Sovereignty in the Bronze Age Caucasus*. Princeton, NJ: Princeton University Press, 2015.

Smith, Adam T. *The Political Landscape: Constellations of Authority in Early Complex Polities*. Berkeley: University of California Press, 2003.

Smith, Monica. "Networks, Territories, and the Cartography of Ancient States." *Annals of the Association of American Geographers* 95, no. 4 (2005): 832–49.

Smith, William. *A Natural History of Nevis, and the Rest of the English Leeward Charibee Islands in America*. London: J. Bentham, sold by W. Thurlbourn; S. Birt, C. Bathurst, and J. Beecroft, 1745.

Stahl, Ann Brower. "Colonial Entanglements and the Practices of Taste: An Alternative to Logocentric Approaches." *American Anthropologist* 104, no. 3 (2002): 827–45.

Stark, Miriam T. "Glaze Ware Technology, the Social Lives of Pots, and Communities of Practice in the Late Prehistoric Southwest." In *The Social Life of Pots: Glaze Wares and Cultural Dynamics in the Southwest, AD 1250–1680*, edited by Judith A. Habicht-Mauche, Suzanne L. Eckert, and Deborah L. Huntley, 17–33. Tucson: University of Arizona Press, 2006.

Stedman, John Gabriel. *Narrative of a Five Years Expedition against the Revolted Negroes of Surinam*, edited and with an introduction and notes by Richard Price and Sally Price. Baltimore: Johns Hopkins University Press, 1988.

Stein, Robert. *The French Sugar Business in the Eighteenth Century.* Baton Rouge: Louisiana State University Press, 1988.

Stoler, Ann Laura, and Frederick Cooper. "Between Metropole and Colony: Rethinking a Research Agenda." In *Tensions of Empire: Colonial Cultures in a Bourgeois World*, edited by Frederick Cooper and Ann Laura Stoler, 1–56. Berkeley: University of Californina Press, 1997.

Swyngedouw, Erik. "Modernity and Hybridity: Nature, Regeneracionismo, and the Production of the Spanish Waterscape, 1890–1930." *Annals of the Association of American Geographers* 89, no. 3 (1999): 443–65.

Tabak, Faruk, and Michaeline A. Crichlow. *Informalization: Process and Structure*. Baltimore: Johns Hopkins University Press, 2000.

Tagliacozzo, Eric. *Secret Trades, Porous Borders: Smuggling and States along a Southeast Asian Frontier, 1865–1915.* Singapore: NUS Press, 2007.

Tankersley, Kenneth Barnett, Nicholas P. Dunning, Lewis A. Owen, and Janine Sparks. "Geochronology and Paleoenvironmental Framework for the Oldest Archaeological Site (7800–7900 cal BP) in the West Indies, Banwari Trace, Trinidad." *Latin American Antiquity* 29, no. 4 (2018): 681–95.

Tarlow, Sarah. *The Archaeology of Improvement in Britain, 1750–1850.* Cambridge: Cambridge University Press, 2007.

Tarrade, Jean. *Le Commerce Colonial de la France à la Fin de L'ancien Régime: L'évolution du Régime de "L'exclusif" de 1763 à 1789.* Vol. 12. Paris: Presses Universitaires de France, 1972.

Taylor, Douglas MacRae. "The Caribs of Dominica." Anthropological Papers, No. 3. *Smithsonian Institution Bureau of American Ethnology Bulletin* 119, (1938): 103–60.

———. "Tales and Legends of the Dominica Caribs." *Journal of American Folklore* 65, no. 257 (1952): 267–79.

Thomas, Peter D. G. "The First Rockingham Ministry (1765–1766): The Stamp Act Crisis." Chap. 6 in *George III: King and Politicians, 1760–1770*, 126–47. Manchester: Manchester University Press, 2018.

Thomas, Sarah. "'On the Spot': Travelling Artists and Abolitionism, 1770–1830." *Atlantic Studies* 8, no. 2 (2011): 213–32.

Tilley, Lorna, and Alecia A. Schrenk. "Introduction: New Developments in the Bioarchaeology of Care." In *New Developments in the Bioarchaeology of Care: Further Case Studies and Expanded Theory*, edited by Lorna Tilley and Alecia A. Schrenk, 1–10. Basel, Switzerland: Springer International, 2017.

Tobin, Beth Fowkes. *Colonizing Nature: The Tropics in British Arts and Letters, 1760–1820.* Philadelphia: University of Pennsylvania Press, 2011.

Tomich, Dale. *Slavery in the Circuit of Sugar: Martinique and the World-Economy, 1830–1848.* Albany: SUNY Press, 2016.

———. "Une Petite Guinée: Provision Ground and Plantation in Martinique, 1830–1848." *Slavery and Abolition* 12, no. 1 (1991): 68–91.

Toscano, Marguerite A., and Ian G. Macintyre. "Corrected Western Atlantic Sea-Level Curve for the Last 11,000 Years Based on Calibrated 14C Dates from Acropora Palmata Framework and Intertidal Mangrove Peat." *Coral Reefs* 22, no. 3 (2003): 257–70.

Townshend, P. "African Mankala in Anthropological Perspective." *Current Anthropology* 20 (1979): 794–96.

Trendell, A., ed. *Her Majesty's Colonies*. London: William Clowes and Sons, Ltd., 1886.

Trouillot, Michel-Rolph. *Peasants and Capital: Dominica in the World Economy*. Johns Hopkins Studies in Atlantic History and Culture. Baltimore: Johns Hopkins University Press, 1988.

Tsing, Anna Lowenhaupt. "On Nonscalability: The Living World Is Not Amenable to Precision-Nested Scales." *Common Knowledge* 18, no. 3 (2012): 505–24.

———. *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*. Princeton: Princeton University Press, 2015.

———. "A Threat to Holocene Resurgence Is a Threat to Livability." In *The Anthropology of Sustainability: Beyond Development and Progress*, edited by Marc Bightman and Jerome Lewis, 51–65. New York: Springer Nature, 2017.

Vaquero. *Life and Adventure in the West Indies: A Sequel to In Search of a Living in Spanish-America*. London: John Bale, Sons & Danielson, Limited, 1914.

VanValkenburgh, Parker, and James F. Osborne. "Home Turf: Archaeology, Territoriality, and Politics." *Archaeological Papers of the American Anthropological Association* 22, no. 1 (2012): 1–27.

Vérin, Pierre. "Carib Survivals at Pointe Caraïbe, St Lucia." *Caribbean Society and Culture Notes* 1, no. 3 (1958): 1–5.

———. "Quelques Aspects de la Culture Matérialle de la Région de Choiseul (Ile de Sainte-Lucie, Antilles)." *Journal de la Société des Américanistes* 56, no. 2 (1967): 460–94.

Victor, Paul-Emile. *La Poterie de Sainte-Anne (Martinique)*. Fort-de-France, Martinique: Imprimerie Oficielle, 1941.

Vieyra, Antonio. *A Dictionary of the Portuguese and English Languages, in Two Parts: Portuguese and English: And English and Portuguese. . . In Two Volumes*. Vol. 1. London: J. Nourse, 1773.

Vivanti, A. P. "Origins for the Estimations of Water Requirements in Adults." *European Journal of Clinical Nutrition* 66, no. 12 (2012): 1282–89.

Voss, Barbara. "Poor People in Silk Shirts: Dress and Ethnogenesis in Spanish-Colonial San Francisco." *Journal of Social Archaeology* 8, no. 3 (2008): 404–32.

———. "Status and Ceramics in Spanish Colonial Archaeology." *Historical Archaeology* 46, no. 2 (2012): 39–54.

Wadge, G. "Morne Patates Volcano, Southern Dominica, Lesser Antilles." *Geological Magazine* 122, no. 3 (1985): 253–60.

Wallman, Diane. "Negotiating the Plantation Structure: An Archaeological Investigation of Slavery, Subsistence and Daily Practice at Habitation Crève Coeur, Martinique, ca. 1760–1890." Ph.D. diss., University of South Carolina, 2014.

———. "Slave Community Food ways on a French Colonial Plantation." In *Bitasion: Archéologie des habitations-plantations des Petites Antilles—Lesser Antilles Plantation Archaeology*, edited by Kenneth Kelly and Benoit Bérard, 45–68. Leiden, NL: Sidestone Press, 2014.

Wallman, Diane, and Sarah E. Oas. "An Environmental Archaeology of the Socioecological Landscape at Morne Patate." Chap. 8 in *Archaeology in Dominica: Everyday Ecologies and Economies at Morne Patate*, edited by Mark Hauser and Diane Wallman, 153–167. Gainesville: University Press of Florida, 2020.

Walthall, John A. "Faience in French Colonial Illinois." *Historical Archaeology* 5, no. 1 (1991): 80–105.

Waselkov, Gregory A., and John A. Walthall. "Faience Styles in French Colonial North America: A Revised Classification." *Historical Archaeology* 36, no. 1 (2002): 62–78.

Watters, David R. "Mortuary Patterns at the Harney Site Slave Cemetery, Montserrat, in Caribbean Perspective." *Historical Archaeology* 28, no. 3 (1994): 56–73.

Watts, David. *The West Indies: Patterns of Development, Culture and Environmental Change since 1492.* Vol. 8. Cambridge: Cambridge University Press, 1990.

Weik, Terrance M. *Archaeology of Anti-Slavery Resistance.* Gainesville: University Press of Florida, 2014.

Weik, Terry. "The Archaeology of Maroon Societies in the Americas: Resistance, Cultural Continuity, and Transformation in the African Diaspora." *Historical Archaeology* 31, no.2 (1997): 81–92.

Weiner, Annette. *Inalienable Possessions: The Paradox of Keeping-While-Giving.* Berkeley: University of California Press, 1992.

Welch, B. "A Synthesis of Soil Classifications Used in the Central Lesser Antilles." *Soil Survey and Land Evaluation* 7, no. 1 (1987): 1–11.

Wells, E. Christian, Christopher K. Waters, Anthony R. Tricarico, and Georgia L. Fox. "Agroindustrial Soilscapes in the Caribbean: A Geochemical Perspective from Betty's Hope, Antigua." *Environmental Archaeology* 22, no. 4 (2017): 381–93.

Wilkie, Laurie A. *The Archaeology of Mothering: An African-American Midwife's Tale.* Hove, UK: Psychology Press, 2003.

———. "Culture Bought: Evidence of Creolization in the Consumer Goods of an Enslaved Bahamian Family." *Historical Archaeology* 34, no. 3 (2000): 10–26.

Wilkie, Laurie A., and Paul Farnsworth. *Sampling Many Pots: An Archaeology of Memory and Tradition at a Bahamian Plantation.* Gainesville: University Press of Florida, 2001.

Williams, Raymond. "Structures of Feeling." Chap. 9 in *Marxism and Literature*, 128–35. Oxford: Oxford University Press, 1977.

Wilson, Samuel M. The Archaeology of the Caribbean. Cambridge University Press, 2007.

Wilson, Samuel M., Harry B. Iceland, and Thomas R. Hester. "Preceramic Connections between Yucatan and the Caribbean." *Latin American Antiquity* 9, no. 4 (1998): 342–52.

Wittfogel, Karl. *Oriental Despotism: A Comparative Study of Total Power.* New Haven, CT: Yale University Press, 1957.

Wolf, Eric, and Sidney Mintz. "Haciendas and Plantations in Middle America and the Antilles." *Social and Economic Studies* 6, no. 3 (1957): 380–412.

Wood, D. *Trinidad in Transition.* Oxford: Oxford University Press, 1968.

Wynter, Sylvia. "Novel and History, Plot and Plantation." *Savacou* 5 (1971): 95–102.

Yentsch, Anne. *A Chesapeake Family and Their Slaves: A Study in Historical Archaeology.* Cambridge: Cambridge University Press, 1994.

Young, William. *Considerations Which May Tend to Promote the Settlement of Our New West India Colonies by Encouraging Individuals to Embark in the Undertaking.* London, 1764.

Young, William, 2nd. *An Account of the Black Charaibs in the Island of St. Vincent's, with the Charaib Treaty of 177 3, and Other Original Documents.* London: Printed for J. Sewell, 1795.

———. "A Tour through the Several Islands of Barbadoes, St. Vincent, Antigua, Tobago, and Grenada, in the Years 1791 & 1792." In *The History, Civil and Commercial, of the British Colonies in the West Indies*, edited by Bryan Edwards, 245-328. Dublin: L White, 1793.

Yvon, Tristan, and Fabrice Casagrande. "La Production de Formes à Sucre de Guadeloupe et de Martinique. Apport de L'archéologie aux Sources Textuelles." *Archépages*, no. 31 (2011): 40–45.

Zedeño, María Nieves. "Animating by Association: Index Objects and Relational Taxonomies." *Cambridge Archaeological Journal* 19, no. 3 (2009): 407–17.

Zupko, Ronald Edward. *French Weights and Measures before the Revolution: A Dictionary of Provincial and Local Units.* Bloomington: Indiana University Press, 1978.