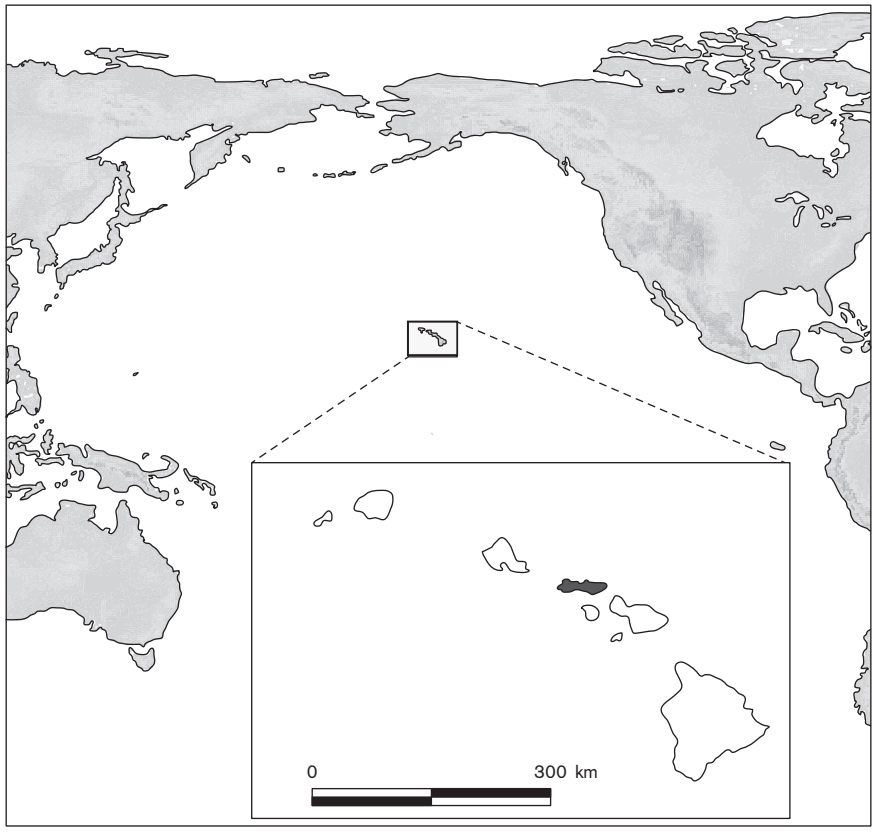
Introduction

Outer Island, In Between

What does the history of Molokai have to tell us? Molokai is an island of the Hawaiian chain, located in the middle of the Pacific Ocean and physically average in most respects. It is the fifth largest of the group at 38 miles long and 10 miles wide at its widest point, with an area of 260 square miles and a coastline of 100 miles. It has a representative mix of the astonishing variety of environments typical of the larger Hawaiian Islands: rain forest, mesic forest, semiarid grassland, high mountain bogs, sheer sea cliffs, broad alluvial fans, sandy and rocky coastlines, and fringing coral reefs. It sits squarely in the middle of the eight main islands of the Hawaiian chain: 25 miles east of Oʻahu, the capital and metropolis of the archipelago; 8.5 miles west of Maui; and 9 miles north of Lanaʻi (see map 1). On a clear day, it is in sight of five of them (only Kauai and Niʻihau are out of sight, below the western horizon).

Molokai is also an exception: even occupying its central position, Molokai was always marginal to the political, military, and economic affairs of the Hawaiians, and it has remained marginal in the modern US territorial and statehood periods. For centuries, it has been known as a place of failure—politically, economically, militarily—and as a place of depopulation, emigration, and exile. It has borne much of the worst social and environmental damage in Hawaiʻi and continues to lead the state in indicators of malaise such as unemployment, welfare dependency, invasive species, and erosion. It was known to the ancient Hawaiians as Molokai o Pule oʻo (Molokai of the Powerful Prayer), a place of sorcery, poisons, and misty, remote places of refuge, an island easy to subjugate by invading armies but difficult to fully subdue or incorporate into social and economic orders imposed from outside. It has been known for the last several generations of people in Hawaiʻi as "the



MAP 1. Location of Molokai and the Hawaiian Islands in the Pacific Basin.

lonely isle," a place most often passed by; to most of the world, it is known simply as "the living grave," where the lepers were banished to wait for death. In all of these senses, Molokai defines the limit of what is called "outer island" Hawai'i—peripheral and rarely visited. But in physical terms, it is not on the periphery but dead in the center of the group, its cliff-edged, wind-scoured coasts marking off the four most important channels and sea routes in the archipelago—a position that may have been memorialized in its name: as *molo* means gathering or braiding together, and *kai* means ocean waters.[1] (The use of the glottal stop, Moloka'i, is likely a modern mistake, possibly the invention of singers catering to tourists in Honolulu in the 1930s tailoring syllables to rhyme in their verses.)[2] Molokai is in the middle; to go anywhere between the islands of Hawai'i, Maui, Lana'i, Kaho'olawe, and O'ahu, one must pass Molokai.[3] With its several verdant farming

valleys and a long shoreline studded with rich fish ponds during the precontact Polynesian period, the island was an opportunity for more powerful outsiders to come conquer and exploit. Hawaiian armies up to King Kamehameha's in the early nineteenth century had little choice but to stop and fight over the island, often laying it to waste, en route to larger battles elsewhere. After the violence was suppressed, Molokai remained a lure to outsiders looking for land and wealth, who were always more powerful than the few dispersed inhabitants.

Molokai is an outer island in between, the near far away, an other place just next door; a place marginal to the main events of history and yet never entirely apart from them, transformed by them and yet filtering their impacts through its own conditions and structures. And, it is the contention of this study that this is not a defect from the point of view of writing history. Indeed, Molokai's marginality, relative to its larger neighbors and to the larger outside world, gives it a focused explanatory power, like a small lens that refracts and reflects back bigger processes and wider histories with which it has intersected, thereby illuminating them in invaluable ways. Because it is more isolated and simplified in comparison to larger, more central places, certain processes are more visible, their outlines less blurred by complexity. To understand the history of this marginal place is to go a long way toward understanding the history of Hawai'i, the United States, the Pacific, and the world.

One reason I chose Molokai to study is because it is a small, marginal, unimportant place within a somewhat larger, somewhat more consequential place, Hawai'i—itself at the center of the world's largest ocean and so a critical junction of Pacific and world history during the past two and a half globalizing centuries, as well as an active frontier of American expansion. Like a doormat, it has been at the center of a lot of action, and like a doormat, it has been really beaten up. And you can see the scuff marks pretty clearly; the island is just lying there open to view, essentially untouched by the modern development that has buried so many of the traces of history on the larger islands beneath hotels, subdivisions, and parking lots. But it is important not to focus exclusively on the island's negative markers. It is also a place of remarkable endurance, resistance, and cultural resilience. Molokai people gained their reputation for sorcery through a millennium of resistance to powerful outside forces. They were celebrated for fierce independence from the demands of higher-status outsiders in a society rigidly ordered by caste and for an ethos that we might think of in modern terms as nature-centered and communitarian. Since the coming of the rest of the world to the Hawaiian Islands over the last two and a half centuries, Molokai almost alone has maintained many of the values and ways of the old Hawaiians, from the *'ohana* extended family, rooted in the soil of a small valley, to traditional forms of farming and fishing that help sustain a community-based lifestyle that has mostly vanished elsewhere. This is true in large part because the island has been, on the whole, a place of economic stagnation and persistent business and administrative failures. In ancient and modern

Hawai‘i equally, Molokai was and is thought of as a land of regret for its failures and of longing for what it has preserved.

Molokai as a case study has many advantages from a historian's point of view. It has a well-developed archaeological record, well spread over the island's breadth, including a trove of groundbreaking work on one of the earliest and longest continuously inhabited Polynesian settlements, at Hālawa Valley. Historical traces are very visible on the island because there has been very little modern agricultural or urban development compared with the other Hawaiian islands. Because it has been marginal to the political and economic development of Hawai‘i in the post-contact period, there has been a retardation of historical effects: what may have happened on O‘ahu in the early nineteenth century might have happened on Molokai in the late nineteenth or even early twentieth, making such events easier for historical methods to see.

As a place near but peripheral to the center, O‘ahu, Molokai is a better theater in which to view environmental and economic history than political, diplomatic, or military history or the social history of the elites in Hawai‘i. Because of this—and the fact that these last subjects have been extensively worked over by other historians—this study takes as its focus the nexus between environment and society. It looks at how the land and ecosystems have changed over time with human intervention and at how social structures; land tenure; market conditions; definitions of common resources; and technologies such as irrigation, aquaculture, and new crops, including genetically modified organisms in the twenty-first century, have changed over time and have in turn affected the land. It looks for patterns, relationships, sequences of causation, cascade effects, and scale effects—especially spatial ones—in order to understand how these factors have worked on and with one another and how they have shaped the history of communities in Molokai.

Molokai's exceptionalism has much to do with scale—but not in a straightforward or one-dimensional way. It is comparatively small and so is at a comparative disadvantage in population and resources to other islands. But scale does not work in a simple way: in many ways, the island is large. There are the obvious physical ways: it has the tallest sea cliffs in the world, up to three thousand feet, the longest fringing reef in the Hawaiian Islands, and once had the largest fishpond aquaculture complex in the Polynesian Pacific. And there are other, less obvious ways that have to do with the local, perceived relationships between people and things, which we will explore in this study. Molokai has a bit of everything, such as a representative mix of climates and terrains, as has been noted. It has a thoroughly mixed population, with the largest per capita percentage of native Hawaiians in the state cohabiting with transplanted Europeans and mainland Americans, Chinese, Japanese, Filipinos, and many others. Economically, it has supported at one time or another all of the components of Hawai‘i's history: fishing, irrigated farming, dryland farming, fishpond aquaculture, ranching, sugar, coffee, pineapple, diversified

fruit and vegetables, light manufacturing, and tourism. It has had irrigation both on a small scale, supporting traditional Hawaiian farms, and on a large scale, watering thousands of acres of industrial plantations. It has had (and continues to have) both a subsistence economy of small farms and homesteads and a huge, outside-capitalized export agribusiness sector employing cheap immigrant labor. Both have been materially aided by significant state and federal interventions, and both have coexisted on one island—though each mostly has had to itself one very different half of it.

The distribution of these features has largely been imposed by environmental variation: wet versus dry, level versus steep, rocky versus fertile. The environment is critical to everything in Molokai, both as constraint and as opportunity: some places are "thick" with natural resources, making them potentially prosperous and so coveted by outsiders; some are resource "thin" and so impoverished and ignored. Water, in abundance or scarcity, has from the beginning of settlement there fundamentally structured human social and economic possibilities and thus how people have restructured the natural environment to suit their aims. Hawai'i is shaped by a fundamental wet/dry dichotomy, due to the permanent trade winds that produce rainfall on the windward sides of each island and arid rain shadows on the leeward sides. Some of the wettest places on Earth are just a few miles as the crow flies from extremely dry places; this situation is common on all of the large islands, and even on the smallest, precipitation, or the lack of it, is a basic environmental fact. Unavoidably, in Hawai'i, water is the fundamental organizing principle of both the human and the natural worlds, of the landscape and the social body that lives on it, and of their intersections. Water orders and differentiates production, reproduction, politics, and religion as well as their disorders in the forms of drought, erosion, warfare, and conquest—and in between these extremes, the thread of Hawaiian history unspools.

This is a long-range study, of a very long *durée*, from the antecedents of the arrival of Polynesians in Molokai around the year AD 1000 to our own era. A big part of what is observed is how the settlement and colonization of a remote island archipelago works. In one thousand years, the Hawaiian Islands were settled, in the simplest accounting, twice: once by Polynesians and again after discovery by the outside world in 1778. Really, they were settled many times, over and over again: landfall was made in Hawai'i by Polynesians many times and by people from nearly everywhere on Earth countless times, bringing with them animals, plants, parasites, pathogens, tools, techniques, ideas, and religions. In both, or all, cases, depending on one's arithmetic, this amounted to plugging into the world and setting off each time what are effectively the processes of globalization. Thus, our socioenvironmental history is also the history of an environment and society under near-constant stress from outside settlement, colonization, extraction, and the attendant processes of change.

A key finding of this study is that clear patterns of interactions between people and their environment are visible across Hawaiian history, from the appearance of Polynesians to our own era. Discerning these patterns begins with looking at water. Because water is so unevenly distributed, access to water resources is key to life: irrigated agriculture was at the base of Polynesian Hawai'i's economy, religion, and competitive social order. The control of water is everything: from its control flow the control of land, labor, and therefore, power. Under an intensely competitive social order, the control of water in Hawai'i tends toward—because it strives for—monopoly control of water and thus the rest, as well as a continuous intensification of production for surplus to support that monopoly control and people and resources. Forms of monopoly control of water are clearly and repeatedly visible in both the Polynesian period and in the postcontact period, where water remains at the center of the economic and therefore political and social life of both the nineteenth-century Hawaiian kingdom and the twentieth-century American territory and state.

It is also clear from the historical record that monopoly control of water and land resources exacerbates and drives the feedback loop of environmental degradation; the destruction of common resources; and the decline of small, subsistence-based communities, further reinforcing intensification and the control of monopolists. This helps to explain the rapid social change and very high degrees of agricultural development in both the Polynesian and postcontact periods and helps to explain the rapid and severe environmental degradation seen in both periods.

This apparent repetition is striking. I refer to it as a historical *isomorphism*: the similarity of form or structure between two things or organisms with different ancestry, arrived at through convergence. This word is important. It does not mean that the same thing happened twice, or that history repeated itself in Hawai'i, but that something similar happened (at least) twice, to different people, at different times—but in the same place. In evolutionary biology this is known as convergent evolution, where unrelated organisms assume similar forms while adapting to similar or the same environmental constraints. Seeing this isomorphism in Molokai indicates that deep structures unique to the place pushed apparently very different human societies at very different times toward assuming similar forms. The challenge is to explicate, first, what those deep structures of place are and how they work and, second, how the nature of the societies—their cultures—are worked on by them and work on them in turn.

What is revealed? Not, as might be expected, or feared, environmental determinism, where physical geography determines human social outcomes. Instead, the history of Molokai shows a dynamic interaction between different types of environment and different types of social orders, which is not random but shows distinct patterns across long spans of time and is thus suggestive of a strong role of environment in social outcomes—and an equally strong role of social structures

and values in determining the fate of the environment. Discerning these patterns and how they work is important because in both cases, most of the time, both the environment and a plurality of the members of society came out the worse in the deal, becoming significantly impoverished over time and falling under the control of narrow, monopolizing elites defined largely by heredity. We see that countervailing patterns exist, at the same time, of environmental and social structures that resist control and impoverishment, and yet they are limited, by the same factors that enable the opposite outcome in most cases, across Hawaiian history.

A challenge for this study is to make the history of one small island relevant to the larger world. The history of Molokai must be embedded in the history of the milieu (Hawai'i); in the region (the Pacific); in America, of which it becomes a part; and in the world; hopefully, by learning about the processes that have shaped Molokai, we will learn something about the larger world. Hopefully, it can also be a case study that casts light on and encourages the study of similar places: small, out-of-the-way, marginal, minor places. In 1975, Gilles Deleuze and Felix Guattari called for the study of "minor literature" in its own right, as necessary as the study of the great books and without which the great books cannot make sense.[4] This study is informed by the desire to write the history of a minor place because the world is made up of them, and their history shapes the fates of big, major places far more than historians have been willing to allow. It is not a microhistory because it does not assume that Molokai is a microcosm but rather that it is a distinct place with a history linked at all levels with contexts greater and smaller, from the largest stories of human history—migration, discovery, and globalizations—to the intimate histories of families. This study looks at Molokai, but always in context, never in isolation. These contexts range from Hawai'i to North America to China to Europe. They are considered not simply to illuminate events on Molokai but also to examine how events on Molokai have affected them; all are parts of a continuum, and all share a space-time.

There are many general histories of Hawai'i; most are primarily concerned with the progress of political events. There are many more studies of Hawaiian natural history, since it is one of the great laboratories of evolution on the planet, rivaling the Galápagos in the amount of literature developed. Very few authors have looked at its environmental history—and then not in sufficient relation to the economic and the social. Historiography tends to portray Hawaiian history as primarily a political process—just one more instance of a small, weak Aboriginal grouping succumbing to the irresistible pressures of European and American imperialism. Demographic, economic, and eventual political collapses are seen as inevitable given the progress of world history. The role of the environment is not considered adequately. Yet Hawaiian history is to a great extent a saga of physical and biological changes, of radical transformations in its landscapes and inhabitants, beginning with processes set in motion by the first Polynesian colonizers. From 1778

onward, it becomes a story of the steady retreat of native Hawaiian people and nature. Politically centered history, riveted by the confrontation between Hawaiian rulers and foreign usurpers, has done a poor job of addressing or understanding these changes. Given that Hawai'i remained a sovereign monarchy until 1893, it was a unique situation in the island Pacific: not colonial—though perhaps *paracolonia*—and thus a product as much of internal dynamics as of external ones.[5] Land and water are at the center of these internal dynamics and so should be put at the center of Hawaiian history.

While the major twentieth-century authors recognize, to varying degrees, the role of environmental stresses, such as deforestation, erosion, desertification, disease, and the myriad effects of species invasion and extinction, little is understood by historians about the mechanisms and extent of these.[6] Among professional historians, Ralph Kuykendall and Gavan Daws did the best jobs of acknowledging the role of environment and disease, but they ascribed few motivations and isolated few consequences. Answers to questions as fundamental as what caused the Hawaiians' demographic decline were based on shaky estimates or guesses drawn from early accounts. Others, such as Lilikala Kame'eleihiwa, elide nature altogether, dismissing it by positing an eternal "harmony" between Hawaiians and their *'aina* (land), before turning all attention on the cultural chasm that separated the understandings and experience of Hawaiians and *haoles* (foreigners). This elision ignores copious evidence that the Hawaiians, while certainly living in greater "harmony" with nature than do we in our modern, industrial society, were quantifiably ruinous to aspects of the low-elevation environment of the islands, including forests and birds.

Part of the problem is that historians have relied on traditional documentary sources that, when they took any note of the physical world around them, tended to do so in a fragmentary way. A major shortcoming is a lack of attention to scientific studies, from archaeology, paleobiology, geomorphology, and other fields, which have the potential to fill in the wide blanks in the historical documentation. In addition, since the publication of most existing Hawaiian histories, the volume and quality of such work has multiplied enormously.[7] This study has relied on several layers and registers of evidence, from traditional historic documents to recent research in the natural and social sciences to visual evidence such as images and mapping, in order to try to reconstruct and diagram physical changes in the islands; to provide a kind of moving picture of the sensible Hawaiian world; and to analyze these changes against the broader social, economic, and political canvasses.

The major signal exception to the foregoing complaints is the work of Patrick V. Kirch, one of the world's leading Pacific archaeologists, and Marshall Sahlins, one of the world's leading Pacific historical anthropologists, on the relation between Hawaiian social structure and history. Their 1992 collaboration, *Anahulu: The Anthropology of History in the Kingdom of Hawaii*, a two-volume study of a valley

in Waialua District, windward Oʻahu, is a synthesis and pairing between archaeological and ethnohistorical investigations of the history of the Anahulu River valley, from precontact up to the aftermath of the Mahele, or land revolution of the mid-nineteenth century. By linking changes in the environmental and the social and insisting that historical analysis map both registers onto one another, this approach illuminates riddles that would otherwise have remained opaque. For example, the authors found, through archaeological excavation, a vast extension of irrigated taro pondfield and ditch construction in the upper valley, about which historical documentation had contained barely a hint. This building boom coincided with King Kamehameha's second garrisoning of Oʻahu from 1795 to about 1810. They deduced that the king, having seen his first attempt at occupying the island collapse as famine spread under the pressure of his armies, resolved to install a self-sufficient warrior-farmer garrison that could endure indefinitely by settling his Hawaiʻi-island fighters and their families on new taro lands high in the watershed. From 1810 to 1825, these lands were gradually abandoned as the ascendant Kaʻahumanu faction of the aliʻi shifted its *corvée* demands away from agricultural produce to sandalwood cutting. Briefly, after 1829, there was a new burst of activity, ending with the total collapse of sandalwood resources.[8] These discoveries confirm the basic interrelatedness of the natural and the social. Another example of interest is the evidence *Anahulu* presents of devastation caused by crop and plant diseases, blights, and animal invasions to the productive capacity of rural Waialua District, ultimately contributing to its social and demographic collapse.

Kirch and Sahlins tried, in their words, to "bring down the history of the world to the Anahulu river valley."[9] This study takes theirs as an inspiration, but it differs in that its Hawaiian location is larger, its time span longer, and its analytical framework focused on the reciprocating interactions between environment, economy, and society moreso than on the social structure as the driver of these.

Several works from American environmental history have helped to guide this study. A general model of how an environmentally literate history can illuminate larger historical questions is Alfred W. Crosby's *Ecological Imperialism*.[10] Applied to Hawaiʻi, Crosby's approach would benefit from a greater attention to diverse scientific and social scientific literature, to historical geography, and to the native Hawaiian side of the story, expressly including the history of processes begun by Polynesians that then continued, often in radically accelerated form, after 1778. In this regard, William Cronon's book *Changes in the Land* and Stephen J. Pyne's work, including *Fire in America* and *Burning Bush*, are excellent examples of how indigenous practices powerfully shaped land and water long before European arrivals.[11] The work of Jeremy Adelman, Stephen Aron, and Richard White on borderlands and frontiers is directly applicable to the history of Hawaiʻi, which, in the period from contact in 1778 to the American-led overthrow of the monarchy in 1893, while remaining nominally sovereign, was nevertheless a borderland between

competing imperial powers in the Pacific and a place where a diverse mixture of people from all over the world shared space with native Hawaiians in a complex, shifting "middle ground" between overlapping, rivalrous sets of political, economic, military, cultural, and environmental worldviews and practices.[12]

Donald Worster's lifelong focus on how structures of class, expertise, and power interact in the settlement of marginal landscapes and, not coincidentally, his focus on the links between irrigated agriculture and political domination, inform this study throughout.[13] Indeed, the United States Bureau of Reclamation, which he chronicled in *Rivers of Empire*, played a central role in the transformation of West Molokai into a terrain of industrial agriculture in the second half of the twentieth century (as will be seen in chapter 5). In Molokai and elsewhere in Hawai'i, the Bureau of Reclamation and other government agencies at both the state and federal levels actively intervened on behalf of large landowners and commercial interests by imposing policy, fiscal, and legal frameworks that aided their capture of resources, often to the detriment of smaller, local interest groups and communities. This aspect of Hawai'i's history underscores its commonalities and continuities with the experience of the American West, including Alaska, with state and federal lands and environmental agencies and policies.

The recent work of Jared Diamond has brought wide attention to many of the insights of environmental historians by synthesizing their work and that of numerous scientific investigators in some of the fields previously listed into large-scale, panoramic histories of human experience, using comparisons between large and small social and physical entities, sometimes widely separated in time and space.[14] His book *Collapse: How Societies Choose to Fail or Succeed* proposed to link environmental factors with the historical failures or the collapse of societies. Diamond's initial premise was that factors such as soil fragility, aridity, small size, extreme climatic conditions, and climate change contributed greatly to the likelihood of failure of societies. But in his survey of case histories, it is clear that the environment is rarely the determining factor. Severe cases of collapse occur both on small islands, such as Easter and Henderson in the South Pacific, and in large continental regions, such as the American Southwest and Central America. While all seem to share one or more types of ecological marginality, there are many different variables. Diamond tirelessly cataloged and sorted natural structures and factors according to rubrics such as fragility versus resilience or eight kinds of degradation, including deforestation, soil degradation, overhunting or overfishing, population growth, and so on. Yet, given his inclusion of so many dissimilar places, no pattern emerged that convinces one that environmental damage is a programmatic, comprehensible factor in the success or failure of different societies in different places at different times. Diamond allowed as much in his introduction to the volume, admitting, "I don't know of any case in which a society's collapse can be attributed solely to environmental damage: there are always other contrib-

uting factors. When I began this book, I didn't appreciate those complications, and I naively thought the book would be about environmental damage." He designated five sets of factors: environment, climate change, hostile neighbors, friendly trading partners, and each "society's response to its environmental problems."[15] On completing the study, he found that only the last factor "always proves significant"; the first four "may or may not prove significant." In spite of the exhaustive taxonomies of factors, no hierarchy organizes all the many variables, and no set of rules orders them into a global logic or a set of criteria that would be useful for prediction. Each case study is a good description and is unique, like an address—or a history. In the end, Diamond succeeded in writing a series of fascinating histories—a venerable and valuable narrative art form to be sure—but fell short of his goal of finding a kind of science of the failures of societies.

What was missing, even from the point of view of satisfying narratives, was an appreciation for culture, a thing much maligned among historians and scientists alike, apparently because of its high-profile career among the anthropologists in the twentieth century. But it is inescapable. Even in the case of the smallest, most resource-impoverished places that Diamond described, it is easier to place blame for the failure of long-term colonization on the shortcomings of the social structure involved than on the environment there. In each case, the moves that precipitated a collapse were cultural failures to adapt or respond adequately to environmental challenges rather than simply these challenges themselves. In each case Diamond narrated, culture was the man behind the curtain: decisions were made—economic, military, legal, reproductive, even aesthetic—that had an impact on the tendencies, trajectories, and outcomes of the societies under the microscope. Cultural categories were often the fundamental, causative problems such as elite competition and unaccountability, warmaking, religion, dictatorship, and the most powerful and environmentally (and socially) damaging of these, the "lust for power." We hardly need an environmentally centered history to tell us this. And such a history, focused on cataloging and understanding physical factors, is not sufficient to get to the bottom of the story. What is needed is a catalog of cultural factors alongside physical ones and an analysis of their dynamic interaction where historical outcomes are produced.

What *Collapse* proved is that while environment is hugely important in influencing historical outcomes, environment is not destiny; it is just a set of constraints and limitations on which and within which human social structures and values work and are in turn worked on. The lesson is that it takes two to tango, and neither partner—environment or society—always or necessarily leads the dance. This study of Molokai is an effort to write a history of a Hawaiian island and, through it, of the Hawaiian Islands, that combines the optics of nature and culture into a more integrated practice of history than we have generally seen in this reach of the ocean.