

Planting Improvement:
The Rhetoric and Practice of Scientific Agriculture in Northern British America,
1670-1820

By
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B.A., History
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Submitted to the Program in Science, Technology, and Society
in partial fulfillment of the requirements for the degree of

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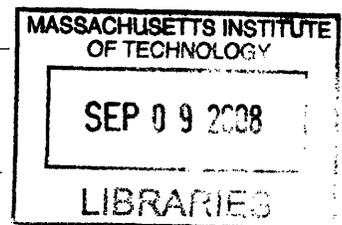
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ABSTRACT: “Planting Improvement: The Rhetoric and Practice of Scientific Agriculture in Northern British America, 1670-1820,” explores the history and cultural politics of environmental change in the British empire through a focus on rural land-use practices and the construction of scientific expertise in the cold temperate colonies of New England and Nova Scotia, from the late seventeenth through early nineteenth centuries. Improvement was an abiding mode of and justification for British imperialism through territorial expansion and early modern economic development. British American and anglophone colonists of a range of status positions embraced agricultural improvement, though to different degrees and in different ways. For all settler-farmers, improving extra-European land meant transforming native environments into neo-European agricultural landscapes that were aesthetically familiar. For elites in northern North America, agricultural improvement was additionally a science of the practical Enlightenment, which encompassed husbandry and horticulture, stadial theories of progress, and the objectives and methods of natural history, geography, and economic survey. By exchanging farming advice, botanical literature, and seeds, plants, and livestock with other naturalists and improvers in the republic of letters and scientific institutions in the region as well in England, Scotland, Sweden, Russia, and France, elites in New England and Nova Scotia took a uniquely scientific approach to colonial property development. By employing the rhetoric of science and flaunting their privileged access to transatlantic, European, and imperial networks, northern elites who formed agricultural societies, supported natural history professorships, and private, academic, or colonial botanical gardens, distinguished their land improvements from those of their neighbors. Moreover, they believed that scientific improvement could ameliorate the troublesome disadvantages of the region’s nature—especially its climate, seasonal weather extremes, short growing seasons, uneven topography, and thin soils. Scientific improvement would erase the geography of difference which made their lands marginal to the real estate market, staple-crop economy, and migration flows of the British empire and the early United States. Because improving the landscape and environment promised to improve the people inhabiting them, agricultural improvement was also a program for social reform: northern elites crafted projects to employ ‘surplus laborers’—especially Indians,

Acadians, Jamaican Maroons, women, children, criminals, and the poor—in silk production or in the region's small farms. Yet the limits of the northern environment challenged the regional practicability of scientific agriculture as well as enlightened improvers' pretensions to universalism. I conclude by analyzing these broad ambitions in relation to northern improvers' allegations of widespread indifference (or their own failure to popularize) a scientific approach to agriculture. The study bridges the 'First' and 'Second' Empires in British imperial historiography and the colonial and early national periods in the field of United States history, emphasizing instead the solidarities that persisted among elite Americans, Loyalists, and Britons, through kin, friendship, and scientific networks, despite conflicting allegiances to the Crown or to the republican causes of the American and French Revolutions.

Thesis supervisor: Harriet Ritvo

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For Baba

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Chapter 1: Introduction

In 1796, the Massachusetts Society for Promoting Agriculture (MSPA) introduced its handbook of rules and regulations with a rationale for the establishment of the Society:

The state of Agriculture in all parts of the world is far from perfect. Great progress, however, has of late years been made in Europe in its improvement. Many persons, not practical farmers, have associated for the purpose of encouraging useful experiments ... The Massachusetts Society was formed with the same view; and in this country, it may be expected to prove more useful than in the old countries.¹

Whether the caveat “not practical farmers” denoted a matter of fact, a deliberate exclusion, or a rhetorical signal with an ambiguous referent, the distinction between practical and so-called theoretical or book farmers was maintained by members of agricultural societies and other elite improvers in North America and throughout the anglophone world in the late seventeenth through early nineteenth centuries. Beginning with the 1723 Society for Improving Knowledge of Agriculture in Edinburgh, agricultural societies were learned associations of gentlemen organized to promote the commercialization and modernization of farms through scientific innovations. Their aim was to formulate standard recipes for increasing the yields, efficiency, and profitability of agricultural production and, ultimately, to reform the agrarian economy on a broad scale. Agricultural societies funded experimentation with exotic crops, seed and livestock

¹ *Rules and Regulations of the Massachusetts Society for Promoting Agriculture* (Boston: Fleet, 1796), 3.

breeding, methods of cultivation, and soil amendments, and publicized their recommendations and solicited the advice of others through meetings, the circulation of pamphlets, and correspondence with far-flung members in Britain and abroad. Some agricultural societies solicited the experiential knowledge of practical farmers. The MSPA, for example, gave assurances that poor education and an inability to “write in a polished style” would not prevent the Society from publishing the communications of common farmers.² These overtures were attempts to win local support for and cooperation with genteel farmers’ improving mission, not to integrate local traditions into their schemes for agricultural reform. Rather than invite farmers’ participation in advancing agriculture, improvers used surveys of contemporary methods, such as those commissioned by the British Board of Agriculture in the 1790s, as a basis for criticizing them.³

American and British historians have examined the vexed relationship between farmers and agricultural scientists in the nineteenth and twentieth centuries in national and late imperial contexts. These studies have focused on the relationship between state-building and the professionalization of the sciences, especially the state-sponsored institutionalization of agricultural science, which led to the creation of such powerful agencies as the U.S. Department of Agriculture and, in Britain and its empire, to a collaboration between the Colonial Office and Kew Gardens, each with their respective domestic and international networks of extension services and experimental farms,

² [MSPA] *Rules and Regulations*, 4-5.

³ See, for example, the writings of Arthur Young in the *Annals of Agriculture*, and his correspondence with George Washington in, *Letters on Agriculture from His Excellency George Washington, President of the United States, to Arthur Young* ed., Franklin Knight (Washington, 1847); and Samuel Deane, *The New England Farmer; or, Geographical Dictionary...* (Worcester, MA: Isaiah Thomas, 1797).

'stations,' botanical gardens, and laboratories. This dissertation examines the formative phase of British and early American imperial projects to promote a scientific approach to economic development in general and farming in particular, in the marginal settler colonies comprising New England and Nova Scotia through the early nineteenth century.

"Planting Improvement: The Rhetoric and Practice of Scientific Agriculture in Northern British America, 1670-1820," explores the environmental history and cultural politics of agriculture, science, and empire in the northern British Atlantic world over the long eighteenth century. To understand changes in the rhetoric and practice of land-use in one corner of the British Empire—its cold temperate outposts of settlement in northern North America—the dissertation focuses on the material, ideological, and symbolic aspects of agricultural practice, especially as they were expressed and circulated through regional and international networks of correspondence and mutual influence among botanists, local officials, wealthy planters, and other elites invested financially, intellectually, or otherwise, in the region. Through an analysis of the rhetoric and practice of settler colonialism through agricultural improvement in early northern British America, I show how local and metropolitan elites perceived and attempted to control the transformation of the regional environment, using their connections to imperial scientific networks to shape place, climate, and selfhood. Ultimately, elites focused on the improvement of lands in Nova Scotia and New England hoped to obviate the environmental qualifier 'northern,' with all its negative connotations of hardship and limits for extensive settler development; the chapters that follow consider why their vision was more effectively said than done, and why.

Improvement, environment, and empire

If, in the long term, agricultural improvement was a grand project of global ecological and landscape homogenization in the name of enlightened empire, then in the shorter term, it was a means of asserting territorial sovereignty in foreign lands, exploiting natural resources, and, especially in the northern colonies, a strategy for social differentiation. Since British settler colonization in the New World was itself a form of improvement, scientific improvement was only distinct from and opposed to vernacular farming practices insofar as British or anglophone colonists secured property claims to indigenous lands. Only when this form of territorial conquest was assured did elite improvers throughout the British colonies emphasize the difference between scientific and traditional farming. Because the plantation of New England and Nova Scotia did not—indeed, could not—follow the pattern of extensive cash-crop cultivation practiced in warmer climate plantations, the scope of northern improvement was limited to agricultural colonization and subsequently, to scientific agriculture practiced on a relatively small scale. While northern improvers expected all colonists to make wild, peculiar, and deficient environments conform to the aesthetic standards of contemporary British agricultural practice throughout the empire, at the same time they discriminated the practices and ambitions of small farmers from their own approaches, which were conspicuously forward-looking, scientific, and cosmopolitan. Improvement therefore encompassed both land settlement and, secondarily, class formation, processes which

bound the cultural interests and sympathies of elites in the region right through the transformation of the empire in North America after 1783.

In early encounters with the New World, Britons perceived the land—rather than farmers’ techniques—in need of improvement. American nature seemed to English observers abundant and fecund but virtually uncultivated. As recent scholarship has emphasized, improvement and early modern agrarian ideology helped lay the groundwork for British imperial expansion in the seventeenth through early nineteenth centuries. In her book on the role of livestock in the colonization of North America, for example, Virginia Anderson characterizes colonial husbandmen as the personification of an English agrarian ideal, and their agricultural practices as the enactment of particularly English notions of the civilized use of land. In North America, the English pursued (as they had earlier in Ireland) what David Armitage has called the agriculturalist justification for imperial expansion or “colonization through cultivation.”⁴ Believing that particular forms of land use reflected not just cultural distinctions but also civilizational achievements, colonial farmers could understand their work in transforming the indigenous landscape through logging, enclosure, and the importation of European domesticated plants, animals, and other Old World novelties both as necessary for insuring a ‘competence’ for their families and as proof of the moral and political legitimacy of their presence on the land.

Agriculture became the source of fortune for British plantations in the Americas, particularly in the warm climates of the Chesapeake, the Lower South, and the West

⁴ Virginia D. Anderson, *Creatures of Empire: How Domestic Animals Transformed Early America* (New York: Oxford University Press, 2004); David Armitage, *The Ideological Origins of the British Empire* (New York: Cambridge University Press, 2000), 49-50, 97.

Indies, where colonists and laborers secured their claims to new lands and generated wealth by growing staple crops like tobacco, rice, and sugar cane for export (and re-export) throughout the Atlantic and beyond. British settlements in colder parts of the New World were also dependent on agriculture for their success as colonial ventures, albeit on a smaller scale and with somewhat different results. In part, the size of northern farms was determined by ecological factors. Although many assumed that northern North America and Britain's temperate climates were nearly identical, colonists soon found that the region's relatively short growing season, its rugged topography, and the acidity of its sandy, rock-strewn soils forced them to adapt their customary farming practices to local conditions.⁵

But British migrants were drawn to the northern colonies by the greater prospects of securing land and establishing independent households.⁶ Because they relied mostly on family members or seasonal laborers and on local and regional exchange networks, northern mixed husbandry farms tended to be more modest and less oriented toward Atlantic commerce than southern plantations. Still, farming was by far the main occupation of most British settlers in the north, the activity which directly and extensively established the pattern of the colonized landscape, and thus, the territorial expansion of the First British Empire.⁷

⁵ Brian Donahue, *The Great Meadow: Farmers and the Land in Colonial Concord* (New Haven: Yale University Press, 2004).

⁶ For convenience, throughout this study I generally use Britain and British interchangeably with England and English, except when I am writing about English empire before the Union of 1707 or when I mean to indicate specifically English, as opposed to Scottish individuals.

⁷ William Cronon, *Changes in the Land: Indians, Colonists and the Ecology of New England* (New York: Hill and Wang, 2003 [1983]).

By the mid-eighteenth century, maintaining vital economic and cultural connections to metropolitan Europe became a more pressing concern for British Americans than justifying colonization and Indian removal. In their increasing consumption of imported goods, eighteenth century colonists—northern and southern, gentlemen and yeomen alike—fostered a sense of unity with Britons on the other side of the Atlantic. But not all colonists invested equally in imported goods and ideas. As Richard Bushman and others have emphasized, interest in agricultural improvement was not widespread but rather, as in Britain, it was peculiar to the landowning elite.⁸ Elite northern improvers envisioned themselves as the progressive leaders of regional land development, a small but crucial piece of the broader project of enlightened plantation imperialism. The territorial and economic expansions of the British empire were not just inextricable from environmental change, but complementary and progressive processes, which began with the cultivation of indigenous lands and would culminate in the moderation of extreme climates and environments. British improvers intended to import or domesticate a standard range of economic, ornamental, and companionate plant and animal species—and thereby create an imperial landscape and an enlightened environmental ideal—everywhere they settled.

Since most North American historians date the modern agricultural revolution to the second half of the nineteenth century, few have considered the history of scientific

⁸ Richard Bushman, "Opening the American Countryside," in *The Transformation of Early American History: Society, Authority, and Ideology*, ed. James A. Henretta, et al. (New York: Knopf, 1991), 239-256. See also Rodney C. Loehr, "The Influence of English Agriculture on American Agriculture, 1775-1825," *Agricultural History* 11: 1 (Jan. 1937): 3-15; *Eighteenth-Century Agriculture: A Symposium*. Special issue of *Agricultural History* 1: 43 (Jan. 1969); and Thornton, Tamara P., *Cultivating Gentleman: The Meaning of Country Life Among the Boston Elite, 1785-1860* (New Haven: Yale University Press, 1989).

agriculture—as they have industrialization and market involvement—from a transatlantic, pre-national, or comparative perspective.⁹ Consequently, the imperial origins of agricultural improvement in North America seem obscure and mostly besides the point. All settlers in early America believed they were planting agricultural improvement by transforming native landscapes: the evidence was on full display in their hybrid farms and gardens of fenced maize fields and apple orchards. Wealthier, more pretentious landowners required a more opulent display of their power to effect environmental change and, in New England and Nova Scotia, these self-selected genteel improvers felt particularly pressed to overcome the conventional wisdom among British elites that the northern colonies were “poore, cold, and useless.”¹⁰ Elite northern improvers were keen that the colonized landscape exhibit an orderly neo-European society: transatlantic environmental homogeneity and cultural gentility were their aim.

The region

The geographic scope of this study is regional and transatlantic. Since I examine an area of northeastern North America through several shifts of sovereignty and political boundaries, I use the terms northern, northeastern, Northeast, northern colonies, and northern North America to denote the area between the Gulf of St. Lawrence, the Atlantic Ocean, and Long Island Sound, and north and east of the Hudson and St. Lawrence

⁹ For discussions of agricultural improvement in the 1820s and ‘30s, see Steven Stoll, *Larding the Lean Earth: Soil and Society in Nineteenth Century America* (New York: Hill and Wang, 2002); Peter McClelland, *Sowing Modernity: America’s First Agricultural Revolution* (Ithaca: Cornell University Press, 1997); and Percy Bidwell, “The Agricultural Revolution in New England,” *American Historical Review* 26: 4 (July 1921): 683-702.

¹⁰ Alan Taylor, *American Colonies: The Settling of North America* (New York: Penguin, 2001), Oliver Cromwell quoted on 175.

Rivers. As William Cronon so evocatively describes the nature of New England in *Changes in the Land: Indians, Colonists, and the Ecology of New England*, colonists radically transformed much of the diverse pre-Columbian “patchwork” habitats of coastal salt marshes, mixed forests, wetlands, and alluvial valleys into a market-oriented landscape of property boundaries marking productive agricultural fields. In the broad area that encompassed Acadia/Nova Scotia in the late seventeenth and eighteenth centuries, French and British settlers effected a similar process of agrarian change, at least in those vegetational zones in the Annapolis Valley along the Bay of Fundy coast, in the isthmus between the peninsula and Cape Breton Island, and in the unusually rich soils of Prince Edward Island. Elsewhere in Nova Scotia, colonists harvested the forests and fishing banks; commercial farming at any considerable scale was not feasible, though kitchen gardens provided family subsistence with occasional surpluses for local tables. Notwithstanding the limited agricultural potential of the northern colonies for developing export staples, especially in northern New England and much of Nova Scotia, colonial projectors, local officials, and large proprietors promoted similar schemes throughout the region to recreate in it an Arcadian landscape of empire.

In this roughly defined region of northern North America, I focus on the areas of British imperial interest and colonial settlement, which at various time through the early nineteenth century encompassed present-day southeastern Quebec, eastern New York, Connecticut, Rhode Island, Massachusetts, New Hampshire, Vermont, Maine, New Brunswick, Nova Scotia (including Cape Breton Island), and Prince Edward Island. In each of these areas I interpret local and British manuscript and printed sources related to farming practice, natural history, and land policy such as natural history and chorographic

surveys; the private papers of large proprietors and naturalists; private and institutional correspondence; farmers' diaries, account books, and estate records; the papers of American and British agricultural and scientific societies; contemporary published economic, agricultural, natural historical, geographical, and political literature related to improvement or the northern colonies; and records of colonial administration.

I choose to focus on the broad context of the northern North Atlantic, in part, in order to integrate the agricultural and environmental history of New England with that of Atlantic Canada and Britain, as well as to show the continuities and community among places and peoples that are—in national histories of the period—most commonly treated as discrete regions and whose differences are thus magnified. By studying changes in the meaning and practice of the imperial science of agricultural improvement in the New England/Maritime Canada region, this study elucidates the relationship between colonial ideology, enlightenment culture, and agrarian society in a territorial region of the British Empire, which most outsiders perceived to be a uniformly 'northern,' less hospitable, and less potentially lucrative environment than colonies elsewhere. Indeed, after the American Revolution, the British did not invest equivalent resources into colonizing any northern territory besides Canada.

The periodization of my study—1670 to 1820—begins with the scientific improving projects focused on England and its overseas plantations soon after the founding of the Royal Society through the demise of many of the improving schemes and institutions in the region begun in earnest in the late eighteenth through the turn of the nineteenth century. By the second decade of the nineteenth century, not only did the key generation of northern improvers begin to age and die, the particular forms of public

science to which they were committed also began to lose ground to a resurgent interest in promoting agricultural improvement in the narrower terms of professional science and redefined scope of distinct national interests. The late seventeenth through early nineteenth centuries also mark a period of dramatic territorial expansion and contraction of the British Empire in North America and of increasing activity and organization among improvers throughout the empire encompassing early English and Scottish advances on New France, the British landfall in North America between the Treaty of Utrecht and the end of the Seven Years' War, and the persistence of cultural links throughout the region and the British Atlantic through the end of the Napoleonic Wars. This periodization is somewhat unconventional in terms of war and political change both in British imperial and American history, especially as it downplays the significance of the American Revolution for the history of regional land use and agricultural practice. The Revolution and the redefined political geography of North America did not dramatically change patterns of everyday life for farmers or the ecology of the region. Instead, I will argue that the expansion of the British Empire after the Seven Years' War and the fragmentation of its North American provinces after the Revolutionary War are more consequential for understanding the changing political and economic significance of farming and settlement in the Northeast.

Though the literature and ideas of agricultural improvers were gaining currency throughout the eighteenth century, their rising influence is visible in the increasing formation and activism of local agricultural societies in the post-Revolutionary period.¹¹

¹¹ For example, the Bath and West Agricultural Society, established 1777; Society for Promoting Agriculture (Nova Scotia), 1789; Massachusetts Society for the Promotion of Agriculture, 1792.

Not surprisingly (but somewhat ironically), even with political independence agricultural improvers in the United States continued to look to British agricultural societies for information on how to enhance their farms and thereby, their regional economic position.¹² By comparing the practice of farming and the literature of agricultural improvement in New England and Nova Scotia through the Revolutionary period, I explain how common idioms of traditional agriculture and of progressive techniques influenced farmers—both citizens and subjects—throughout the Atlantic. Though American historians emphasize Thomas Jefferson’s vision of an agrarian republic, his ideal was a variant of a widespread trope in the history of British imperial expansion and the broader discourse of improvement in the eighteenth century.

I situate the aspirations and improving projects of northern scientific agrarians in broader eighteenth century discourses about climate, environment, political economy, and progress. What was the political, economic, and symbolic importance of improving farms in the colonization of North America and in the expansion of the British Empire? How did scientific ideas about climate (particularly temperate climates) affect British colonization schemes and colonial administration? How strong were the regional distinctions between New England and Nova Scotia in the eighteenth through early nineteenth centuries and how were such regional identities formed? What was the relationship between agricultural improvers and the state in its changing forms (the

¹² One example of the North Atlantic network of improvement literature is the citation and reprinting of pamphlets and essays (usually written and published by British writers) among various agricultural societies, such as the 1793 Massachusetts Society’s *Laws and Regulations*, which reprinted two essays from a 1789 *Nova Scotia Magazine*, which had itself extracted the essays from a 1788 Bath Society publication. Massachusetts Society for the Promotion of Agriculture, *Laws and Regulations* (Boston: Thomas Andrews, 1793).

Crown and the colonial, state, and federal governments) through the early nineteenth centuries? When did the distinction between practical and theoretical farming arise in British North America and did it reflect identifiably discrete classes of farmers? Is it possible to discern how practices or innovations of colonial farmers in New England and Nova Scotia contributed to the production of scientific agricultural knowledge in the eighteenth century? How did ordinary versus scientific practices shape northern landscapes differently, especially through the introduction or export of plants, animals, diseases, and practices? How did northern improvers understand nature and assess land-use practices? Did geographical or environmental limits attenuate the goals of agricultural improvement? How did northern improvers perceive and describe the biogeography of the region and how did they propose to change it? Did projects for improvement succeed or fail on the terms defined by local or metropolitan elites and how did they compare to projects attempted elsewhere in the Britain, North America, or elsewhere? How did improvers visualize progress and what were its elements, both as an aesthetic ideal and as a process of environmental or landscape change?

The fragmented historiography of the region

Despite the continuities in Nova Scotia and New England's geography, climate, and history, the colonies that remained in British North America after 1783 are too often neglected in studies of early America and virtually invisible in United States history. Just as British historians have complained that the historiography of the empire has, despite

“all of its avowed intentions to supersede the national historiographies ... not encompassed the settlements, provinces, and dependencies of Greater Britain,” so have American historians tended to limit their definition of the rural North to the geography of New England.¹³

Yet the prospect of transforming the forests of Nova Scotia into an agricultural landscape was in many ways an extreme version—both in terms of environmental factors and the resistance of natives and the earlier French Acadian settlers—of the project of planting New England. Moreover, the persistent interventions of British and colonial New England troops in Acadia over the colonial period; the annexation of New France by the British after the Seven Years’ War; and the migration of thousands of Loyalists into Nova Scotia, not to mention the geographic proximity and resemblance of Acadia to New England, make for compelling reasons for why the two should be considered as a unified region in the colonial period.

But while Nova Scotia and New England formed a contiguous (if unstable) British territory in the late eighteenth century, the threat from the French Empire centered in Quebec and the tenacity of Mi’kmaq and Acadian villagers make the colonial period in Nova Scotia significantly different from that of New England. In addition, the experience of the British in Nova Scotia is especially instructive for challenging monolithic histories of imperial hegemony: British designs for its conquest were

¹³ Armitage, *Ideological Origins of the British Empire*, 21, and “Greater Britain: A Useful Category of Historical Analysis?” *American Historical Review* (Apr. 1999): 427-445; Linda Colley, *The Significance of the Frontier in British History* (Austin: University of Texas Press, 1995). A major exception, though not one that focuses on the Maritime provinces in particular, is Richard White, *The Middle Ground: Indians, Empires, and Republics in the Great Lakes Region, 1650-1815* (New York: Cambridge University Press, 1991).

continually frustrated by the incompetence of colonial officials in understanding the local environment or by potential settlers' lack of commitment to settling lands they perceived as alien or otherwise inhospitable.

Though Acadia officially passed into British hands and was renamed Nova Scotia in 1713, it continued to be repeatedly seized and abandoned by the British throughout the late seventeenth and early eighteenth centuries. New England troops were routinely sent for duty in Nova Scotia, but most were reluctant to stay. Even by the late 1740s, the Board of Trade was still exhorting English and especially Scottish farmers to migrate to the peninsula, though Parliament did not invest enough in the administration of Nova Scotia for such encouragements to make much difference until the mid-1750s. In the late '50s, the governor of Nova Scotia ordered the deportation of children of Acadian farmers to New England. The children were put to work on farms as indentured servants, much to the benefit of New England husbandmen who petitioned colonial officials to continue the practice: "The 'french acadians,' they wrote, 'have been of great use as laborers in assisting the carrying on of our business in agriculture and improvements in general.'"¹⁴

Economies

The bulk of writing on colonial American agriculture in New England has looked forward to the more dynamic economic development of the region in the early nineteenth century. Consequently, a particularly persistent historiographical debate attempts to locate the agrarian origins of the regional transition to capitalism and industrialization. Some scholars have argued that religious doctrine strongly influenced commercial

¹⁴ Quoted in Geoffrey Plank, *An Unsettled Conquest: The British Campaign Against the Peoples of Acadia* (Philadelphia: University of Pennsylvania Press, 2001), 164.

behavior among farmers in New England and, even into the nineteenth century, households were guided by a moral economy engendered within the small, insular, and pietistic communities typical of the northern colonies, rather than by a competitive market ethos. Other historians contend that New England farmers were from the beginning both producers and consumers, reliant on exchanges within both the local and the larger Atlantic economy. Though economic historians have been the most active in taking sides, environmental historians have also contributed studies that show how various kinds of economic decision-making had differential material effects in the colonial and long-term ecology of the region. But there is still no consensus among historians about when the crucial transition occurred—as soon as the proto-capitalist colonists arrived, after the Great Migration of the mid-seventeenth century, or not until well into the nineteenth century.¹⁵

The ambiguity is the result, at least in part, of the numerous community studies of New England towns which have shown a striking diversity of practices even within

¹⁵ For the range of positions in this regional variant of what Jan de Vries has called the moral peasant/acquisitive peasant debate, see Darrett B. Rutman, "Governor Winthrop's Garden Crop: The Significance of Agriculture in the Early Commerce of Massachusetts Bay," *William and Mary Quarterly* 20: 3 (1963): 396-415; James Henretta, "Families and Farms: Mentalite in Early America," *William and Mary Quarterly* 35 (1978): 3-32; Winifred Rothenberg, *From Market-Places to a Market Economy: The Transformation of Rural Massachusetts, 1750-1850* (Chicago: University of Chicago Press, 1992); Allan Kulikoff, "Households and Markets: Towards a New Synthesis of American Agrarian History," *William and Mary Quarterly* 50, (1993): 340-55; Christine Heyrman, *Commerce and Culture: The Maritime Communities of Colonial Massachusetts, 1690-1750* (New York: Norton, 1984); Stephen Innes, *Creating the Commonwealth: The Economic Culture of Puritan New England* (New York: Norton, 1995).

For the iteration of this debate in environmental history see Cronon, *Changes in the Land*; Carolyn Merchant, *Ecological Revolutions: Nature, Gender, and Science in New England* (Chapel Hill: University of North Carolina Press, 1989); Donahue, *The Great Meadow*; and Daniel Vickers, "Those Dammed Shad: Would the River Fisheries of New England Have Survived in the Absence of Industrialization?" *William and Mary Quarterly* 61 (2004): 685-712.

particular colonies and between neighboring towns, including significant differences in the laws and conventions governing land tenure. Richard Bushman has wisely cautioned historians against the simplification inherent in any attempt to definitively model New England's economic development. Instead, Bushman argues that the difficulty of characterizing agriculture in early New England derives from the fact that farmers pursued a mixture of economic strategies and that models of economic development must reflect this composite complexity. There is no reason to assume, after all, that such a profound transition occurred uniformly and synchronously.¹⁶

But in order to understand what motivated farmers to risk new or different strategies (or not), we must have a better understanding of what guided their practices. Few studies of agriculture in the Northeast have attempted to understand the behavior of farmers in the broad context of the imperial economy or the role of the region's small farms in the political economy of empire.

The early history of British settlement in Nova Scotia through the period of Confederation has mostly been written about as an abysmal political and economic failure. While colonies in the warmer zones of the Atlantic were central to imperial concerns (both British and French), the northern colonies, and Nova Scotia in particular, were consistently of marginal interest to imperial strategy or economic policy. Even with the sizable Canadian landfall following British victory in the Seven Years' War, the Maritime Provinces remained a low priority. As the economic historian Gerald S. Graham put it, "only inspired or eccentric minds saw a future in Canada [and] informed

¹⁶ Richard L. Bushman, "Markets and Composite Farms in Early America," *William and Mary Quarterly*, 55 (1998): 351-74.

minds were few and far between.”¹⁷ In debates over the Quebec Act of 1774 and shifts in trade policy after 1783, inspired minds proposed Halifax as a promising new northern entrepot that might outpace Boston. But realizing the commercial potential of Nova Scotia’s fisheries, fur, and timber trades depended first of all on the resolve of Anglophone settlers to establish permanent communities—a project to which most migrants throughout the eighteenth century and even many of the most hopeful Loyalist refugees were ultimately uncommitted.

One historiographic tradition explains the reluctance of British migrants to remain in Nova Scotia simply as an unwillingness to pioneer new settlements in what they perceived as a frigid wilderness. This certainly seems to have been true in the case of Samuel Vetch’s frustrated attempt to attract Scots to Acadia in the early eighteenth century by arguing that its climate and landscape most resembled that of their homeland. As Geoffrey Plank has written: “contrary to Vetch’s expectations, most Scots gravitated to warmer climes. Nova Scotia’s climate was not a positive draw, and for the next thirty years the province would not attract any significant body of civilian immigrants from anywhere in the British Empire.”¹⁸

But as Neil MacKinnon and other historians point out, even if contemporaries perceived the northern environment as unbearably harsh, it was not an uncharted or uninhabited wilderness. The British attempts to conquer and develop the peninsula were difficult in part because other settlers—the Mi’kmaq and French Acadian colonists—already had done so with considerable success. Mi’kmaq and other Native groups had

¹⁷ Graham, *British Policy and Canada, 1774-1791: A Study in Eighteenth Century Trade Policy* (Westport, CT: Greenwood Press, 1974 [1930]), 4.

¹⁸ Geoffrey Plank, *An Unsettled Conquest: The British Campaign Against the Peoples of Acadia* (Philadelphia: University of Pennsylvania Press, 2001), 58.

inhabited the area and established extensive intertribal trading networks for centuries before their first encounters with Europeans in the early sixteenth century. Particularly before the escalation of imperial conflict in the late seventeenth century, French Acadians resourcefully adapted their method of using dikes to drain salt marshes, competed with Mi'kmaq fishermen in exploiting rich coastal waters, and had become active trading partners with New Englanders across the Bay of Fundy.¹⁹ Indeed, only in 1758 after decades of skirmishes between French and British or New England provincial troops, did the British succeed in expelling the majority of Acadian farmers from the peninsula and taking over the lands they had planted.

While most accounts of the economy of early Nova Scotia maintain that its agricultural produce never rose above subsistence level, reappraisals of the importance of the agricultural economy have begun to invite the kinds of debate that long dominated New England economic history. Scholars now argue that Acadian and Nova Scotian farmers, like their competitors in New England, were rational economic actors who attempted to maximize their market involvement. Yet the new interest in the early agricultural history of the Maritime Provinces is motivated by the striking contrast to New England in terms of the Provinces' comparative disadvantages in the industrializing North Atlantic. My examination of eighteenth-century Nova Scotia and New England as a unified region in terms of their environmental constraints, agricultural history, and local elites' relation to the British Empire and its networks of scientific improvement, suggests

¹⁹ Neil MacKinnon, *This Unfriendly Soil: The Loyalist Experience in Nova Scotia, 1783-1791* (Montreal: McGill-Queen's University Press, 1986).

that the emphasis on Nova Scotia as an area of unique and persistent ‘underdevelopment’ in the Northeast is anachronistic.²⁰

The history of agricultural science ‘from below’

Northern improvers optimistically believed that recipes for increasing production and profit were universally practicable, yet their designs for planting progress through better farming were allegedly challenged from below. Contemporary or retrospective perceptions of underdevelopment could seem to be supported by the perennial complaint of eighteenth-century elite improvers—both in Britain and in North America—that ordinary farmers rejected their scientific advice. Citing, among other factors, the resistance or indifference of small farmers to improvement, British agricultural historians have argued for an attenuated view of its impact.²¹ North American historians have similarly engaged in reconsiderations of the capitalist and industrial revolutions in the colonial and early national periods, particularly in accommodating the agency and experience of the agrarian majority in these processes. Most compellingly, social historians have shown that northern American farmers in the seventeenth through early nineteenth centuries were highly localistic and cautious to adopt new practices that threatened their relative autonomy from modern capitalist forces. But historians have

²⁰ Kris Inwood, ed. *Farm, Factory, and Fortune: New Studies in the Economic History of the Maritime Provinces* (Fredericton, New Brunswick: Acadiensis Press, 1993); Margaret Conrad, ed. *They Planted Well: New England Planters in Maritime Canada* (Fredericton, N.B. : Acadiensis Press, 1988).

²¹ G. E. Mingay, ed. *The Agrarian History of England and Wales: 1750-1850* (New York: Cambridge University Press, 1989); Mingay, *The Agricultural Revolution*.

seldom questioned why farmers would have also rejected new ideas or, more problematically, whether we can legitimately assume that they did.

To understand why small farmers in northern British America were slow to accept the advice of agricultural improvers (if in fact they were), I consider scientific land-use practices in relation to the social history of agriculture in New England and Nova Scotia. Common farmers likely resisted agricultural improvers' attempts to standardize agricultural practice for both pragmatic and ideological reasons.

First, ecological constraints limited the applicability of methods derived from more temperate or tropical plantations. While improvement societies encouraged experimentation, North American societies borrowed heavily from methods developed by British improvers and hoped that they would be broadly reproducible. But such models as the Norfolk system for increasing productivity were not universally applicable, in part, because of variations in the ecology and economy of different locales. Some improvement advice assumed the desirability of particular crops without consideration of the variable structure of, or competition within, regional markets; others recommended techniques that required particular environmental conditions that might be too costly for subsistence or small farmers in northern America, such as draining extensive wetlands or investing in equipment to extend the growing season. By design, scientific agriculture was a set of costly techniques practicable only by the minority of wealthy landowners. In addition, once northern improvers adapted universal methods to the conditions of local environments, these supposedly scientific practices may have differed little, or indeed derived from, widespread regional practices.

In ideological terms, if farmers were suspicious of dependence on creditors, it is plausible that they were similarly wary of the consequences of dependence on expert knowledge. However, this second potential source of tensions between scientific and ordinary improvers in early northern America is necessarily speculative: the character of early agricultural sources limit our interpretations of the culture of northern small farmers. Most problematically, we do not know for certain who were the targets of elites' ire; in Chapter 3, I discuss some of the problems in identifying supposedly non-scientific farmers and distinguishing northern farmers based on their methods. As a result, this dissertation focuses instead on the role of scientific agricultural improvement—as a discourse and a practice—in the self-fashioning of northern elite identity.

Environment, Science, Empire

Sustainability has become a catchword of the contemporary environmental and agricultural sciences and the international development policies they inform. But anxieties about the deleterious effects of rapid deforestation and modern agriculture have preoccupied naturalists since the early modern period. Historians have provocatively argued that sustainable development and conservation have their origins in eighteenth century empire-building through the sponsorship of botanical collecting, scientific forestry, and agrarian modernization.²² The officials, scientists, and settlers I have been

²² Richard Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens, and the Origins of Environmentalism, 1600-1860* (New York: Cambridge University Press, 1996); Richard Drayton, *Nature's Government: Science, Imperial Britain, and the*

researching witnessed first-hand the environmental changes wrought by colonization and expressed now-familiar fears of imminent resource depletion, including soil degradation, deforestation, desertification, and fuel scarcity. They also looked for ways to remediate or improve upon what many in the north perceived as their disadvantaged situation (compared to tropical colonies), by enhancing fertility through crop rotations and soil amendments, experimenting with alternative energy supplies such as peat, and extending the growing season by capturing solar energy in green- or hothouses. Despite awareness of the disadvantages of their northern latitude, improvers optimistically believed that techniques for increasing agricultural yields, efficiency, and profitability were universally applicable. In practice, however, their projects often failed and perhaps consequently, few studies of colonial British America have considered the relationship between the fields of scientific and agricultural rhetoric and practice.

But as recent scholarship on science and empire has shown, it was at the remote edges of empire that science and the state first developed mutually reinforcing objectives. The plantation colonies of the West Indies, for example, manifested ideas about enlightened administration and cosmopolitan progress, generating profits for investors and colonial planters at the same time that they seemed to raise the standard of living among the colonized indigenes and enslaved Africans.²³

As overseas colonies—especially those bound to the Atlantic trade in slaves and plantation crops—increasingly represented the most dynamic sphere of the early modern economy of European imperial states, patronage for natural history became linked with

'Improvement' of the World (New Haven: Yale University Press, 2000); Gregory A. Barton, *Empire Forestry and the Origins of Environmentalism* (New York: Cambridge University Press, 2002).

²³ Richard Drayton, "Knowledge and empire," 246.

the needs of the colonial economy. Historians of natural history have paid particular attention to the ways in which men like Joseph Banks were able to craft scientific projects suitable to imperial objectives, such as the promising project of transplanting breadfruit in plantation colonies throughout the empire in order to enhance commerce as well as to fortify both the empire's slave laborers and, ultimately, Britain's maritime strength.²⁴ As Richard Drayton has shown, through their privileged affiliations to the Royal Society and an array of other public and private institutions—the Admiralty, the Board of Trade, the Board of Agriculture, joint-stock associations like the East India Company, and botanical gardens such as the Royal Gardens in Kew—Banks and his patrician cohort emerged as “an informal empire of gentlemanly amateurs ... to span Britain's eighteenth century world.”²⁵

We know that colonists were actively interested in natural history and economic botany. Not only prominent figures like Benjamin Franklin, George Washington, and John Bartram, but also improvers like Connecticut agricultural writer Jared Eliot (1685-1763) and Massachusetts botanist Manasseh Cutler (1722-1801), who corresponded with British agricultural writers Arthur Young, Peter Collinson, and Joseph Banks and were involved in transatlantic seed and plant exchanges, conducted agricultural experiments, and published articles, textbooks, and dictionaries addressing farming practices and agricultural reform. The history of science in eighteenth-century North America has mostly been told as a story of false beginnings, poor imitation, and weak origins. But it is

²⁴ David Mackay, “Agents of empire: Banksian collectors and evaluation of new lands,” in David P. Miller and Peter H. Reill, eds., *Visions of Empire: Voyages, Botany, and Representations of Nature* (New York: Cambridge University Press, 1996), 38-57; Alan Frost, *Sir Joseph Banks and the Transfer of Plants To and From the South Pacific, 1786-1798* (Melbourne: The Colony Press, 1993).

²⁵ Drayton, “Knowledge and empire,” 237.

simultaneously an anachronistic imposition on what science was to those living in the British and former British colonies of North America and a misreading of what colonial Americans meant when they bemoaned their neighbors' lack of interest in scientific pursuits. In the eighteenth-century, elite Americans considered farming as a practice of natural history, a science. Though naturalists debated whether agriculture was wholly reducible to theory, all agreed that it was the primary stimulus to and the beneficiary of experimentation in botany, chemistry, mineralogy, and geology. New approaches to the early modern history of natural history, agricultural improvement, and empire have drawn scholars to study colonies in tropical and semi-tropical climates, but few have examined this history in the cold, temperate northern colonies of British North America.²⁶

To understand changes in the relationship between authority and everyday life, I ask how science entered into the economy and culture of rural northern British Americans and, in turn, how local environmental factors and social relations shaped the discursive practices of science. I also ask how metropolitan and provincial elites defined and visualized progress, particularly as a process of environmental change. I situate the cultural and environmental history of agriculture of the region encompassing Nova Scotia to southern New England in the context of emerging networks of naturalists and the circulation of texts and materials among them and throughout the British Atlantic, revealing overlooked cohesion among the scientific community in the Atlantic world through trans-local networks which persisted despite national political realignments.

²⁶ A notable exception is Christopher Grasso's chapter, "The Experimental Philosophy of Farming: Jared Eliot and the Cultivation of Connecticut," in his *A Speaking Aristocracy: Transforming Public Discourse in Eighteenth-Century Connecticut* (Chapel Hill: University of North Carolina Press, 1999); see Jared Eliot, *Essays Upon Field-Husbandry in New England...* (Boston: Edes and Gill, 1760).

Alongside such solidarities, I emphasize conflicts at the local level between gentry elites and ordinary people over the definition of legitimate land-use practices and property rights. Northern improvers optimistically believed that recipes for increasing production and profit were universally practicable, yet their designs for planting progress through better farming were challenged from two directions. Farmers resisted scientific advice and ecological constraints limited the applicability of methods derived from more temperate or tropical plantations. Nevertheless, I argue that elites employed the rhetoric of science, progress, and modernity and flaunted their privileged access to transatlantic networks to distinguish their pursuits from those of their neighbors. Scientific agricultural methods adapted to the local environment often resembled, or derived from, widespread regional practices. Until recently, science has been largely marginalized in the history of early America; my research shows its centrality to eighteenth-century ideas and projects for re-engineering the environment as well as to the formation of cosmopolitan gentility.

The chapters are organized thematically. I begin with an overview of the study, contextualizing early American improvement in relation to late Enlightenment debates about the utility of natural history to colonization and economic development throughout the British Atlantic world. Chapter 2, “Networking Improvement: Northerners and Transatlantic Networks of Natural History,” describes the formation of personal, commercial, and political relationships among northern American and European naturalists and improvers (or, naturalist-improvers).²⁷ Though widespread, eighteenth

²⁷ American historians are peculiar—with the exception of a small number of colonial historians—in restricting their use of the term improvement to refer to the nineteenth century engineering projects, such as bridge, road, and canal-building, that assisted the

century colonial improvement was not institutionally-based. Neither was it centralized in London or the more urbanized areas of coastal North America. Rather, early North American improvers promoted agricultural modernization through networks that linked local elites throughout the Atlantic world and the British empire. Improvers conducted experiments in private gardens; exchanged advice, published treatises, planting stock, and botanical and zoological specimens through their correspondence networks; and organized local learned and agricultural societies, breeding contests, exchanges of plant and animal specimens. Although the founding of North American learned societies gained ground after the Revolution, I argue that such scientific collaborations were outgrowths of the informal networks originating in, and typical of, the British Empire. Northern improvers constituted one regional hub within the increasingly global scientific community.

The third, fourth, and fifth chapters look in detail at improvement ideology, discourse, and projects for local agricultural reform in the North. Chapter 3, “The Discourse of Colonial Improvement,” surveys local elites’ and foreign travelers’

westward expansion of United States private, state, and federal property. Throughout this study, I use the terms improver or naturalist-improvers (more or less interchangeably), to describe elites who engaged in natural history, botany, and agricultural science or were prominent land and real estate developers in Europe, Britain, and the British empire. As will be clear in the chapters that follow, however, the term improvement was pervasive though few to none of my sources identified themselves in writing as improvers, per se, the term is standard in the secondary literature indeed, dating back to the eighteenth or early nineteenth centuries. In his American “glossary of provincialisms,” philologist John Pickering noted that he “do not recollect seeing improve applied to houses (as it now is) or any thing but lands, in the old laws of Massachusetts. Though this verb is so common in New England, the corresponding noun, improver, is not in use; but we always say, the occupier or occupant of a house, or land. I have, however, once met with the noun improver in the Laws of Massachusetts.” John Pickering, *A Vocabulary, or Collection of Words and Phrases Which Have Supposed to be Peculiar to the United States of America* (Cambridge, Ma.: 1816), 111-112.

critiques of common northern farming practices and discusses the emerging belief that scientific agriculture was superior to vernacular modes. While pointing to the generic qualities of improvement literature as a subgenre of Enlightenment natural history, I discuss the idiosyncratic features of northern improvers' writings, including their interest in describing (and ultimately transcending) local ecological limitations.

Chapter 4, "Cold Comfort: The Improvement of a Northern Climate," focuses on improvement discourse specifically about nature and geography, northern improvers' perceptions of the regional climate, and transatlantic debates about how to understand the northern colonial environment in relation to enlightenment maps of the world. Though geographical and natural history surveys were a longstanding colonial literary tradition, in the last quarter of the eighteenth century they became an increasingly popular genre and, it was hoped, a strategy to counteract notions about northern bleakness in order to attract fresh waves of investment and immigration. Northern improvers were loathe to confirm speculations about the infertility of northern soils or the inconvenience of the climate, especially the severity of seasonal temperature extremes. Here also I address the historical geography of northern British America, specifically the unity and fragmentation of New England and Nova Scotia as a regional network within the British Atlantic world from the seventeenth through early nineteenth centuries and consider the extent to which this geographical unit cohered in the eighteenth-century imagination (rather than merely as an artifact of my research design).

Finally, Chapter 5, "Planting Improvement," examines scientific agriculture as a program for social reform, specifically northerners' projects for engaging recalcitrant Indians, African-Americans, Acadians, Loyalists, women, children, criminals, and the

poor in botany and agricultural science. I conclude by analyzing these broad ambitions in relation to northern improvers' allegations of widespread indifference (or their own failure to popularize) a scientific approach to managing the northern environment.

Chapter 2
Networking Improvement: Northerners and Transatlantic Networks of Natural History

“God Save the United States of American and so forth and so forth I mean God Save the United States of Britan and so forth and so forth.”¹

—A farmer in Hingham, Massachusetts, 1774

In late summer 1797 Sarah and Benjamin Vaughan moved with their children to the township of Hallowell on the Kennebec River in the District of Maine. This northern hinterland of Massachusetts was heavily forested, thinly populated, and far from the people they knew in Edinburgh, London, Paris, Jamaica, Philadelphia, and Boston. But as part of an extended family of empire, the Vaughans were accustomed to bridging distances. While migrants with few resources struggled to settle themselves in the District’s rugged coastlands “without friends or neighbors,” as one poor man put it, the Vaughans could rely on a vast network of kin, business, and social contacts.² Since the early eighteenth-century their extended family had straddled the Atlantic with investments in estates and plantations throughout Britain, the West Indies, and North America, living for brief periods in each place and maintaining contacts with their local agents everywhere. The relocation of Benjamin and Sarah’s household from London to

¹ October 17?, 1774, Quincy Thaxter Journal, 1774-78, Thaxter Family Papers, 1774-1791, Ms. N-1655, MHS.

² William Allen, Jr. quoted in Alan Taylor, *Liberty Men and Great Proprietors: The Revolutionary Settlement on the Maine Frontier, 1760-1820* (Chapel Hill: University of North Carolina Press, 1990), 66.

Hallowell (named after its founder, Benjamin's maternal grandfather), was in many ways the larger family's most recent venture in land development.

Benjamin was a prominent figure in British politics and science. He had been a member of the House of Commons, trained as a physician in Edinburgh, and associated closely with Sir Joseph Banks, Jeremy Bentham, Joseph Priestley, and Benjamin Franklin. He conceded to his brother-in-law in London that going to the New England backwoods meant "resign[ing] all concern with *place* & with active polities." But this demotion was only temporary—the Vaughans were among the largest landowners and most eminent families in the District of Maine.³

By maintaining contact with an extensive web of connections, the Vaughans and other resident elites would be the leading agents of improvement in the northern borderlands. Citing the reduction of "Indians and other enemies," the advent of "powerful patrons" like themselves, and the revival of the Kennebec Agricultural Society (KAS), first organized by Benjamin's brother Charles in the 1780s, Benjamin projected the river port of Hallowell would soon be as populous and productive as southern New England towns.⁴ Rather than severing cosmopolitan ties, the Vaughans' move to Maine potentially broadened the scope of their transatlantic community.⁵

In the eighteenth century, scientific approaches to agriculture and land

³ Mrs. Benjamin Vaughan to Charles Vaughan, September 1797, Carton 1: 1774-1804, Vaughan Family Papers, Correspondence, 1773-1812, Massachusetts Historical Society (VFP, MHS)[Photocopy of an APS doc; Permission needed for publication or repro from APS].

⁴ BV to William Manning, August 20, 1797 (emphasis in the original), Carton 1: 1774-1804, Correspondence, 1773-1812, VFP, MHS; Craig C. Murray, *Benjamin Vaughan: The Life of an Anglo-American Intellectual* (New York: Arno Press, 1982).

⁵ On cosmopolitanism as an ideal of enlightened Americans, see Gordon Wood, *The Radicalism of the American Revolution* (New York: Vintage, 1991), esp. 221-222.

management became prime topics of conversation among propertied elites throughout Britain and its colonial (and former colonial) territories. Despite differences of rank between colonial, provincial, and metropolitan elites and—especially during the upheavals of the late eighteenth century—political sympathies, agricultural improvers throughout the British empire were united by their interests in the reciprocal benefits of property development and the study of scientific agriculture. Through numerous, sometimes overlapping collaborations in official and private projects—from colonial land sales and resettlement schemes to the formation of social clubs, learned societies, and botanical gardens—improvers comprised a far-flung community of self-styled expertise.

Naturalist-improvers in Britain and North America debated the terms and merits of the methodology, descriptive techniques, and experimental results of their efforts to apply research in botany, zoology, chemistry, mineralogy, and geography to the management of wastelands, private estates, newly conquered territories, and colonial land grants. Britons and Americans exchanged organic materials, instruments, and publications through private correspondence, the re-publication of improvement tracts, agricultural society meetings, garden tours, or through the person of the professional gardener. In doing so, they forged and maintained ties with one another as members of a broad imperial and international network of government officials, landowners, speculators, intellectuals, and families convinced of the virtue of their progressive leadership.⁶

Naturalist-improvers in New England and Nova Scotia—much as improvers in

⁶ Improvement also transcended sectarian differences. The northern improvers I have researched variously belonged to Congregational, Presbyterian, and Unitarian churches, as well as smaller Christian sects.

many British, colonial, and former colonial provinces—formed an informal, trans-local association of elites in northern America whose power in controlling land markets and land use, they believed, was enhanced by their acceptance within networks of improvement. Through most of the eighteenth century, northern improvers were not unique in their desire to intensify both regional and widespread interconnections with other naturalist-improvers. American figures “known in both Englands” specifically for their scientific accomplishments such as Benjamin Franklin or Benjamin Smith Barton, were more famous than most of the eighteenth-century naturalist-improvers in New England and Nova Scotia, but they were not unique in their participation in the “Republick of Letters.”⁷ During the wars, political revolutions, and changing constituency of British America in the last quarter of the century, northern improvers made sure that both the regional and the global aspects of these connections survived the “unnatural” political break and transcended local or national boundaries. As Benjamin Waterhouse wrote to Sir Joseph Banks in 1793: “I really wish to see (as you express it) the claims of consanguinity renewed which subsisted before the war, especially among the men of Science, who if I mistake not, ultimately govern both countries.”⁸

⁷ Jonathan Todd to Jared Eliot, March. 6, 1753, ALS, APS. Wood, *The Radicalism of the American Revolution*, 221-222.

⁸ JB to Benjamin Waterhouse (BW), n.d., BW-H MS c16.4 (unnatural); BW to JB, December 20, 1793, BL Add. Mss. 8098.305-306 (consanguinity). Most historians of early American science argue instead that the Revolution marked a crucial break between ‘colonial’ and ‘national’ science. See Andrew J. Lewis, “A Democracy of Facts, An Empire of Reason: Swallow Submersion and Natural History in the Early American Republic,” *WMQ* 62: 4 (October 2005): 663-696; Joyce E. Chaplin, “Nature and Nation: Natural History in Context,” *Stuffing Birds, Pressing Plants, Shaping Knowledge: Natural History in North America, 1730-1860*, ed. Sue Ann Prince (Philadelphia: American Philosophical Society, 2003), 76-96. See also footnote 23, below.

Atlantic networks of improvement

The American Revolution transformed the political geography of Britain's Atlantic empire but it did not completely disrupt the trans-local networks and informal ties among North American and British elites. Trans-local networks formed the characteristic structure of the larger British empire from the seventeenth century through second quarter of the nineteenth century.⁹ Trans-local relationships among improving landowners in northern America and their contacts abroad persisted despite the radical break of the Thirteen Colonies from the British empire. Common agricultural practices, the real estate market, and patterns of land distribution, ownership, and inheritance did not change radically in North America in the three decades following the American Revolution. Relationships between improvers—even between those with otherwise opposed ideological commitments—likewise endured through the Revolution, at least

⁹ On the formation of commercial, political, and associational networks in the British Atlantic, see H.V. Bowen, *Elites, Enterprise, and the Making of the British Overseas Empire, 1688-1775* (New York: St. Martin's, 1996); David Hancock, *Citizens of the World: London Merchants and the Integration of the British Atlantic Community, 1735-1785* (New York: Cambridge University Press, 1995); and Alison G. Olson, *Making the Empire Work: London and American Interest Groups, 1690-1790* (Cambridge: Harvard University Press, 1992). Historians of the British empire conventionally use the American Revolution to mark a radical break between supposedly distinct 'first' and 'second' empires. There is considerable debate about whether the Revolution was a crucial or additional cause for imperial change in the late eighteenth century, especially the broad shift in colonizing interests from the Atlantic to the Indian and Pacific Oceans after the Seven Years War. See Vincent Harlow, *The Founding of the Second British Empire, 1763-1793*, 2 vols. (London: 1952-64); C.A. Bayly, *Imperial Meridian: The British Empire and the World, 1780-1830* (New York: Longman, 1989); and P.J. Marshall, "Britain Without America—A Second Empire?" in P.J. Marshall, ed., *The Oxford History of the British Empire*, vol. 2, *The Eighteenth Century* (New York: Oxford University Press, 1998), 576-595.

inasmuch as they could be defined as scientific exchanges in which 'useful' but apolitical information was communicated.

In Britain Benjamin Vaughan was a reforming MP, a republican, and a supporter of the French Revolution. In 1794 he fled London while his family emigrated to America, was briefly arrested and imprisoned in Paris, and spent several years in France and Switzerland waiting for authorization to join his wife and children. Moving to the United States forced him to "renounce all politics," including answering frequent queries from Britain and France about his opinion on contemporary controversies (he was especially wary of expressing himself when the Alien and Sedition Acts were in effect).

His friend William Russell asked:

With what propriety can any one call this a Land of Liberty? I ever did and always shall think that no Government can be properly esteem'd free where opinion is not permitted to circulate freely & every subject suffer'd to be fairly discussed.

Apparently scientific pursuits, especially in relation to agriculture and natural history, could transcend partisan loyalties. In the same letter, Russell freely discussed apiculture, hemp and flax prices, and his successes in raising English breeds of sheep and pigs in Connecticut.¹⁰ Vaughan's correspondence from Hallowell with "various friends on the continent of Europe" on agricultural improvement, natural history, and medical botany was constant.¹¹ He would respond to letters sent from Europe discussing the "dangerous tendency of French reformation in Government and Religion," with news about his

¹⁰ William Russell to BV, May 3, 1800, Carton 1: Folder: Correspondence, February-May 1800, VFP, MHS.

¹¹ BV to Samuel & Sarah Vaughan, Sept. 25, 1798, Carton 1: Folder: Correspondence, July-September, 1798, VFP, APS [Photocopy MHS].

Hallowell farm. “The returns from this field,” Benjamin’s uncle in Valance agreed, “are more to be depended on than from the stormy field of modern politics.”¹²

When they finished their presidential terms, both George Washington and John Adams looked forward to focusing on farming and improvement. “Having escaped the whirlpool of politics,” in 1801, Adams became more engaged in promoting natural history and agricultural improvement in the AAAS and the MSPA.¹³ At the end of the War of 1812, prominent MSPA member John Lowell believed that the “present perfection” of British and French agriculture was undeniable “even by those who feel the strongest national partialities.” He encouraged the MSPA to continue networking with foreign colleagues since:

vast benefits have arisen to those countries from the exertions of well informed & opulent individuals associating for the purpose of collecting and spreading the improvements made in different parts of those countries in the important science of agriculture.¹⁴

Even if political tensions sometimes irreconcilably divided improvers or potentially lucrative technical innovations or economic plants were protected from publicity, a commitment to improvement was itself uncontroversial among the gentry throughout the Atlantic world.¹⁵ Loyalists and republicans who resettled during and

¹² BV to Samuel and Sarah Vaughan, Sept. 25, 1798, VFP, [American Philosophical Society]; Murray, *Benjamin Vaughan*, 384-387.

¹³ Joseph Ellis, *His Excellency: George Washington* (New York: Knopf, 2005), 150; BW to Jean Luzac, October 20, 1805, Benjamin Waterhouse Papers (B MS c10.1), Harvard Medical Library in the Francis A. Countway Library of Medicine.

¹⁴ John Lowell to MSPA, June 7, 1813, Folder 1, Box 19, MSPA, MHS.

¹⁵ John Adams was peculiar in his refusal to accept membership in foreign agricultural societies or to engage in correspondence with Sir John Sinclair in the 1790s. He allowed all kinds of personal and political differences to interfere with the business of the MSPA when he was the Society’s president from 1805-13. But despite Adams’s prominence, his grudges did not significantly disrupt the MSPA’s national and international contacts.

after the Revolution moved largely within the British Atlantic.¹⁶ During wartime and regime change, networks among friends and collaborators interested in science proved more resilient than scientific institutions and through the turn of the century, relationships among improving individuals and families scattered across Europe, the United States, British North America and the Caribbean remained coherent.

After the revolutions in America and France, networks of improvement were rearranged, not broken. The Vaughans' ongoing correspondence with their friends William Russell and Joseph Priestley, who had emigrated with their families in the late eighteenth century from Birmingham, England to Connecticut and Pennsylvania, respectively, illustrates how networks of improvement were reconstituted as correspondences between new locations. All three families fled England for political reasons and, though some believed that the Priestleys had ended up in "a bad situation and on bad soil," the other two established themselves on New England farms with the help of local family and friends. Soon after they arrived in Boston, Russell's son recalled: "we were waited upon by many gentlemen of the town." At the same time, his "father while at Boston was made an honorary member both of the Human and Agricultural Societies there, the latter of which he frequently attended, and speaks highly of the intelligence and enterprise of its members."¹⁷ The Vaughans established a plant nursery and ran the KAS; the Russells had a livestock breeding operation. They swapped

See Tamara P. Thornton, *Cultivating Gentleman: The Meaning of Country Life Among the Boston Elite, 1785-1860* (New Haven: Yale University Press, 1989), 36-37, 213-215.

¹⁶ Newspaper notices for marriages between elites who stayed in New England and those who moved to Nova Scotia after the Revolution were not uncommon. August 28, 1790, *Columbian Centinel*.

¹⁷ S.H. Jeyes, *The Russells of Birmingham in the French Revolution and in America, 1791-1814* (London: George Allen, 1911), 195-203; Aaron Dexter to William Russell, Middletown, September 30, 1797, Box 15 Folder: 42, no. 59-72, MSPA, MHS.

stone fruit scions and Leicestershire swine and corresponded frequently with each other and with the MSPA.¹⁸

Continuities are also evident in the regional collaborations between local elites to the north and south of the new national boundary between the United States and British North America. The minister Titus Smith had been raised and educated in New Haven but in the late 1760s converted to the pacifist Sandemanian faith and evacuated to a Loyalist camp during the American Revolution. In 1783 he resettled in Halifax. There he worked as a provincial land surveyor and studied, wrote about, and promoted local natural history and agricultural improvement through the 1840s, maintaining a correspondence on these subjects with his siblings and friends in America, including David Humphreys, a former minister to Spain, close advisor to George Washington, member of the MSPA, and importer and breeder of merino sheep.¹⁹

John Wentworth, the pre-revolutionary governor of New Hampshire and Benjamin Thompson, a Massachusetts schoolteacher and improver, had been close friends in the 1760s and '70s. Both sided with the British in the Revolutionary War and afterwards moved to England. Thompson remained in Europe, was knighted by George III, and made a count of the Holy Roman Empire (after which he changed his name to Rumford); Wentworth was made a baronet and returned to British North America as lieutenant-governor of Nova Scotia. Family members who stayed in the United States

¹⁸ William Russell to BV, May 3, 1800, Carton 1: Folder: Correspondence, February-May 1800, VFP, MHS.

¹⁹ Miscellaneous correspondence, Titus Smith Papers, MG1 Vol. 1773, NSARM. "Titus Smith," *Dictionary of Canadian Biography online*, <http://www.biographi.ca/EN/ShowBio.asp?BioId=37790&query=titus%20AND%20smith>. Accessed 10/10/06; Thomas Brewer to Samuel Pomeroy, March 25, 1807, Box 20, Folder 7, MSPA, MHS.

criticized Rumford for maintaining his friendship with a Tory like Wentworth, but Rumford protested that, though the two had “a long correspondence,” it always concerned “purely private and friendly” discussions of natural history, improvement, and other matters “not political.”²⁰

For his part, Wentworth had ongoing ties with Americans. A French traveler in North America in 1793 visited Wentworth in Halifax and in his “pretty country house, situated two leagues from there,” where the lieutenant-governor offered him “all the good offices in his power while we stayed in his territory; and when we decided to leave it, he also had the kindness to provide us with the best of recommendations for Canada and the United States.”²¹ And despite Rumford’s continued service to European monarchs, in 1796 the American Academy of Arts and Sciences (AAAS) accepted his endowment of a prize in his name for scientific “discovery or useful improvement” in knowledge about heat or light. Nor did it bother the AAAS that Rumford simultaneously endowed a similar prize at the Royal Society.²² Mutual regard between members of the AAAS and Rumford continued through the turn of the century. Twenty years after Rumford’s gift to the organization, one member—though, he submitted, “an unworthy one”—was asked by

²⁰ From a letter between Rumford and Timothy Walker, quoted in Jared Sparks, ed. *Lives of Count Rumford, Zebulon Pike, and Samuel Gorton. Library of American Biography, Second Series* v. 5 (Boston: Little and Brown, 1848), 212-213; Sanford Brown, *Benjamin Thompson, Count Rumford* (Cambridge: MIT Press, 1979), 96-97. On Rumford as an improver, see Brown, *Benjamin Thompson*, and Gwendy Caroe, *The Royal Institution: An Informal History* (London: Jon Murray, 1985).

²¹ Bénigne Charles Fevret de Saint-Mesmin, June 12, 1793 [in *Public Archives of Nova Scotia Report for the Year 1946* p. xxvii], MG1 vol. 1520 #FF, NSARM.

²² Brown, *Benjamin Thompson*, 173-176.

others to “offer his respect to Count Rumford” by writing the expatriate that “in the Northern part of the Union we are beginning to pay some attention to Nat’l History.”²³

In the early United States, the founding of learned and agricultural societies gained ground after the Treaty of Paris, but clearly these associations were outgrowths of the informal networks of improvement originating in and typical of the British Empire rather than institutional novelties inspired by the American Revolution.²⁴ Benjamin Waterhouse, Harvard professor of medicine, supported American independence, but in 1787 he sought the patronage of Sir Joseph Banks, President of the Royal Society, to help the university build its natural history library. “We look up to the english as our elder bretheren in Science, & hope to be continually instructed by their labours,” wrote Waterhouse. “Should there be any thing in the line of Natl. History that I could serve Sir Joseph Banks in, he need only communicate it.”²⁵ Waterhouse’s colleague Samuel Williams, recently arrived in Vermont, was also ready to serve the president, writing to Banks in 1789: “I wish to do all the services in my power for the Society, by collecting

²³ The member was William Dandridge Peck. Dudley Tyng, “Extract from the Minutes,” October 30, 1806?, [copy], Box 2: Papers, 1805-07, Papers of William Dandridge Peck, Harvard University Archives (WDP Papers).

²⁴ This perspective differs from the majority of studies of early American science, which view the American Revolution as a crucial break in the development of scientific institutions. Most of these works have therefore explained the history of American science up to 1776 or after 1783, without addressing the continuities across conventional periods of national history and between the new United States and the colonies that remained within British North America. See Brooke Hindle, *The Pursuit of Science in Revolutionary America* (Chapel Hill: University of North Carolina Press, 1956); Raymond P. Stearns, *Science in the British Colonies of America* (Urbana: University of Illinois Press, 1970); John C. Greene, *American Science in the Age of Jefferson* (Ames: Iowa State University Press, 1984); Susan Scott Parrish, *American Curiosity: Cultures of Natural History in the Colonial British Atlantic World* (Chapel Hill: University of North Carolina Press, 2006).

²⁵ BW to Joseph Banks (JB), August 10, 1787, British Library Add. Mss. 8096.550, (BL Add. Mss.).

materials for useful knowledge in this unobserved part of America.”²⁶ And as Waterhouse assured Banks in 1793, “The people of these States regard the Sovereign of England as a monarch preeminently distinguished ... for his love for the useful and elegant arts.”²⁷

After the Revolution the theory and practice of improvement continued to develop through transatlantic networks of acquaintance. When Manasseh Cutler presented his research on the flora of Massachusetts to the AAAS in 1785 (which they published as a catalogue that year), his reputation expanded beyond the coterie of naturalist-improvers in New England. Soon after Cutler’s AAAS presentation, his friend received a letter from Lunar Society member and botanist Jonathan Stokes, who had requested a correspondence with Cutler.²⁸ In 1787, Benjamin Vaughan’s brother John Vaughan, secretary of the American Philosophical Society (APS) gave Cutler a tour of the Pennsylvania State House’s public gardens (landscaped with support from John and Benjamin’s father, Samuel Vaughan), met with Benjamin Franklin and studied his copy of Linnaeus’s *Systema vegetabilium*, and was introduced to the visitor La Rochefoucauld-Liancourt, a close friend of Arthur Young.²⁹ Eventually Cutler’s correspondents included prominent naturalists in England, Germany, Switzerland, and Italy and he began to receive foreign naturalists like Luigi Castiglioni, an “accomplished botanist” who was

²⁶ Samuel Williams to JB, September 16, 1789, BL Add. Mss. 8097.358.

²⁷ BW to JB, December 20, 1793, BL Add. Mss. 8098.305-306.

²⁸ [Cutler diary entry], June 14, 1785, Cutler and Cutler, *Life, Journals and Correspondence*, 115.

²⁹ John C. Greene, *American Science in the Age of Jefferson* (Ames: Iowa State University Press, 1984), 38-39, 45; La Rochefoucauld-Liancourt, *Travels through the United States of North America, The Country of the Iroquois, and Upper Canada, in the Years 1795, 1796, and 1797... With an Authentic Account of Lower Canada*. trans. H. Neuman, 2nd ed. 4 v. (London, 1800), v 1: preface.

informed that Cutler was “a gentleman better acquainted with Botany, etc. ... than any other person in the Country.”³⁰ The transatlantic community of eighteenth-century naturalist-improvers was a far-flung but small world.

Tenacious or newly formed transatlantic connections were reflected in the membership lists of agricultural improvement societies. In 1787, James Bowdoin, a former governor of Massachusetts and founder of an eponymous college in Maine, was elected a member of the Royal Society (through the recommendation of Waterhouse and Sir John Temple, the British Consul-General in New York).³¹ In the 1790s, the British Board of Agriculture (BBA) solicited John Adams, Thomas Jefferson, George Washington, and other prominent Americans’ farming advice and appointed them as members; in turn, agricultural societies throughout North America, including societies in New England and Nova Scotia, nominated improvers in other provinces, states, and countries as corresponding, foreign, or honorary members.³²

Trans-local networks were also the basis on which improving projects or emerging organizations for promoting natural history were founded. The Nova Scotia Society for Promoting Agriculture (NSSPA) admitted as members William Quarrell and Alexander Ochterloney, two colonial officials in Jamaica connected to Lieutenant

³⁰ Aaron Dexter to MC, June 20, 1785; [Cutler diary entry] June 23, 1785, in Cutler and Cutler, *Life, Journals and Correspondence*, 115-116.

³¹ Sir John Temple to JB, October 3, 1787, BL Addl. Mss. 8096.527.

³² John Adams was admitted as a member April 11, 1797, List of Members, RASE-B.XI and Old Board of Agriculture Letter Books, 1794-1809, RASE-B.XIII, Museum of English Rural Life, Reading, England (MERL); William Strickland to Oliver Smith, March 2, 1797, Box 20, Folder 8: no. 22-42 and Box 1: Folders 6, 11, MSPA, MHS; [Sir John Sinclair’s calling card, signed by Sinclair and given to Nova Scotia improver “John Young (Agricola)”] MG 100 v. 229 #26, NSARM. Thornton, *Cultivating Gentleman*, 89.

Governor John Wentworth, who had supervised the removal of Trelawney Maroons to Nova Scotia in 1796.³³

Before William Dandridge Peck started teaching natural history at Harvard, he toured European scientific societies and private estates to make contacts with botanical gardeners, naturalists, and improvers, including Sir Joseph Banks, Sir John Sinclair, William Aiton, Samuel Vaughan, and Charles Konig (assistant keeper of natural history at the British Museum). At one of their breakfasts together Waterhouse presented Banks with the transactions of the MSPA. Making such contacts was as important as gathering ideas and materials for designing the botanical garden that was part of Peck's duties.³⁴

Northern improvers constituted one regional hub within the increasingly global community of natural history and improvement that took shape in the mid-eighteenth through nineteenth centuries. In 1760 farmers could learn from Nathaniel Ames's almanac that naturalists were being sent by various scientific academies to observe the transit of Venus the following year from "different and distant Parts of the Earth at the same real Moment of Time,"

the Royal Society in London to send proper Persons to St. Helena and Beccolon, and also to Hudson's Bay. The French King has sent one of the Royal Academy of Sciences to Pondicherry, in the East-Indies, the Academy of Petersburg to Siberia.³⁵

³³ January 31, 1797, *Nova Scotia Gazette and Weekly Chronicle*; Lennox O'Riley Picart, *The Trelawny Maroons and Sir John Wentworth: The Struggle to Maintain Their Culture, 1796-1800* (MA Thesis, University of New Brunswick, 1993).

³⁴ Peck to [his sister], September 1, 1805, Box 2: Papers, 1805-07, WDP Papers. Asher Robbins, *An Address to the Society for the Promotion of Agriculture and other Useful Arts in the State of Rhode-Island...* (Newport: 1802).

³⁵ Nathaniel Ames, *An Astronomical Diary, or An Almanack ... Calculated for the Meridian of Boston in New-England* (Boston, 1760). John Winthrop, Harvard Professor of Mathematics and Natural Philosophy and Fellow of the RS, had communicated meteorological observations to the RS since the 1740s and led the Massachusetts

Ames also reminded New England farmers of their importance to imperial mercantile interests. “Publick-spirited gentlemen” were lately promoting potash as a soil amendment, for which “Great-Britain used to send vast sums of money to Russia, Norway, and other woody countries.” “Now,” Ames wrote in the preface to his 1767 almanac, production of the fertilizer “centers here.”³⁶

To manufacture potash, Ames “heartily” recommended “to the perusal of every farmer in the country Mr. Eliot’s essays on field husbandry, as it is or may be ordered in new-England”—a work he knew had circulated beyond the limits of ‘the country.’³⁷ Connecticut minister Jared Eliot (1685-1763) was a widely recognized colonial improver after the circulation of his *Essays Upon Field-Husbandry in New England: As It Is or May Be Ordered* (published as a series between 1748 and 1761), the first published American text on agricultural improvement.³⁸ In them, Eliot adapted English improver Jethro Tull’s celebrated drill plow techniques to local circumstances—he proposed simpler and cheaper methods—and described the techniques of resourceful farmers in southern Connecticut. His essays were as much the product of discussions about agricultural science with contemporary improvers in England and British America, including Edmund Quincy of Boston, Benjamin Franklin and John Bartram of Philadelphia, and Charles Read of New Jersey, all to whom Eliot was “indebted for many

expedition to measure the 1761 transit in Newfoundland. Raymond P. Stearns, *Science in the British Colonies of America* (Urbana: University of Illinois Press, 1970), 646-655.

³⁶ Ames, *An Astronomical Diary* (Boston, 1766).

³⁷ Ames, *An Astronomical Diary* (Boston, 1766).

³⁸ For a close analysis of Eliot’s rhetoric in the *Essays*, see Christopher Grasso, *A Speaking Aristocracy: Transforming Public Discourse in Eighteenth-Century Connecticut* (Chapel Hill: University of North Carolina Press, 1999), 190-229.

useful Hints and Observations.”³⁹ The essays especially impressed Royal Society botanist and promoter of colonial science, Peter Collinson and Norfolk farmer Richard Jackson, both of whom knew about Eliot’s writings through Franklin. Collinson and Jackson endorsed the essays to other improvers in England and took up a correspondence with Eliot, sending him foreign seeds and the proprietary results of crop rotation experiments.⁴⁰

Broadcasting Improvement

Agricultural literature, most of it published in London or reprinted in Boston, had circulated among southern New England improvers from the earliest settlements in the seventeenth century. Jared Eliot’s essays were the most conspicuous work of agricultural improvement produced in pre-Revolutionary British America. Other improvement literature circulated publicly in colonial newspapers. In the first issue of *The Nova Scotia Chronicle and Weekly Advertiser* in 1769, the publisher solicited: “Gentlemen of Experience and Knowledge (of whom there are many in this Colony) would lay before the Public, their Experiments and Discoveries, as well in Husbandry as in the other Arts

³⁹ September 12, 1751, Benjamin Franklin to Jared Eliot, ALS, Yale University Library (accessed online 12/31/06: 622959 = 004-192a.html); Jared Eliot, *Essays Upon Field-Husbandry in New England and Other Places, 1748-62* ed. Harry Carman, et al. (New York: Columbia University Press, 1934), 63-64, 90-96.

⁴⁰ On Collinson’s extensive promotion of North American colonial botany, see Raymond P. Stearns, *Science in the British Colonies of America* (Urbana: University of Illinois Press, 1970), 515-516.

and Sciences, by the Channel of his Paper: Such a Correspondence would be a public Benefit.”⁴¹ Mostly they reprinted farming tips and discoveries in natural history garnered from British and other colonial papers, especially if the news or advice came from a naturalist-improver who was recognized throughout the British Atlantic world. For example, in 1790 *The Halifax Journal* published John Coakely Lettsom’s translation of a French publication on mangelwurzels (*Beta vulgaris*) as a cheap fodder.⁴² The same was true of provincial agricultural society publications or the oral reports delivered at society meetings, as when the MSPA read aloud extracts from Arthur Young’s *Annals of Agriculture* and the livestock improver Robert Bakewell’s “Rules” for breeding ‘in-and-in.’⁴³

Agricultural societies like the MSPA and other kinds of learned societies, civic associations, and social clubs to support improvement in various guises proliferated in the late eighteenth century. But agricultural improvement in British North America and the early United States was not centralized in such organizations nor geographically confined within provincial, imperial, or national borders. As Benjamin Waterhouse worked to expand Harvard’s mineralogical collection, he promised the Corporation that he would circulate a description of the collection:

to every scientific man within my knowledge, in the United States, as well as in Canada and Nova Scotia; and thereby extit[e] an attention to this branch of science beyond my sanguine expectations.⁴⁴

In the early nineteenth century, MSPA improvers were corresponding members of the Imperial and Royal Economic-Agrarian Academy of Italy in Florence, and the Secretary

⁴¹ *The Nova Scotia Chronicle and Weekly Advertiser* (Halifax: Anthony Henry, 1769).

⁴² *Halifax Journal* (Halifax, July 22, 1790).

⁴³ Read at a meeting of October 31, 1793, Box 14, Folder: 41, no. 13-26, MSPA, MHS.

⁴⁴ May 20, 1796, BW to John Lettsom, BW-H MS c16.4 (emphasis in original).

of the Cape of Good Hope Agricultural Society solicited wheat seeds from New England in the colony's project to improve the quality of Cape wheat.⁴⁵ The practice of scientific agriculture was not centralized in the eighteenth century because genteel settlers were primarily invested in the economic transformation of property rather than the professionalization of specialist expertise. From the early modern period through the nineteenth century, improvers collaborated with one another as social, commercial, or political opportunity allowed, forming a loose trans-local and international community constituted mainly of long-distance relationships maintained through occasional informal exchanges or visits.

Botanist Manasseh Cutler accumulated personal contacts with naturalists from the colonial through the early national period. Beginning with his garden experiments in Dedham, Massachusetts while he associated with the almanac-writing Ames family and the Free Brothers Club in the 1760s to his surveying fieldtrips in northern New England and regional botanical publications in the late eighteenth and early nineteenth centuries, his circle of association grew to encompass improvers throughout the United States and Europe, including correspondence with naturalists in Britain, Sweden, France, Germany, and Italy.⁴⁶

What institutions did exist to support improvement and other natural history practices emerged as a result of such trans-local contacts and did not supersede them. Neither George Washington's proposal for an American Board of Agriculture nor John Adams's for a government agency in Massachusetts to fund agricultural science and natural history gained sufficiently widespread public support in the eighteenth or early

⁴⁵ Box 11: Folder 4: Foreign Correspondence, MSPA, MHS.

⁴⁶ March 30, 1790, WDP to Jeremy Belknap, WDP Papers.

nineteenth centuries. The MSPA, the first agricultural improvement society in the state, was formed in 1792 out of an initiative begun within the semi-private AAAS; the MSPA in turn, sponsored a professorship in natural history and financed the botanical garden at Harvard. In its early decades, both the AAAS and its offshoot organizations could not single-handedly finance or coordinate agricultural improvement in the state. Instead, they capitalized on and helped to expand, informal networks created by friends and colleagues that carried over from the colonial period. It is probably through such networks that the MSPA obtained copies of *Letters and Papers on Agriculture*, published in Halifax, and *The Nova Scotia Magazine*, extracts of which the Massachusetts society reprinted in its own publications in the 1790s.⁴⁷

In the late seventeenth century and up to the American Revolution, New England and Nova Scotia improvers actively communicated their botanical experiments to correspondents and institutions on both sides of the Atlantic, nurturing native and exotic plants in private greenhouses and botanical gardens, and encouraging local farmers to develop cash crops and other rural commodities for regional transatlantic markets. In the 1780s, the NSSPA in Halifax and smaller agricultural societies in the Annapolis Valley were established to take control of these disparate initiatives by centralizing them in the provincial capital or in market towns close to the most productive farmlands, but the societies never succeeded in dominating improvement in the colony.⁴⁸

⁴⁷ *Laws and Regulations of the Massachusetts Society for Promoting Agriculture: With Extracts of Foreign and Domestic Publications* (Boston: Thomas Andrews, 1793), 35-45. Some of these extracts from Halifax papers were themselves reprintings of columns from the Bath and West Agricultural Society's publications and some were the published advice of Nova Scotia improvers.

⁴⁸ *Letters and Papers on Agriculture: Extracted from the Correspondence of a Society Instituted at Halifax for Promoting Agriculture in the Province of Nova Scotia* (Halifax:

Early modern scientific networks of specimen exchange, accumulation, and interpretation in Europe were organized by government agencies like the British Board of Agriculture, university posts in natural history like Linnaeus's appointment at Uppsala, royal gardens like Kew and the Jardin du Roi, or learned societies like the Royal Society of London. The central location of the Jardin du Roi/ Jardin des plantes in the administrative and cultural capital of France, exemplified the place of natural history not only in that country but more generally in eighteenth century Europe and European empires.⁴⁹ Such institutions monopolized the administration of European national and colonial development by sponsoring exploratory journeys and safeguarding rare or valuable finds in botanical collections and gardens.⁵⁰

By contrast, and with few exceptions, projects or groups for promoting natural history and agricultural improvement in eighteenth century North America were privately organized. Individual improvers' private backyard gardens, heated greenhouses, and home libraries housed Americans' most substantial agricultural and horticultural experiments, herbaria, and reference collections. In the 1780 and '90s, increasing numbers of learned and agricultural societies formed in North America and though many of them were incorporated by a state charter, all were run as exclusive clubs, even the

John Howe, 1789), 11. Graeme Wynn, "Exciting a Spirit of Emulation Among the 'Plodholes': Agricultural Reform in Pre-Confederation Nova Scotia," *Acadiensis* 20: 1 (Autumn 1990), 5-51.

⁴⁹ E. C. Spary, *Utopia's Garden: French Natural History from the Old Regime to the Revolution* (Chicago: University of Chicago Press, 2000), 1.

⁵⁰ Richard H. Drayton, *Nature's Government: Science, Imperial Britain, and the 'Improvement' of the World* (New Haven: Yale University Press, 2000); Spary, *Utopia's Garden*; James E. McClellan, *Colonialism and Science: Saint Domingue in the Old Regime* (Baltimore: Johns Hopkins University Press, 1992); Bruno Latour, *Science in Action: How to Follow Scientists and Engineers Through Society* (Cambridge: Harvard University Press, 1987), especially chapter 6.

American Philosophical Society and the American Academy of Arts and Sciences, the only two officially public societies.⁵¹ None grew to national prominence to equal European metropolitan institutions. Eighteenth-century northern naturalists-improvers in particular had more links to each other and internationally to scientists in Europe or elsewhere through personal reputation, friendly acquaintances, family ties, or business partnerships. They sought to ally themselves with their counterparts, officials, and patrons in London, Edinburgh, Paris or Leiden, but such alliances reinforced and were most often forged through regional and transatlantic sociability rather than through formal organizations.⁵²

Even when informal associations coalesced into corporate bodies, especially at the turn of the eighteenth century, their principle operations relied on already established connections. Harvard medical professor Benjamin Waterhouse's involvement with natural history and improvement was a prime example of this dynamic. Waterhouse's connections were familial as well as professional. He first studied medicine in the early 1770s as an apprentice to naval surgeon John Halliburton in Newport, Rhode Island. In 1775, he went to Edinburgh and London, where his main contact was his cousin John Fothergill, who introduced him to prominent physicians and members of the RS, including George Fordyce, John Hunter, Edward Jenner, and John Coakely Lettsom.

⁵¹ James E. McClellan III, *Science Reorganized: Scientific Societies in the Eighteenth Century* (New York: Columbia University Press, 1985), Appendixes 1-2.

⁵² American historians looking for the intellectual counterpart to the industrial revolution in the North or for the origins of the international prominence of American Cold War science have been dismayed by the prevalence of amateurs and the utilitarian focus of eighteenth-century science. See Brooke Hindle, *The Pursuit of Science in Revolutionary America* (Chapel Hill: University of North Carolina Press, 1956); Raymond P. Stearns, *Science in the British Colonies of America* (Urbana: University of Illinois Press, 1970); John C. Greene, *American Science in the Age of Jefferson* (Ames: Iowa State University Press, 1984).

Through the Revolutionary War, Waterhouse studied for his medical degree in Leiden (where he boarded with John Adams's sons John Quincy and Charles). The newly formed Harvard Medical School appointed him as the first Professor of the Theory and Practice of Physic in 1782 and awarded him an honorary degree in 1786. From 1784 to 1791, he was also a professor of natural history at the College of Rhode Island (later Brown University).⁵³

Despite these professional successes, Waterhouse's career in New England was problematical. As an Anti-Federalist, Waterhouse was despised among many elite Bostonians and people in Harvard's administration, the majority of whom were Federalists.⁵⁴ In 1812, these differences led the Harvard Corporation to fire Waterhouse and subsequently, his career depended entirely on the continued friendship of influential individuals like John Adams, Thomas Jefferson, James Madison, Elbridge Gerry, and Benjamin Rush. Adams' was more supportive in private than in public. When Waterhouse published *The Botanist*, his lectures on natural history, which he had taught at Harvard from 1784 through the turn of the century, and dedicated them to Adams, he learned that Adams never bought a copy. As he explained to Waterhouse, the "Booksellers in Boston and Salem, who refused to take any of them, disliked the dedicator."⁵⁵ The MSPA, which underwrote a natural history professorship at Harvard in

⁵³ For a recent career biography of Waterhouse, see Philip Cash, *Dr. Benjamin Waterhouse: A Life in Medicine and Public Service, 1754—1846* (Sagamore Beach, Massachusetts: Boston Medical Library & Science History Publications, 2006). On Waterhouse at Brown, see Donald Fleming, *Science and Technology in Providence, 1760-1914* (Providence: Brown University, 1952).

⁵⁴ Ronald Story, *The Forging of an Aristocracy: Harvard and the Boston Upper Class, 1800-1870* (Middletown: Wesleyan University Press, 1980).

⁵⁵ John Adams to BW, September 15, 1812, *Statesman and Friend: Correspondence of John Adams with Benjamin Waterhouse, 1784-1822*, ed. Worthington C. Ford (Boston:

1804, did not consider Waterhouse for the position. Adams, who served as president of the society and of the visiting committee that oversaw the professorship, wrote to apologize to Waterhouse that the committee chose “Mr. Peck, who I did not know” instead of “Dr. Waterhouse, who I knew.”⁵⁶

Yet while Waterhouse was increasingly alienated from northern institutional affiliations, his powerful American friends and transatlantic connections to European botanists in the Royal Society and elsewhere, were central to the development of agricultural science in New England.⁵⁷ Though Waterhouse had been excluded from the natural history professorship and botanical garden in the early nineteenth century, he was centrally involved in earlier plans for a garden at Harvard, which had been encouraged in 1784 by the French monarchy and the Jardin du Roi through Hector St. John De Crèvecoeur, its Consul General in New York.⁵⁸ With insufficient additional funding from Harvard or the state legislature, this initiative failed. But in 1787, Waterhouse sent copies of his natural history lectures to Joseph Banks and expressed his interest in renewing the garden project on nine acres in his own backyard, including a hothouse and

Little, Brown, 1927). The lectures were first published as *Heads of a Course of Lectures on Natural History, Now Delivering in the University at Cambridge*. (Providence: Bennett Wheeler, 1784-1791), reprinted in Cambridge by Hilliard & Metcalf in 1810, and subsequently reduced to *The Botanist: Being the Botanical Part of a Course of Lectures on Natural History* (Boston: Joseph T. Buckingham, 1811).

⁵⁶ John Adams to BW, August 7, 1805, *Statesman and Friend: Correspondence of John Adams with Benjamin Waterhouse*.

⁵⁷ James Madison to BW, December 27, 1822; Thomas Jefferson to BW, December 1, 1808, March 9, 1813, and July 20, 1816, in Benjamin Waterhouse Papers (BW-H MS c16.2), Harvard Medical Library in the Francis A. Countway Library of Medicine (BW-HMS c16.2). See also, *Statesman and Friend: Correspondence of John Adams with Benjamin Waterhouse*.

⁵⁸ Hindle, *Pursuit of Science*, 312.

a chemical laboratory.⁵⁹ In 1792, he boasted to Banks that his efforts had excited a growing interest in “the Science of Natural History in general and botany in particular” in “these northern states.” And, though Waterhouse was never an official member or subscriber to the MSPA’s publications, he informed Banks of its formation that year.⁶⁰

Fothergill—Waterhouse’s “Kinsman & Preceptor”—and Lettsom were, like Collinson, among the most active promoters of science in early America. Before and after the Revolution, Lettsom sponsored a variety of American individuals and institutions involved in the practice of medicine and natural history, including Dartmouth and Harvard—the latter awarded him an honorary degree in 1790. He was a foreign member of the APS, the AAAS, and the medical societies of Connecticut and New Haven County, and he corresponded frequently with Waterhouse and other American naturalists through the early nineteenth century.⁶¹

Lettsom helped Waterhouse establish a mineralogical collection and regularly sent Waterhouse packets of flower and vegetable seeds; Waterhouse sent leftovers to the MSPA to be planted in Harvard’s botanical garden. “Within five or six years past,” Waterhouse wrote to the Visiting Committee chair:

I have received nearly 60 papers of Melon-seeds from Dr. Lettsom, with the day of the month, when the melon was eaten; and have distributed them throughout the country to gentlemen & market men; and here send the remaining ten papers to the Trustees. I have received at two different times, within ten years, a large & complete assortment of seeds

⁵⁹ BW to JB, August 10, 1787, BL Add. Mss. 8096.550; Cash, *Dr. Benjamin Waterhouse*, 89.

⁶⁰ BW to JB, June 15, 1792, BL Add. Mss. 8096.203-204.

⁶¹ BW to JB, August 10, 1787, BL Add. Mss. 8096.550; On English sponsors of early American science, see John C. Greene, *American Science in the Age of Jefferson* (Ames: Iowa State University Press, 1984), 9; and Raymond P. Stearns, *Science in the British Colonies of America* (Urbana: University of Illinois Press, 1970), 517-519.

of all the culinary vegetables of England, from Dr. Lettsom, and have in like manner disseminated them throughout the country.

The Committee depended on such casual gifts—most of the plants that grew in the Harvard botanical garden were the not the result of systematic catalogue orders. Waterhouse also offered seeds from Geneva, “one hundred and two sorts” from Marseilles, a specimen of ipecacuanha from the West Indies, and a “peculiarly excellent punkin from the Brazil coast.” Because he believed in an “Ut Spargam principle,” and was “pretty constantly receiving seeds from one quarter or another,” he told the Committee that he would “be happy in transmitting them through the same channel.”⁶² William Peck also depended on Waterhouse for initial contacts with English naturalists, including Banks and Fordyce—when Peck traveled to Soho Square and to Kew, it was Waterhouse who provided the letter of introduction.⁶³

The reliance of improving institutions on informal connections was not limited to North America. The Royal Institution grew out of Benjamin Rumford’s proposal in 1796 to form “a Public Institution for ... the application of science to the common purposes of life.” In 1799 Rumford, Jeremy Bentham, William Wilberforce, two directors of the Bank of England, numerous MPs, and titled lords met at Joseph Banks’s Soho Square apartment to work out the details “in the Metropolis of the British Empire.” Like the British Board of Agriculture, the Royal Institution was nominally a public institution but effectively a private philanthropy, with membership by subscription and closed meetings.⁶⁴ Scientific and improving societies worked with governments and promised

⁶² BW to Dudley A. Tyng, August 28, 1806, Box 13, Folder 30, MSPA, MHS.

⁶³ WPD to Aaron Dexter, London August 10, 1805, WDP Papers.

⁶⁴ Gwendy Caroe, *The Royal Institution: An Informal History* (London: Jon Murray, 1985), quotes on 1-2.

public benefits but these societies were best understood, as one eighteenth-century academician put it, as “the diverse colonies of the Republic of Letters” rather than agencies under the direct control of national or imperial administrations.⁶⁵

In part because of their informality and dependence on individual investment, learned and agricultural societies in early America which were entirely private, such as the Boston Philosophical Society (1683-1688) and the Connecticut Society of Arts and Sciences, (1786-1790), were short-lived.⁶⁶ Less than a decade after its founding in 1785, the private Philadelphia Society for Promoting Agriculture was “greatly in decline” and decided to follow the MSPA’s plan. The MSPA was publicly chartered by the state but restricted “the management of the affairs of the Society to a small, select number of members,” Timothy Pickering wrote admiringly of it.⁶⁷ The MSPA outlasted most northern agricultural societies formed in the eighteenth century. Still, the Society’s limited reach and interest in dispersing rather than centralizing improvement was attested by the formation of numerous smaller agricultural societies in response to its encouragement in a circular sent to town leaders across the state.⁶⁸

In 1788, Virginians circulated a proposal to establish in Richmond an Academy of Arts and Sciences of the United States of America, but the project, sponsored by French

⁶⁵ James E. McClellan III, *Science Reorganized: Scientific Societies in the Eighteenth Century* (New York: Columbia University Press, 1985), Richard de Ruffey quoted on 5. See also Drayton, *Nature’s Government*.

⁶⁶ In 1799, the state of Connecticut granted the Society of Arts and Sciences a public charter and the society is still active.

⁶⁷ Timothy Pickering to Oliver Smith, February 12, 1794, Folder 45, Box 15, MSPA, MHS.

⁶⁸ Folder 10: Miscellaneous, Box 11, MSPA Papers, MHS.

capital, never materialized.⁶⁹ The failure of national institutions for science in the early United States reflected the new and weak federal government. Since agriculture science was structured as a network of local organizations and prominent individuals the flourishing of interconnected, smaller-scale private initiatives revealed the persistence of a colonial sensibility and the tenacity of imperial relationships. Even John Adams, a Federalist who championed national development and obstinately resisted most affiliations with foreign agricultural improvers or institutions, after returning from his diplomatic post in Europe from 1778 to 1788, joined the BBA in 1797 as a foreign member.⁷⁰ When Adams retired from the MSPA in 1813, he hoped that it would continue to promote the “prosperity of Agriculture and Horticulture in Massachusetts and through the World” (rather than the nation).⁷¹

Northern networks of improvement

In the early eighteenth century, regional networks of improvement between anglophone settlers in New England and Nova Scotia were primarily maintained by itinerants—fishermen, Atlantic merchants, and colonial officials. North Atlantic fisheries

⁶⁹ George B. Goode, “The Beginnings of Natural History in America,” ed. Sally Gregory Kohlstedt, *The Origins of Natural Science in America: The Essays of George Brown Goode* (Washington: Smithsonian Institution Press, 1991), 82.

⁷⁰ John Adams to BW, March 11, 1812, *Statesman and Friend: Correspondence of John Adams with Benjamin Waterhouse, 1784-1822*, ed. Worthington C. Ford (Boston: Little, Brown, 1927).

⁷¹ John Adams to Aaron Dexter, May 25, 1813, Folder 45, Box 15, MSPA Papers, MHS.

had put coastal villages in the Gulf of Maine in frequent contact since the late sixteenth century. After the 1713 Treaty of Utrecht, which confirmed British possession of Nova Scotia, colonial agents seeking to displace the mostly French and Indian population with British American farmers believed that they could build on established ties between the “fisherman of New England and those of those parts.”⁷² Later in the century, the expansion of commerce in the gulf, especially in the offshore fisheries centered on George’s Bank, drew the maritime communities of Nova Scotia, Massachusetts and New Hampshire still closer together.⁷³

Until the Acadian expulsion in 1755 and the Seven Years War, however, British agricultural settlement in the region was thin. In response to an early eighteenth-century Board of Trade proposal to transport Acadian and Miqmaq farmers and fishermen to Cape Breton Island, Samuel Vetch, a Boston merchant and former Scottish military officer, argued that the deportation would leave Nova Scotia empty:

As to what may be the consequence of french removing from Nova Scotia to Cape Br they are evidently these: first there leaving that country intirely destitute of inhabitants there being none but french & Indians ... in those parts.⁷⁴

⁷² Thomas Caulfield Annapolis Royal to Board of Trade, November 21, 1715, MG1 v. 1520, Folder K, NSARM [copy of PRO CO 217/2, WA 53].

⁷³ Daniel Vickers, *Farmers and Fishermen: Two Centuries of Work in Essex County, Massachusetts, 1630-1850* (Chapel Hill: University of North Carolina Press, 1994), 271-275.

⁷⁴ ‘Letter concerning Acadie and N.S.’ Samuel Vetch to the Lords of Trade, November 24, 1714, MG1, v. 1520, Folder J, NSARM [copy of PRO CO 217/2, WA 53].

Through the mid-eighteenth century, northern New England and Nova Scotia remained among the most marginal agricultural colonies in British America.⁷⁵

Somewhat paradoxically, however, the marginality of northern maritime colonies made them more reliant on, and therefore tied to, the external support of the British empire and its political, military, and commercial networks.⁷⁶ After 1755, British agents and colonists began integrating Nova Scotia into British America with more force. As an unintended result of this conquest, Acadians who survived the brutal expulsions began to broaden their own social networks in the northern colonies. Among those who retreated to the edges of British control or were rejected from the southern New England farms where they were sent to work, some returned to their farms near the Bay of Fundy coast as skilled laborers or tenants under New England or British landlords.⁷⁷

The so-called New England Planters who resettled Acadian farms and the British naval and military officers stationed at Halifax enlarged regional networks and

⁷⁵ Thomas Waterhous [sic] to Board of Trade, re: fisheries, 1730, MG1, v. 1520, Folders T-V, NSARM [copy of PRO CO 217/6, WA 54]; John G. Reid, *Acadia, Maine, and New Scotland: Marginal Colonies in the Seventeenth Century* (Buffalo: University of Toronto Press, 1981), xv.

⁷⁶ John J. McCusker and Russell R. Menard, *The Economy of British America, 1607-1789* (Chapel Hill: University of North Carolina Press, 1991), 113-114. On the development of commercial networks in the northern colonies, see Daniel Vickers, "The Northern Colonies: Economy and Society, 1600-1775," in *Cambridge Economic History of the United States* (New York: Cambridge University Press, 1996); Marc Egnal, *New World Economies: The Growth of the Thirteen Colonies and Early Canada* (New York: Oxford University Press, 1998); Phyllis W. Hunter, *Purchasing Identity in the Atlantic World: Massachusetts Merchants, 1670-1780* (Ithaca: Cornell University Press, 2001).

⁷⁷ Though many Acadians were among the poorest in the region through the twentieth century, the fact that they maintained a distinct ethnic identity and ties with their extended kin over many generations attests to the resilience of their social networks. On the memory of the Acadian expulsions in northeastern North America and Louisiana over the long-term, see John Mack Faragher, *A Great and Noble Scheme: The Tragic Story of the Expulsion of the French Acadians from their American Homeland* (New York: Norton, 2005), 443-454.

established the first permanent British occupations of the peninsula. In the late 1760s, a newspaper publisher in Halifax reminded his readers that they enjoyed “the same privileges and immunities which are enjoyed by Yorkshiresmen,” as well as their closest “fellow subjects in America”—“Boston and New-England men.”⁷⁸

Regional ties were further strengthened as Loyalists resettled, at least for a time, in British North America. The largest number of American Loyalists—roughly 40,000—migrated from the Thirteen Colonies to the coastal towns of Nova Scotia between 1774 and 1784.⁷⁹ Exiles in Nova Scotia were especially keen to maintain ties to the United States, Britain, and the broader Atlantic world.

Newly-arrived merchants who wanted to reestablish their trade in Halifax or to maintain family cohesion, corresponded or traveled between Nova Scotia and the northern United States through the first decades of the nineteenth century.⁸⁰ Many improvers were, like the Vaughans, exiles of some sort—Loyalists, Dissenters, British pro-republicans, or pacifists—who migrated during the revolutionary period for a variety of reasons besides political or religious beliefs, from securing the safety of their families in wartime to settling land grants or hereditary claims. Waterhouse’s first teacher, John Halliburton, fled Rhode Island for Halifax in 1782 and continued to serve in the Royal Navy, but in 1790 wrote to Waterhouse that he wished commercial relations between

⁷⁸ *The Nova Scotia Chronicle and Weekly Advertiser* (Halifax: Anthony Henry, 1769).

⁷⁹ Keith Mason, “The American Loyalist Diaspora and the Reconfiguration of the British Atlantic World,” pp. 239-259; Robert Calhoun, Timothy Barnes, and George Rawlyk, eds., *Loyalists and Community in North America* (Westport, CT: 1994), 6-9.

⁸⁰ Historians of Maritime Canada typically assume that the War of 1812 ruptured cross-border family and social ties. For one example of continuities, see Margaret Conrad, Toni Laidlaw, and Donna Smith, eds. *No Place Like Home: Diaries and Letters of Nova Scotia Women, 1771-1938* (Formac Publishing, 1988), especially the diary of Louisa Collins (1797-1869), 61-78.

New England and Nova Scotia could be reestablished. He also wished to visit Boston, but cautiously decided to stay close to his “business” in Halifax.⁸¹

Improving settlers in Nova Scotia effectively remained a part of a broader society outside the confines of the province by affiliating with people, institutions, and publications related to natural history and scientific agriculture.⁸² Timothy Ruggles was born in Rochester, Massachusetts in 1711, graduated from Harvard, practiced law throughout the state, served as a general in the Seven Years War, and in 1762 was elected Speaker of the House of Representatives and, like John Wentworth, Surveyor General of the King’s Forests. Ruggles was in the minority opinion when he presided over the Stamp Act Congress in 1765 and, in 1783, resettled his family on a land grant of 10,000 acres in the township of Wilmot, Nova Scotia.⁸³ He was also an improver and an original member of the NSSPA, founded in 1789. His associates in the agricultural society admired that Ruggles, especially at such “a very advanced age,” had “exhibit[ed] to the World” such industry in settling his lands in Nova Scotia. He “spared no expence in making experiments in Agriculture and Mechanics” and “revived” Wilmot, which had formerly looked like “Goldsmith’s deserted village.”⁸⁴

William Almon was another prominent Loyalist who moved to Halifax from Rhode Island and was a founding member of the NSSPA. At the turn of the century, Almon’s family, his wife’s father wrote to Halifax from St. John, New Brunswick, was

⁸¹ John Halliburton to BW, October 26, 1790, BW-HMS c16.2.

⁸² Tamara Thornton argues that the flight of many leading Boston families in the Loyalist emigration forced those who stayed behind to recreate their elite identity in republican terms. Thornton, *Cultivating Gentleman*, 15-18.

⁸³ MG 100, vol. 216, no. 15-17: Timothy Ruggles, NSARM.

⁸⁴ Timothy Ruggles to Edward Winslow July 17, 1783, MG 100, vol. 216, no. 15-17, NSARM; William Shaw, Halifax to Colonel Edward Winslow, February 1, 1785, C.B. Ferguson Papers, MG 1 Box 1898, Folder 9, NSARM.

continually “breaking up,” and all their relations were “wandr’ng like Gypsies, & playing Puss-in-the-Corner about the Globe. You & I seem to be the only stationary Beings.” Referring to his son-in-law and the recent British colonial initiatives in West Africa, he expected “soon to hear that the Doctor has made his fortune & gone to live like a Gentleman at Sierra-Leone.”⁸⁵ Still, like the Vaughans, the Almon-Byles family managed to retain ties to people in New England, Jamaica, and London. In 1793, Almon was elected to the MSPA as a corresponding member and he wrote to thank the society:

I find myself extremely happy to ... promote the views and success of a Society founded upon such a liberal plan ... I shall certainly avail myself when anything interesting to Agriculture occurs.⁸⁶

The following year he sent the MSPA a book that he had “just received from England,”

entitled the complete Farmer or General Dictionary of Husbandry; as it appears to contain much useful information, and is judiciously arranged; I must beg leave to offer it as an addition to the Library of the Massachusetts Society for Promoting Agriculture. With my best wishes for the success of the Society and esteem for its Members.⁸⁷

Improvers in other parts of British North America were also keen to network with their counterparts in the MSPA. Hugh Findlay, a judge and improver in Quebec was named a corresponding member the same year as Almon and, like him, promised to forward “all such information I may consider worthy of their notice in the course of agricultural experiments in Canada.” The exchange would be mutual: the “labours of your Society,” he wrote the MSPA in 1793, “may greatly promote the Views of a like

⁸⁵ Mather Byles to Rebecca Byles Almon, September 23, 1801, MG1, 11: Almon Family Papers, NSARM.

⁸⁶ December 22, 1789, *The Royal Gazette and the Nova-Scotia Advertiser* (Halifax, 1789); William Almon to Oliver Smith December 12, 1793, Folder: 11, no. 1-19, Box 1, MSPA, MHS. Incidentally, Almon was related to Jeremy Belknap.

⁸⁷ William Almon to Oliver Smith, December 20, 1794, Box 21, Folder 13, MSPA, MHS.

Society instituted here in 1789. I trouble you with their publications.”⁸⁸ A man in central Connecticut who “lived for many years” in Montreal and was perhaps connected with the same agricultural society as Findlay, wrote in 1818 to a member of the MSPA that “agricultural knowledge is very much wanted and sought after by the best informed people there.” He had:

assisted a Printer to publish a News Paper in Montreal, who could and would publish extracts from the Agricultural Repository of the Massachusetts and he thinks would republish the numbers of the Repository there, by such means the knowledge of Agricultural may be much increased.⁸⁹

Agricultural improvement was never an exclusively national movement, but a transitive collaboration among local elites.

Membership

Improvers were elites or aspirants in British or American political, commercial, or church affairs ranging from the aristocracy and landed gentry of Georgian Britain and the earliest presidents of the United States to university educated ministers, schoolmasters, professionals and the upwardly mobile merchants of the Atlantic world. Men in early America formed societies on the north shore of Boston, such as the Essex Junto, which discussed self-improvement, as well as agricultural improvement, and were attended by

⁸⁸ Hugh Findlay to Oliver Smith, December 4, 1793, Box 1, Folder: 11, no. 56-69, MSPA, MHS.

⁸⁹ Justin Ely to Aaron Dexter, February 6, 1818, Box 1, Folder: 11, no. 41-55, MSPA MHS.

“a constellation of very estimable and talented persons,” including Judge John Lowell, an early president of the MSPA.⁹⁰ Like Benjamin Franklin’s Junto in Philadelphia, these groups were modeled on a combination of the Royal Society and the Bible-study groups proposed by the powerful Boston minister Cotton Mather in his 1710 *Bonifacius: Essays to Do Good*.⁹¹ Harvard and Yale-educated men who were neighbors in New England communities formed discussion groups which met in someone’s home or in a tavern.⁹² In the 1760s, Manasseh Cutler and other gentlemen gathered with the almanac writer Nathaniel Ames and his family in their Dedham, Massachusetts tavern as the Thursday-night or, Free Brothers’ Club, where natural history and improvement were frequently the focus of conversation.⁹³

Just as Mather addressed his essays to particular do-gooders (“magistrates, ministers, physicians, lawyers, schoolmasters, wealthy gentlemen”), Jared Eliot was encouraged that Benjamin Franklin and “other gentlemen in these parts, of worth, capacity, and learning” had bought copies of his *Essays Upon Field-Husbandry*.⁹⁴

⁹⁰ SL47 Harrison Gray Otis to Charles Lowell, November 10, 1846, Spence-Lowell Collection, Huntington Library.

⁹¹ Joyce Chaplin, *The First Scientific American: Benjamin Franklin and the Pursuit of Genius* (New York: Basic Books, 2006), 41; On the transatlantic culture of colonial clubs, see David Shields, *Civil Tongues and Polite Letters in British America* (Chapel Hill: University of North Carolina Press, 1997).

⁹² John Greene discusses the exceptionally intimate life-long connections between Harvard-educated men in early national New England: “Nowhere else in the United States was the network of scientific and literary institutions so tightly interwoven by ties of family, friendship, and loyalty to a common alma mater.” John C. Greene, *American Science in the Age of Jefferson* (Ames: Iowa State University Press, 1984), 63-64.

⁹³ March 3, 1766 and April 4, 1766, Cutler and Cutler, eds., *Life, Journals, and Correspondence of Reverend Manasseh Cutler*, v. 1: 12-13. Marion B. Stowell, *Early American Almanacs: The Colonial Weekday Bible* (New York: Burt Franklin, 1977), 72-75.

⁹⁴ Jared Eliot, *Essays Upon Field-Husbandry in New England and Other Places, 1748-62* ed. Harry Carman, et al. (New York: Columbia University Press, 1934), 26-27.

Another New England minister who wrote a specialized agricultural dictionary published in the late eighteenth century made clear that common farmers were a secondary audience.⁹⁵ His primary readership, from whom he solicited subscriptions, were “the rich, the polite, and the ambitious.”⁹⁶

The last category was particularly conspicuous in the northern colonies, whose low-born strivers, like Count Rumford (Benjamin Thompson) and Benjamin Franklin, initiated political careers by gaining the admiration of genteel audiences through scientific experiments and inventions.⁹⁷ Engagement in agricultural improvement or botany established or affirmed the legitimacy of such rising individuals. Though Rumford built his reputation by communicating his work on heat and explosives to the Royal Society, he used gardening and nature surveying projects to mark his early achievements and to substantiate his extraordinary promotion from Massachusetts apprentice to Imperial Count of the Holy Roman Empire. As a tutor in Concord, New Hampshire in the 1770s, he joined in London seed orders with Governor John Wentworth, who invited Rumford to join him, Harvard professor Samuel Williams, and engineer Loammi Baldwin on a scientific survey of the White Mountains in 1773. In the 1790s, Rumford was a principal founder of the Royal Institution and as British consul to Bavaria, his most notable efforts were the prison farms and public gardens he created—modeled on Kew—in Munich and Mannheim.⁹⁸

⁹⁵ Cotton Mather, *Bonifacius: Essays to Do Good* (Boston, 1710), [title page].

⁹⁶ Samuel Deane, *The New-England Farmer, or, Georgical Dictionary* (Worcester: Isaiah Thomas, 1790), 2. On the limited audience for eighteenth-century publications, see Gordon S. Wood, *Revolutionary Characters: What Made the Founders Different* (New York: Penguin, 2006), 246-251.

⁹⁷ Chaplin, *The First Scientific American*, 5.

⁹⁸ Brown, *Benjamin Thompson*, 19, 26, 122-163.

Manasseh Cutler was not wealthy, but his career as a Congregational minister throughout southern New England had been fortunate and he associated with the highest families in the region as well as prominent foreign naturalists abroad. A formerly grand Newport, Rhode Island garden after the Revolutionary War (“laid out,” Cutler noted, “much in the form of my own, contain[ing] four acres, [with] a grand aisle in the middle,” and surrounded by espaliered fruit trees, a hothouse, and “curious flowering shrubs”), it had suffered “the want of a gardener to dress it.”⁹⁹ Cutler was considered to be the most knowledgeable botanist in Massachusetts. This distinction—combined with his stylish garden and connection to other improving gentlemen—rather than his work as a farmer or gardener, distinguished him as an improver.

The requirements for membership in agricultural improvement societies were lower—connections to networks of improvement were what was necessary. One man whose participation the MSPA solicited, was surprised by the request, since he had “never made any new georgical experiments and the small degree of knowledge I once had, I have since lost by disuse.” He assured the MSPA that it could “derive but inconsiderable, perhaps no advantage, as I have not sufficiently turned my attention to such matters,” but because “the gentlemen who compose the Society are so respectable,” he promised he would “not fail of paying my regards to them at their next meeting.”¹⁰⁰

⁹⁹ August 16, 1778, Cutler and Cutler, eds., *Life, Journals, and Correspondence of Reverend Manasseh Cutler*, v. 1: 68-69.

¹⁰⁰ Samuel Dexter to John Avery, August 6, 1792, Box 15 Folder: 44, no. 51-64, MSPA, MHS.

Membership: Improving families

On first arrival to Hallowell Benjamin was “mortified” by the family property “in its present deplorable state,” which Sarah compared to “a wretched piece of English common.” As a family, they would remake it into the “model of the country.”¹⁰¹ The Vaughans envisioned a “Jamaica fashion” residence with a winding driveway, pipe-irrigated pleasure and kitchen gardens, a greenhouse for indigenous woodland flora, and a “weather-proofed” cellar, financed mostly (and appropriate to the house’s design), from profits on sugar grown by slaves in their Caribbean plantations. According to Benjamin’s estimate his family’s new living arrangement would cost twice the local average. But clearly their material resources—both financial and technical—ranged beyond the local. Help came by packet in the form of letters, seed stock, and special equipment, like the forcing glasses sent by Sarah’s brother in France. Members of the Royal Society and the Massachusetts Society for Promoting Agriculture forwarded the latest publications explaining chemical and horticultural experiments. The Vaughans promised to return all favors by filling their correspondents’ requests for barrels of cranberries, sweet corn, native seed, and news about the progress of their renovations.¹⁰²

¹⁰¹ Mrs. Benjamin Vaughan to Charles Vaughan, September 1797, Carton 1: 1774-1804, Vaughan Family Papers, Correspondence, 1773-1812, VFP, MHS. [Photocopy of an APS doc; Permission needed for publication or repro from APS].

¹⁰² Benjamin Vaughan [BV] to William Manning, August 20, 1797, Carton 1: 1774-1804, VFP, MHS; Mrs. BV to Charles Vaughan, September 1797 [Photocopy of an APS doc; Permission needed for publication or repro from APS]; Henry Bird to Sarah M. Vaughan (SMV), April 4, 1796; Eliza Bird to SMV, December/January 1796/7, Folder: Correspondence, April-May 1796; BV to Samuel and Sarah Vaughan, September 27, 1797, Carton 1: 1774-1804, Correspondence, 1773-1812, VFP, MHS.

Staying in touch by post did not merely preserve their relationships. It was also a means for the Vaughans—improvers in a frontier settlement—to promote the interests of their new location. They reassured their friends at a distance that the family was not succumbing to the wilderness and enlisted the support of their far-flung network to recreate elements of an urbane lifestyle in the countryside.

Emphasizing how agricultural science and natural history were structured by social networks reveals how the eighteenth-century culture of improvement included women and children.¹⁰³ Their farm work, gardening, botanizing and other natural history activities otherwise appear largely irrelevant to the institutional origins of modern science.¹⁰⁴ On both sides of the Atlantic, women were tacitly excluded from politics, colleges, and membership in private learned societies and they were even less conspicuous in the public aspects and nascent institutions of eighteenth-century science. Among British women with botanical interests there were exceptional cases of renown, such as Stephen Hales' patron and the originator of Kew Gardens, Princess Augusta, and Lady Anne Monson, a botanist who traveled with her husband to India and with Kew plant hunters C.P. Thunberg and Francis Masson to South Africa. Elizabeth Blackwell, Sarah Trimmer, and Priscilla Wakefield each wrote popular natural history primers.¹⁰⁵

¹⁰³ E.C. Spary shows how people involved in extra-institutional networks of natural history contributed to the Jardin. Spary, *Utopia's Garden*, 12, see especially chapter 2.

¹⁰⁴ By the nineteenth century, the amateur pursuit of botany and horticulture became increasingly feminized. See Ann B. Shteir, *Cultivating Women, Cultivating Science: Flora's Daughters and Botany in England, 1760-1860* (Baltimore: Johns Hopkins University Press, 1996).

¹⁰⁵ Augusta, Princess of Wales's Accounts, Box 5: nos. 55422-55661, Georgian Archive, Royal Archives, Windsor. Patricia Phillips, *The Scientific Lady: A Social History of Women's Scientific Interests, 1520-1918* (New York: St. Martin's Press, 1990). See also, Elizabeth C. Goldsmith and Dena Goodman, eds. *Going Public: Women and Publishing in Early Modern France* (Ithaca: Cornell University Press, 1995); and Goldsmith, ed.

By comparison, early American women were virtually invisible in the public culture of natural history.

But they were discreetly present. Women and girls contributed specimens to museum collections (sometimes from their own person, such as locks of hair), and their work as gardeners, herbalists, healers, or dairy maids were described in newspapers and advice literature.¹⁰⁶ As published writers, they were pseudonymously disguised as male personae. Judith Sargent Murray (who eventually revealed herself as the gentlemanly author of ‘The Gleaner’ column in the *Massachusetts Magazine*), encouraged American women to form intellectual salons and to pursue, like their contemporary Dorothy Schlozer, mathematics, architecture, and mineralogy, “visiting in person, the deepest mines and bestowing minute attention on the several stages of the work.” As she reported in a mock letter addressed to The Gleaner signed ‘Martha Studios,’ some Massachusetts women already regularly gathered for reading and conversation (and needlework): “we are sedulously solicitous to improve, by every possible means, and we style ourselves, The Progressive Society.”¹⁰⁷

Writing the Female Voice: Essays on Epistolary Literature (Boston: Northeastern University Press, 1989).

¹⁰⁶ Jared Eliot, *Essays Upon Field-Husbandry in New England and Other Places, 1748-62* ed. Harry Carman, et al. (New York: Columbia University Press, 1934), 9; Samuel Deane, *The New England Farmer or, Geographical Dictionary* (Worcester: Isaiah Thomas, 1790), 47-49. An example of the female donors of specimens and artifacts is in the early catalogs of what is now the Peabody Essex Museum. Though only men could be members of the East India Marine Society, some women and girls are identified in the catalog. *East India Marine Society Catalog* (Salem, MA: East India Marine Society, 1821).

¹⁰⁷ Judith Sargent Murray, “63: Uneducated Genius—Its achievements entitled to Superior admiration,” and “100: Letters to the Gleaner,” in *The Gleaner: A Miscellany*, ed. Nina Baym (Schenectady, NY: Union College Press, 1992 [1798]); Janet Carey Eldred and Peter Mortensen, *Imagining Rhetoric: Composing Women of the Early United*

Family letters are the most revealing documents of women's activities as naturalist-improvers in early North America. We know Manasseh Cutler's daughter was an avid gardener, for example, from his praise and encouragement for her interest in plants. Cutler wrote to her in detail about an impressive garden and private botanical library he visited in Philadelphia and about the wife of the British ambassador he met in Washington who was, he thought:

quite a botanist ... She has a fine collection of books and a large number of specimens. She appears to understand the science very well, and is a perfect enthusiast in her favorite pursuit ... wish[ing] to preserve American plants, and to be informed about our vegetable productions.

"Mrs. Torrey," as Cutler addressed her, did not share her father's international reputation as a botanist.¹⁰⁸ Her scientific activities, and those of other daughters and young sons, wives, and sisters only becomes evident if we understand natural history and improvement in eighteenth-century North America in terms of its social life. Besides gentlemen, a broad range of scientific amateurs of roughly similar rank networked improvement through informal, sometimes intimate intellectual exchanges among neighbors, kin, colleagues, and distant correspondents.¹⁰⁹

States (Pittsburgh: University of Pittsburgh Press, 2002), 66-88. On female salons in eighteenth century Boston, see Shields, *Civil Tongues and Polite Letters*, 104-119.

¹⁰⁸ Cutler to Mrs. Torrey, November 22, 1803 and February 21, 1805 in William Cutler and Julia Cutler, eds. *Life, Journals, and Correspondence of Reverend Manasseh Cutler, LLD, By His Grandchildren* 2 vols. (Athens: Ohio University Press, 1987), 2: 144-6, 190. On the natural historical letters and activities of Jane Colden and Martha Logan, see Parrish, *American Curiosity*, 136-173.

¹⁰⁹ [Ann?] Blakey Sharpless [n.d./early 19th century], in *New England Women and the Families in the 18th and 19th Centuries*, SERIES B: Manuscript Collections from the Newport Historical Society, 10: 0314. Laurel Ulrich describes a similar, though much more pointed, divergence of interests between female healers or midwives and male medical men aspiring to professionalization in, *A Midwife's Tale: The Life of Martha Ballard Based on Her Diary, 1785-1812* (New York: Knopf, 1990). See also, Patricia

From this perspective, letters which might otherwise seem merely chatty can be seen as a sort of scientific or ‘improving’ correspondence. Rebekah Richardson’s letters to her brother Titus Smith in Halifax, fall into this category. Though Titus and their parents immigrated to Nova Scotia during the Revolutionary War, Richardson, her husband, and other siblings remained as small farmers in southern New England. In 1801-02, when Titus was surveying the interior geography of the province for the colonial government, Rebekah wrote to him about her own discoveries of “natural curiosities” during her “rambles in the woods” near Litchfield, Connecticut. Like Schlozer, Rebekah had been exploring “a number of caves ... about three quarters of a mile from our house” which, she assured her brother, “would engage your attention for a week.” She was “not chymist enough” to know the correct terminology for what she and the boy who came with her to hold the candle saw inside, but managed to fill several pages with careful observations:

In the highest of these caves I can nearly stand up—the roof is not a regular arch but uneven and the colour is a Bright green. the floor is cover’d with Loose flakes of stone which have fallen from the roof and which are very curious we have picked up and Brought home several roots of Birch and other trees which are turned into stone. some into white flint others into a substance which looks [rubbed out] .. the roof of the cave Looks [three lines rubbed out] ... where the roots look decayed. there is a continuous dropping of water through the roof which renders the cave uncomfortable. a Little Below this there is another cave which appears much more curious but so wet and Low that I have never attempted to enter it I have however sent in a boy with a candle whilst I Looked in at the mouth the roof is Beautifully arch’d and hangs full of iciles [sic] of stone ... from the end of which the water drops onto the floor which is smooth as glass and a Little sloping along the Backside of this room there is a deep gutter in which the water stands the depth of some feet.¹¹⁰

Phillips, *The Scientific Lady: A Social History of Women’s Scientific Interests, 1520-1918* (New York: St. Martin’s Press, 1990).

¹¹⁰ RR to TS, January 23 1802, Miscellaneous correspondence, Titus Smith Papers, MG1 Vol. 1773, NSARM. On Sandemanians (or Glasites) in North America, see Geoffrey

Like Jeremy Belknap and Manasseh Cutler on their unofficial expedition to New Hampshire, Rebekah Richardson used her walks to survey local nature. If Belknap's publication of touring notes in *The History of New-Hampshire* reinforced to the reading public his position as a cosmopolitan gentlemen (as it did for other post-Revolutionary authors of state natural histories), Richardson's letters to her brother also expressed a learned worldliness, albeit to a much more limited, private audience.¹¹¹ Richardson regretted the division of her family between western New England and Nova Scotia. But "the sea that parts us" (as she visualized the breach), did not prevent her from communicating "epistoleory matter" about American politics, sectarian movements, land speculation, farm news, and natural history to her "philosophical" brother.¹¹²

The Vaughan correspondence shows their entire family involved in agricultural improvement. Relatives sent and solicited planting stock, garden equipment, and gossip even before the Vaughans arrived in Maine.¹¹³ In April 1796, when they were staying with Benjamin's brother Charles in suburban Boston, Sarah's brother Henry Bird in Valance organized a shipment of "useful Garden seeds" and asked her to thank Charles for his "peace offering" of cranberries and to send a few gallons more when she could. Later that winter, Eliza Bird's note described dinners with American diplomats in

Cantor, *Michael Faraday: Sandemanian and Scientist: A Study of Science and Religion in the Nineteenth Century* (London: Macmillan, 1991), 5, 94-95.

¹¹¹ Gordon Wood, *The Radicalism of the American Revolution*, 221-222. Though Richardson's surviving correspondence is very limited, her letters to Smith in Halifax suggest that she was also in contact with family members in western Connecticut, eastern New York, and Boston.

¹¹² RR to TS, November 30, 1800, Miscellaneous correspondence, Titus Smith Papers, MG1 Vol. 1773, NSARM.

¹¹³ On British improving families in pre-Confederation Quebec, see Colin Coates, *The Metamorphoses of Landscape and Community in Early Quebec* (Montreal: Mc-Gill-Queen's University Press, 2000), 149-152.

London and instructions to “guard the seeds I have lately sent,” including hyacinths, daffodils, and “other sweet smelling flowers.” The family patriarch, Benjamin’s father Samuel Vaughan, sent “Seeds, Tools, Books” from seven different London suppliers and alerted them of an imminent delivery of potatoes and gooseberry cuttings from Lancashire. In 1799, John Vaughan (then secretary of the American Philosophical Society), teased his brother Benjamin that the family should appoint him “travelling Missionary de Propaganda” for promoting their Maine properties as “wilds ... set off by English Improvements” to everyone in Philadelphia. And throughout the turn of the century, Benjamin continued to monitor the output of their plantations in the West Indies from a distance, occasionally asking for a packet of tropical grass seed and predicting that the Maroon insurrection would devalue Jamaican real estate.¹¹⁴

Benjamin and Sarah’s sons Henry and William Vaughan were tutored from boyhood to network improvement. Henry was sent to London in 1801, and wrote to Maine about his impressions of show breeds at the Lewis livestock fair (the cattle were “large but ill shaped,” but the sheep, he informed his father, “quite eclipse yours”), and offered to “send some lucern, saintfoin, & nonsuch.” In a separate letter, he praised and encouraged William for his improving experiments: “My dear Brother, I have heard with great pleasure of the great improvements you have made for general utility & if I can give you any information I shall with pleasure.” Recounting a lecture on the amounts of tannin in the bark of various trees, he recommended that William substitute sumac for

¹¹⁴ Henry Bird to SV, April 4, 1796; Eliza Bird to SV, December 1796 & January 1797; John Vaughan to BV & SV, August 17, 1799; Samuel Vaughan to BV, February 28, 1798; and [BV] to “Samuel” [West Indies], June 1, 1803, Carton 1, VFP, MHS. Benjamin compared owning property in Jamaica to “planting a vineyard ... at the foot of an active volcano; ... it is like a man of ninety marrying a giddy young girl practised in the arts of poisoning.”

hemlock: “as at Kennebec you have plenty of sumach ... It would at least be worth a trial.”¹¹⁵

Meanwhile, William reinforced already close ties between the KAS and the APS during his own stay in Philadelphia, and again when he returned to Maine and struck up a personal correspondence with Maryland planter, judge, and APS member, John Beale Bordley. The two swapped rutabaga tubers and okra seeds, late copies of the *Farmer’s Calendar* from England, and recipes for making watermelon syrup. As for the rutabaga, the young Vaughan flattered Bordley that his “father had it before, but the knowledge of your success with it gives new encouragement to its circulation & a name whereby to recommend it.”¹¹⁶

Sarah Vaughan was not an official member of the learned and improvement societies with which all the men in her extended family were affiliated. But she was embedded in the same personal networks of transatlantic society, the British empire, and Atlantic commerce which were sustaining those institutions (including her inheritance of Montserrat plantations shortly after she settled in Maine). A mutual friend in London gave “credit” to Benjamin and Sarah “for great strength of mind, & much dignity & independence of character,” though he expressed concern that “to be so much abstracted from the pleasures of polished & literary society ... must sometimes prove irksome to you both.”¹¹⁷

¹¹⁵ William O. Vaughan to Henry Vaughan, c. 1801; Henry Vaughan to BV, 1801, Carton 1, VFP, MHS.

¹¹⁶ [Draft] William O. Vaughan to John B. Bordley, October 1801; Bordley to W. Vaughan, November 1, 1801, Carton 1, VFP, MHS.

¹¹⁷ J.P. Anderson to BV, July 27, 1798, Carton 1, VFP, MHS.

Letters concerning the management of the Hallowell farm and the KAS were sometimes addressed to Sarah rather than Benjamin. In 1798, a sibling wrote “in haste” to Sarah, urging her to:

Sow enough of seeds, for seeds to be used the next year—I keep all the sheep, unless you think one Ewe & Lamb at Jones’ Eddy will give a double chance for preserving & extending the breed. If you spare now, you will lose one object of serving the country on your own terms. Next year by supplying a 1/2 dozen farmers, the competition will secure your own terms of a further supply.¹¹⁸

The repeated use of the phrase “on your own terms” could have simultaneously addressed Sarah individually and the Vaughans collectively. Still, it unmistakably suggests Sarah’s agency as an agricultural improver. Indeed, in their first weeks in Hallowell, it had been her idea to rearrange the property so that it would resemble the master’s grounds of a Caribbean plantation. She wrote to Charles with a long proposal for changes:

If I remain I shall beg leave to divide the inclosure ... I propose also that the garden should all be in front as you will then be able to watch the laborers & the produce of it from the house & to make an easy fence; having the terrace to divide the garden into an upper & a lower part, or into a vegetable & a fruit part ... & I propose the road to the house for carriages to go northern & westward ... & it will be advisable to bring water from the pasture in which the house stands (not the bullock pasture) by means of pipes coming from a reservoir to be made at the spring head, which will at the same time serve as a spring-house.

Throughout this list she interpolated “I wait your direction” or “orders.” But Sarah was as determined as her husband to install “a farm ... which ... exhibited improved farming & experiments,” because, as Benjamin declared in a postscript to this letter, “an English family cannot willingly submit to the privation of antient comforts.”¹¹⁹

¹¹⁸ Sibling to SV, ca. 1798, Carton 1, VFP, MHS, emphasis in original.

¹¹⁹ SV to CV, September 1797, Carton 1, VFP, MHS; William Manning, Totteridge, England to SV, February 1798, Carton 1, VFP, MHS.

On the margins

The same cannot be said of the expectations of all Hallowell farmers. Historian Laurel Thatcher Ulrich's detailed portrait of the Vaughans' Hallowell neighbor, the midwife and farmer Martha Ballard, provides a basis for comparison between the two households. Martha, like Benjamin and Sarah, grew and traded a great variety of native and imported garden stock (including corn, cranberry, squash, musk melon, chamomile, and strawberry sets), with residents—especially local women—along the Kennebec River on her travels for medical and social visits. But the Vaughans were generally aloof to commoners like the Ballards and relations between them were strictly formal: Benjamin and Martha may have intersected in their respective work as physician and midwife, and Mr. Ballard once bought flax seed (which Martha planted), from the KAS.

Ulrich observes that “the gardens people cultivated revealed their aspirations”: and it is true that a subtle measure of the social distance between these families lay in their gardens. Improvers flaunted their privileged connections to patrons or influential people abroad by importing expensive equipment and unusual flower, fruit, and vegetable varieties, arranging their gardens according to the latest fashions, and building hothouses or greenhouses to sustain warmer-climate plants. If for Martha, “cabbage stumps, not hyacinths, were the first harbingers of spring,” for Sarah, it was the reverse.¹²⁰ Benjamin, who was keenly conscious of the symbolism of decorative landscapes, implored his brother in Boston to “buy and beg” for him “as many slips of white currant trees as possible.” If the order had to be filled-out with red currant bushes, Benjamin

¹²⁰ Ulrich, *A Midwife's Tale*, 328, 323.

asked that not more than in “proportion of one red to three white.” Red berries must have appeared too common for his taste: the Ballards enjoyed them from their own garden.¹²¹

The New England Planters, migrants who came to Nova Scotia immediately after the Acadian expulsions, were middling farmers with limited ambitions compared to later arriving settlers from the region and they were frequently disparaged by improvers. In 1785 a retired British army officer with a land grant of 500 acres near Annapolis Royal, cautioned a Loyalist from Plymouth, Massachusetts that the Planters were “bad Public or private characters,” with whom he planned “ever [to] be unconnected.”¹²²

Indians, francophone Acadians, and free blacks were on the farthest edge of networks of improvement and long-distance markets. In the course of discussing the local scene in letters to one another, improvers invoked these low status groups as egregious examples of unimproved farmers or, in the case of Indians, as primitives who refused to become settled agriculturalists. There were successful farmers in all these minority populations, but socially and politically marginalized and largely illiterate, they were seldom to never directly involved in promoting scientific improvement. Black farmers were rarely mentioned except in discouraging reports about lands in southern Nova Scotia—indisputably some of the worst agricultural land in settled British North America—granted by the Crown to the so-called Ethiopian Regiment veterans of the Revolutionary war.¹²³

¹²¹ Ulrich, *A Midwife's Tale*, 29, 96, 311-329, 384 fn. 37. BV's postscript in SV to CV, September 1797, Carton 1, VFP, MHS, emphasis in original.

¹²² William Shaw to Colonel Edward Winslow, January 1, 1785, C.B. Ferguson Papers, MG 1 Box 1898, Folder 9, NSARM.

¹²³ Graham R. Hodges, ed. *The Black Loyalist Directory: African American in Exile after the American Revolution* (New York: 1996); also, James W. St. G. Walker, *The Black Loyalists: The Search for a Promised Land in Nova Scotia and Sierra Leone, 1783-1870*

Sometimes isolation from broader social networks was a deliberate choice. Throughout the colonial period, Mi'kmaqs and French settlers in Acadia operated within kin and village networks and intermarriage between Indians and colonists was common. A British agent in 1720 observed that they were "firm allies" and mutually "dependant by the ties of long acquaintance, consanguinity, and Religion," largely insulating themselves from both French and British metropolitan control.¹²⁴ These bonds proved resilient even through the mid-eighteenth century expulsions, when British and American soldiers and migrants took possession of Acadian farms. Some Acadians formed new settlements throughout British North America and northern New England and maintained a separate existence. A surveyor assessing tenant farms on the Bay of Fundy coast reported in 1795 that the Acadians kept at "a distance from the Intercourse of others."¹²⁵ In another report from the area six years later, the surveyor noted that Acadians wore homespun wool and subsisted on eel and potato. Each family consumed less than four pounds of flour per year, purchased with cash from small sales of meat and butter.¹²⁶

(Toronto: Toronto University Press, 1992); and Silvia Frey, *Water from the Rock: Black Resistance in a Revolutionary Age* (Princeton: Princeton University Press, 1991). Their marginalization may also have had an ethnic or racial aspect, especially as New England and British settlers often denounced the extensive intermarriage between Indians and colonists in New France. However, the improvers I studied focused their criticism of Indians, Acadians, and blacks on land use practices.

¹²⁴ Council for Nova Scotia, Report to the King, September 27, 1720, Folder O, MG1, v. 1520, [copy of PRO CO 217/4, WA 53], NSARM. See Leslie Choquette's brilliant demographic study of immigration to New France, *Frenchmen into Peasants: Modernity and Tradition in the Peopling of French Canada* (Cambridge: Harvard University Press, 1997), esp. 277-290.

¹²⁵ "Information respecting the Estate of Tatmagouche in Nova Scotia obtained on the spot by Capt. John Macdonald and transmitted to his friend L. Gov'r Desbarres the Proprietor thereof." Series 2 (MG 23, F1-2) Joseph Frederick W. DesBarres Papers, 1762-1894, MG23, F1, National Archives of Canada.

¹²⁶ Titus Smith, "Survey of the Eastern and Northern Parts of the Province in the Years 1801 & 1802 ... and Observations on the Western Parts," RG1 380A, NSARM. On

Exchanges

Most tangibly, genteel northern Americans networked improvement by exchanging with each other and with their European correspondents, botanical, zoological, and agricultural literature; sketches of effective pasture, planting-row, and property divisions; equipment; and planting or breeding stock. The circulation of seeds, seedlings, scions, and in some cases, livestock, was not neatly organized or dominated by formal institutions but, again, by the corporate, familial, or incipient institutional networks characteristic of transatlantic and imperial relationships in the eighteenth and early nineteenth centuries. In improving circles, these relationships tended to be personal or offshoots of commercial and political connections.

Especially after 1783, northern Americans' connections to colonial improvers beyond the region became more extensive. Thomas Brewer, an agent for a Boston merchant and MSPA member who regularly traded in South American ports, in 1807 promised to return with "Patagonian wheat" for the Society. He had hoped to bring "a great variety of Seeds, roots, shrubs, flowers, &c&c with which that country abounds, as I had them collecting in the vicinity of Buenons Ayres for me" but had "been hurried

isolated but flourishing 18th-early 19th century Acadian settlements on what became the Maine/ New Brunswick border, see Richard M. Candee, "Maine Towns, Maine People: Architecture and the Community, 1783-1820," in Charles Clark, et al., eds. *Maine in the Early Republic: From Revolution to Statehood* (Hanover: University Press of New England, 1988), 26-61, esp. 32-35.

away from that country.”¹²⁷ Improvers in Edinburgh, Demerara, and Durban offered Windsor, Nova Scotia gentleman farmer Charles Ramage Prescott “specimens of wheat from Spain & other countries” in exchange for his “admirable” seed potatoes.¹²⁸ Friends, relatives, and colleagues gifted or subsidized each other across short and long distances. Favorite, unusual, or commercially promising seeds, plants and animals were proof and reward for household gardening or breeding accomplishments, emblems of wealth and privilege, or symbols of affective ties among senders and receivers. When New York naturalist Samuel Mitchell sent Joseph Banks “a small Collection of Plants,” he hoped that Banks would accept it “not because they are new, but because they are American and are a token of my respect.”¹²⁹

The process of hiring laborers or professional gardeners similarly provided an occasion for improvers to reinforce their credibility with each other. These consultations were another form of exchanges layered with personal and political meanings. Lord Dalhousie assured Charles Prescott that he would send his man Cameron, who “kn[ew] his business,” to separate grape vines at Prescott’s vineyard.¹³⁰ When colleges or learned societies sought the practical expertise of professional gardeners to establish their experimental plots they tended to hire through the advice of previous employers. In 1781 the newly formed AAAS planted their garden with the help of a recommended gardener from England. Twenty five years later, the MSPA’s Board of Visitors of the Botanic

¹²⁷ Thomas Brewer to Samuel Pomeroy, March 25, 1807, Box 20, Folder 7, MSPA, MHS.

¹²⁸ Sir James Kempt to Charles Ramage Prescott, May 12, 1828, Thomas Cochran Hammill to Maria Prescott, August 25, 1835, October 20, 1818, Prescott Family Papers, Nova Scotia Museum.

¹²⁹ Samuel Latham Mitchell to JB, September 5, 1795, BL Addl. Mss. 8098.462-463.

¹³⁰ Lord Dalhousie to Charles R. Prescott, October 20, 1818, Prescott Family Papers, Nova Scotia Museum.

Garden at Harvard sent William Peck on a European botanical garden tour where, among other contacts, he was expected to scout for an “Intelligent Gardener” during his visits to Kew, the Hortus Botanicus, and the Jardin des Plantes. As one committee member wrote to Peck from Boston, “I do not believe one can be procured here at all qualified.”¹³¹ Peck ultimately devised his plan for Harvard’s garden based on “conversations & consultations” with Gabriel Thouin (son of the Jardin’s head gardener Jean-André Thouin and younger brother of botanist André Thouin), who Peck endorsed as “a gentleman of eminence in the Profession of ornamental gardening & ... in the disposition of the imperial & other ornamental grounds in the vicinity of Paris.”¹³²

In Nova Scotia, colonial authorities not directly engaged in science recognized that the presence of a botanical institution, particularly one maintained by a professional gardener, was a matter of prestige and diplomatic importance to the empire. Fearing that the colony’s government was “no Votary to Botany,” the Duke of Kent asked Joseph Banks to write to lieutenant general Henry Bowyer and “move His Heart that way,” so he would assist in the relocation of the duke’s gardener to Halifax. Bowyer obliged their request, assuring them that he would “give every countenance & encouragement & shall be happy to be in any way instrumental in promoting the Science of Botany.”

¹³¹ William Cutler and Julia Cutler, eds. *Life, Journals, and Correspondence of Reverend Manasseh Cutler, LLD, By His Grandchildren* 2 vols. (Cincinnati: Robert Clarke & Co., 1888), v. 1: 86; Dudley Tyng to WDP, September 30, 1806, WDP Papers; “Report of the committee on ye Garden,” July 30, 1808, Box 13, MSPA Papers, MHS; Thornton, *Cultivating Gentlemen*, 63-64; John C. Greene, *American Science in the Age of Jefferson* (Ames: Iowa State University Press, 1984), 84. From 1805 to 1830, Harvard’s Professor of Natural History was established and supported by a visiting committee composed of MSPA and AAAS members (and in 1814 also backed by an annual grant from the state legislature). In 1833, Harvard alumnus and MSPA member Fisher Ames endowed the Fisher Professorship in Botany and Natural History, which replaced the older position.

¹³² June 1808, WDP to Dudley Tyng, Box 13, Folder 30, MSPA, MHS.

Anticipating future commands, Bowyer promised continued support for botanical experiments in the province, "... know[ing] they will tend towards the improvement of Science & for universal benefit."¹³³

By welcoming the creation of a scientific garden in Nova Scotia, provincial administrators hoped to elevate the profile of their fledgling colony. We know from his 1814 obituary that royal gardener Michael Dalton spent the rest of his life managing the grounds of the British Commander-in-Chief of North America's summer home. But by the 1820s, the estate was already "relapsing into a state of nature": a "modern ruin" full of "overgrowth" and "vegetable decomposition." Dalton's role in promoting the imperial plant trade and cultivating science in North America seemed to lay mostly in the symbolic agreement between authorities for his transatlantic transfer.¹³⁴

Who cared about the northern colonies?

After the American Revolution, Secretary of the British Board of Agriculture Arthur Young, who had become a critic of expanding the empire in South Asia, also voiced concern about the value of retaining its northern North American colonies. Young warned in his periodical *Annals of Agriculture* that proposals to cultivate "the deserts,

¹³³ William Aiton to Joseph Banks, [October 4, 1803], BL Addl. Mss. 33982.264-265; Henry Bowyer to Joseph Banks, December 23, 1803, BC 2.282, Royal Botanical Gardens, Kew, Library and Archives.

¹³⁴ [Obituary for Michael Dalton] February 12, 1814, *Acadian Recorder*; [Thomas Haliburton (a.k.a. Sam Slick)], Erskine Neale, *The Life of Field Marshall, HRH, Edward, the Duke of Kent* ... (London: Richard Bentley, 1850), 75-80.

marshes, and snows of Canada and Nova Scotia,” were counterproductive to domestic interests. Helping these provinces gain economic self-sufficiency, he argued, would inevitably lead to another costly war for independence.¹³⁵ While Young worked to block support for northern American improvement, other influential figures in British imperial agricultural science and natural history simply paid little attention to the region. Despite Joseph Banks’s early travels to Newfoundland and Labrador and his enduring fascination with Iceland, official duties focused his attention on studying and exploiting the flora of Britain’s plantations in tropical and sub-tropical regions of the world. Likewise, British North America was of comparatively minimal interest to Banks and, therefore, to most naturalists and improvers under his patronage.¹³⁶

In the early nineteenth century, Banks experimented with some plants from northern America. A productive thirty-three square foot plot of “unimproved” American cranberry (*Vaccinium macrocarpon*) grew in his Spring Grove estate, a fruit which had “become an object of some importance in the economy of the family.” But the planting had “originated entirely in a fortunate accident,” rather than a deliberate attempt to improve this northern cultivar.¹³⁷ However minor in a global view, the significance of any metropolitan interest in northern nature or acclimatizing warmer-climate plants to

¹³⁵ Arthur Young, *Annals of Agriculture and Other Useful Arts* 1: 1 (1784). See also Gerald S. Graham, *British Policy and Canada, 1774-1791: A Study in Eighteenth Century Trade Policy* (Westport, CT: Greenwood Press, 1974).

¹³⁶ Ray Desmond, “The Transformation of the Royal Gardens at Kew,” in *Sir Joseph Banks: A Global Perspective*, ed. R.E.R. Banks (Richmond: Royal Botanic Gardens, 1994), 105-15.

¹³⁷ Joseph Banks, “Some Hints Respecting the Proper Mode of Inuring Tender Plants to Our Climate,” *Transactions of the Horticultural Society of London* v. 1 (London: 1805), 22-25; idem., “An Account of the Method of Cultivating the American Cranberry... at Spring Grove,” *Transactions of the Horticultural Society of London* v. 4 (London: 1808), 75-78.

temperate regions was amplified by northern American improvers. When he visited Banks's Spring Grove garden in 1805, William Peck was particularly impressed by his experimental plots of cranberry and other native northern American plants like wild rice (*Zizania aquatica*) and golden heather (*Hudsonia ericoides*).¹³⁸ Peck recognized the *Zizania* because in 1804 he had attended an AAAS meeting where members examined some grains sent to them "from Canada," but the idea for planting it in the Harvard garden was inspired by Banks's success with it. Moreover, Peck decided that it would be easier to import wild rice "seeds" from England "than it would be if [he] should attempt to get them from Canada." Once home, Peck distributed Banks's wild rice—preserved in wet moss and stuffed in a tin canister—to other American botanists, advising that they toss them into local ponds.¹³⁹

Citizens of the world

Seeking public support from the Massachusetts House of Representatives for Harvard's costly garden, improvers argued that a world-class "botanick Institution" in Cambridge was a necessary object of a modern state. Judge John Lowell pointed out that "not only every Country but ever city of Europe can boast similar establishments equal to the one contemplated here, and the Legislature of New York have lately ...

¹³⁸ [European tour journal], Sunday August 9, 1807, Box 2 HUG 1677; and London, September 15, 1807, WDP to Dr. David Hosack, WDP Papers.

¹³⁹ London, September 15, 1807, WDP to Dr. David Hosack, WDP Papers.

endowed a similar Institution in that State.”¹⁴⁰ Improvers touted agricultural science for its practical utility to farmers and its economic benefits. But for North American improvers, engagement with agricultural science had a distinctly personal significance: it meant being active members of social and intellectual circles beyond the confines of their local community. Within those bigger circles improvers generated good publicity for the region by describing their well-kept estates, proving that northern America was a good investment and a comfortable place to live. One of Benjamin Vaughan’s correspondents wondered whether Vaughan, “after living in the great vortex of cultivated society ... w[ould] miss the company of Men of letters,” but Vaughan assured him that they were creating a cultivated society in Maine.

In turn, improvers could exploit their membership in long-distance networks to enhance their authority and social status closer to home. They hoped that their own flourishing farms and manicured domestic gardens would be an object of envy among locals, who might consequently show greater deference to improvers’ conspicuous financial and cultural capital. Ideally, the improvement of individual farms would spread out to larger and more public spheres. Elites in settler societies networked improvement in order to prove that they had planted improvement and ultimately, to expand and decentralize the geography of enlightenment culture, so that it would naturally encompass gentrified regions outside of Europe.: to “unite Countries together,” as one of Benjamin Vaughan’s sons expressed a common enlightenment sentiment “in one great Chain or

¹⁴⁰ John Lowell to Mr. Bigelow, February 9, 1809, Box 11, Folder 7: Correspondence, MSPA, MHS, (emphasis in original).

link.”¹⁴¹ Northern improvers in New England and Nova Scotia were at least partly successful in this ambition—transatlantic networks of improvement were more dynamic after the war than before it.

¹⁴¹ William Vaughan, London to Dr. Joseph McKeon, President of Bowdoin College, August 15, 1805, Carton 2, Folder: Correspondence, August 1805, VFP, MHS.

Chapter 3 The Discourse of Colonial Improvement

“The improvements which have taken place in the agriculture of the United States, during the last twenty or thirty years, are very great. Our farmers, it is true, are far from having kept pace with their European brethren in enterprise, and the adoption of new and profitable modes of cultivation. Many of them obstinately adhere to practices which have been completely exploded; and neglect other and better, though recommended by the fullest experience. But if much remains to be done, much has also been performed towards the correction of this evil. ... Gentlemen of learning, observation, and property have zealously embarked in this interesting cause. The adoption of trans-atlantic improvements is gradually becoming more common.”¹

Early modern agricultural improvement was a scientific discourse of empire that naturalized the relationship between expertise and the territorial expansion of British colonies. In theory, improvement was a critique of traditional farming and a set of scientific methods, which transcended the peculiarity of local circumstances and promised rural economic modernization. In practice, the rhetoric and application of improvement was inevitably localized. Improvers in Nova Scotia and New England emphasized their trans-local connections to improvement networks beyond the region and their scientific approach to farming in order to strengthen their authority as local elites.

Speaking of his visits with British improvers John Sinclair and Thomas William Coke, William Dandridge Peck reported that “prejudice is as strong in that country as in

¹ Samuel Miller, *A Brief Retrospect of the Eighteenth Century*, 2 vols. (New York: T. & J. Swords, 1803), vol. 1: 388-389.

this, as any other, against the introduction of any improvement useful.”² But beneath the consensus about the obstinacy of common farmers and the necessity for economic modernization, lay disputes among improvers about how to achieve progress and contradictory motives for doing so. If northern American improvers mimicked some aspects of European improvers’ hostility towards conventional practices, their criticisms of local farmers and the landscape were attenuated by the exigencies of colonization, the British-French imperial competition for northern territory, and the agricultural limits of the region’s environment.

The energetic hands of Britons

Improvement was an abiding rhetoric of British imperialism—both within the Three Kingdoms and in Britain’s colonial and former colonial possessions abroad. For those invested in territorial ventures, the concepts of settlement and improvement were nearly synonymous. English landlords had long referred to profitable reclamation or consolidation as improvement. In the early modern period, more ambitious rural land reforms, such as the enclosures imposed in regions of Scotland and Ireland, were promoted for their public virtues (from spurring economic development to raising the

² WDP, “Report for the President of the Board of Visitors on trip to Europe,” Box 2, Folder: Papers 1808-1810, WDP Papers, Harvard University Archives.

standard of living), whether introduced by private or government initiative.³ As the British claimed territories further abroad, the financial, legal, and other benefits of improvement appealed to migrating settlers of various social positions eager to secure property from indigenes or from colonists representing competing European states.⁴

If the rhetoric of improvement in the American colonies was somewhat attenuated it was because it reflected the ideology of agricultural improvement in a region perceived to be uninhabited, or at least wanting in the proper kind of people. Agricultural improvement was challenged by the demographic requirements of settler colonization, the need to attract permanent migrants in substantial numbers, rather than, as in Britain—or at least in England—where agricultural improvement was primarily a policy of displacing rural people.

In the early stages of colonization, an improved landscape was one marked by exclusive property boundaries and dominated by separate pastoral and arable fields. Fenced grounds simultaneously stabilized English claims to indigenous lands and

³ On the ideology of agricultural improvement in Britain, see Richard Drayton, *Nature's Government: Science, Imperial Britain, and the 'Improvement' of the World* (New Haven: Yale University Press, 2000); Simon Schaffer, "The Earth's Fertility as a Social Fact in Early Modern England," in Mikulas Teich, Roy Porter, and Bo Gustafsson, eds. *Nature and Society in Historical Context* (New York: Cambridge University Press, 1997), 124-147; Sarah Wilmot, *The Business of Improvement: Agriculture and Scientific Culture in Britain, c. 1770-1870* (Bristol: Historical Geography Research Series, no. 24, 1990); Harriet Ritvo, *The Animal Estate: The English and Other Creatures in the Victorian Age* (Cambridge: Harvard, 1987). On improvement as a mode of colonization within Britain, see Fredrik A. Jonsson, *The Enlightenment in the Highlands: Natural History and Internal Colonization in the Scottish Enlightenment, 1760-1830* (unpublished Ph.D. dissertation, University of Chicago, 2005).

⁴ On the ideology of improvement and colonization, see David Armitage, *Ideological Origins of the British Empire* (New York: Cambridge University Press, 2000), esp. chapter 2; Chaplin, *An Anxious Pursuit*. On improvement and Atlantic commerce, see David Hancock, *Citizens of the World: London Merchants and the Integration of the British Atlantic Community, 1735-1785* (New York: Cambridge University Press, 1995), 281-283.

promised increasing financial returns.⁵ Planting newly cleared land could also be promoted as a Christian duty. Since the “whole earth is the lords Garden,” explained the Puritan governor of Massachusetts John Winthrop, it was improvident to “suffer a whole Continent, as fruitfull & convenient for the use of man to lie ... without any improvement.”⁶ Raising food to sustain settlers was necessary, but English agriculture was also thought to exert a moral force on people. Domesticating alien environments was a crucial first step in making the margins of the world into more familiar and therefore civil territory, as when New English planters secured a Protestant ascendancy in Ireland in the sixteenth and seventeenth centuries.⁷

For everyone associated with the project of expanding British settlement, improving territory meant establishing and maintaining a relatively familiar and productive agricultural economy: forests would be harvested, fields enclosed and fertilized, fences and outbuildings erected and maintained, seed and livestock imported and periodically refreshed. On this level, the program of improvement was assumed as

⁵ William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York: Hill and Wang, 1983); Virginia D. Anderson, *Creatures of Empire: How Domestic Animals Transformed Early America* (New York: Oxford University Press, 2004).

⁶ Winthrop, “Reasons to Be Considered for Justifying the Undertakers of the Intended Plantation in New England and for Encouraging Such Whose Hearts God Shall Move to Join with Them in It,” (1629) in ed. Peter C. Mancall, *Envisioning America: English Plans for the Colonization of North America, 1580-1640* (Boston: Bedford, 1995), 135. Richard Drayton, *Nature’s Government: Science, Imperial Britain, and the ‘Improvement’ of the World* (New Haven: Yale University Press, 2000), 3-25.

⁷ David Dickson, *Old World Colony: Cork and South Munster, 1630-1830* (Cork: Cork University Press, 2005), 170-248; David Armitage, *The Ideological Origins of the British Empire* (New York: Cambridge University Press, 2000), 49-50, 97; Nicholas Canny, “The Ideology of English Colonization: From Ireland to America,” *William and Mary Quarterly* 30 (1973): 575-98.

one of “common sense, and common information.”⁸ By remaking wastes and wilds into productive farms, settlers could prove their own “honesty and industry.” As an advertisement for a 4000 acre farm close to Halifax specified, “no person” who could not demonstrate these qualities, “need apply.”⁹ Even if settlers made “mistakes and errors ... for the want of knowledge and experience in Agriculture,” a land agent in Nova Scotia observed, all migrants to British colonies “first attempted to Improve this Country.”¹⁰ Britons embraced improvement wherever they settled, casting colonization as land reform.

In the late seventeenth and eighteenth centuries, the British employed the rhetoric of agricultural improvement to legitimate their conquest of Catholic New France, justifying the Crown’s encroachment on Mi’kmaq, Acadian, and Canadian lands in militaristic, millenarian, and mercantilist terms. The last of these would seem to be the most pragmatic, but the rhetoric of improvement was not always easily confounded with the nature of Nova Scotia or Quebec. To attract British settlers to these new northern colonies, British surveyors focused on the improbability of lands. But some places appeared disconcertingly barren and unimprovable. The soil near the isthmus of Nova Scotia seemed “so irrecoverably bad, it can never be a PLANTATION,” wrote one colonial American historian in 1749. Drawing an analogy to Georgia, another relatively new colony that buffered British America from the Spanish empire in the South, the unfertile parts of Nova Scotia would only be useful “as a Barrier against the Canada and

⁸ Columella, [Reprinted letter “To the Secretary of the Agricultural Society at Halifax,” March 5, 1790], *Nova Scotia Magazine*, May 1790.

⁹ January 6, 1795, *The Royal Gazette and the Nova-Scotia Advertiser*.

¹⁰ Isaac Deschamps, “Observations on the Progress of Agriculture in Nova Scotia and New Brunswick with Notices of Acadian Manners and Customs ...” (1782), RG 1, vol. 284, NSARM.

Cape Breton French with their Indians.”¹¹

This writer suggested a broader assumption that had gained increasing favor in the British empire: that colonization was more effective through plantation—that is, through distinctively English agricultural settlement and improvement—than merely through military operations or religious crusades. Detecting fertility in colonized territories and publicizing these findings in order to attract settlers thus became essential to projects for expanding the empire.

However, the demographic and economic imperatives of British settler colonization were sometimes incompatible or simply difficult to effect and these tensions were evident in the strained attempts to couch descriptions of Acadian lands in the rhetoric of colonial improvement. Parts of the peninsula had nominally been in British hands since the Anglo-Mi'kmaq wars of the 1710s but actually continued to be the domain of Algonquin groups and French settlers.¹² A Massachusetts man touring Annapolis Royal and Chignecto in the early eighteenth century noted the poverty of the area:

There is no such thing as an oak, walnut or chesnut tree in these parts and the land so poor that no other trees grow to be above a foot or foot & half over, & very few so large.

The same traveler, however, was satisfied with the local provisions—the “bonnyclabber, Soup, Sallet, roast shad & Bread & Butter & ... Roast mutton” that his Acadian hosts fed

¹¹ William Douglass, MD, *A Summary Historical and Political, Of the First Planting, Progressive Improvements, and Present State of the British Settlements in North America* 2 v. (Boston: Rogers and Fowle, 1749), 133.

¹² Geoffrey Plank, *An Unsettled Conquest: The British Campaign Against the Peoples of Acadia* (Philadelphia: University of Pennsylvania Press, 2001).

him at dinner.¹³ Accordingly, many early British depictions of the peninsula's environment and French farmers were favorable to the extent that Acadian landscapes showed signs of agricultural potential, which British settlers would more fully exploit. In 1717, three British merchants wrote to the Board of Trade that,

The Soil of the Country is in General very good, abounding in the necessary Subsistence for Cattle, and bears all Sorts of European Grains in great Plenty where it is cultivated by the french.

The lands were also “capable of great Improvements”—capable, but evidently not fully realized under French possession. If the Board of Trade hoped to take advantage of the these untapped riches they would have to send “thither a Colony of your Majesty’s Subjects.”¹⁴

Interest in the agricultural potential of foreign lands was evident among all the expansionist early modern European empires. But the focus on conquest through settler plantations was particularly emphasized by the British, who couched this strategy in a strongly partisan, sometimes xenophobic rhetoric figuring British farmers as superior in skill, vigor, and ambition. Especially when Acadian farmers refused to swear oaths of allegiance to British rule after the Treaty of Utrecht, colonial officials formulated a policy of confiscating Acadian lands. In 1720, a British military engineer argued for the legitimacy of such seizures in terms of Britain’s superior ability to exploit the lands rather than their imperial rights to sovereignty. He could tell from Mi’kmaq and French gardens that the soil was “rich in its produce,” but they had “not improved as might be

¹³ July 27-28, 1731, Robert Hale’s Journal of an Expedition to Nova Scotia, 1731, (typescript), MG1, Box 1898, Folder 10.1, NSARM.

¹⁴ P. Meadows, J. Bruce, and J. Merrill to Board of Trade, June 22, 1717, MG1, v. 1520, Folder M, [copy of PRO CO 217/2, WA 53], NSARM.

expected, they living in a manner from hand to mouth.” He felt certain that Britons would make “better improvement of it for which their Industry is farr superiour to the french.”¹⁵ This sentiment was corroborated by other reports, which urged the Board to displace French farmers as well as “the Indians who are their firm allies,” which would “prove effectual to establish the King’s authority in this Province and facilitate the settling the same so as to prove in time advantageous to the Crown and to the Trade of Great Britain.”¹⁶

In 1784, Joseph DesBarres, the newly appointed governor of Cape Breton Island wrote the Lords of Trade that although British settlement there was presently sparse, he was encouraged by its strategic location for mediating the fisheries between the Gulf of St. Lawrence and the North Atlantic, for which “France valued most of all she ever held in North America” and had accrued “greater profits and more solid advantages than from all her other transatlantic territories in a century.” He also “could not help pointing out” that the island contained “upwards of two millions of acres of Land the chief part of which is equally fit for culture as any in America—covered with all the species of useful timber common to the Provinces lying north of New York,” but which the French had left uncultivated (See Figure 1.) Yet “it appeared rational to anticipate,” DesBarres assured the Lords, that the lands would be improved “in the more energetic hands of Britons.”¹⁷

¹⁵ [J.D] Mascarene, “Description of Nova Scotia,” 1720/21, MG1, v. 1520, Folder P [copy of PRO CO 217/3], NSARM.

¹⁶ Council for Nova Scotia, Report to the King, September 27, 1720, MG1, v. 1520, Folder O, [copy of PRO CO 217/4, WA 53], NSARM.

¹⁷ Cape Breton Governor’s Accounts, 1784-1801, J.F.W. DesBarres Fonds, Series 3, 1774-1807 (MG 23, F1-3), Library and Archives Canada. DesBarres was a Swiss Huguenot emigrant to Britain, an engineer in the Seven Years’ War, and the draftsman and artist for *The Atlantic Neptune* (1777-1784), a major hydrographic survey of the northeastern coast of North America. Rather than the cash payment for which he spent



Figure 1: DesBarres's sketch of Cape Breton. The grid overlaying the coastal perimeter and eastern parts of the island were seventy prospective tracts for settlement; DesBarres labeled the interior 'hunting country.'¹⁸

much of his later life petitioning the Admiralty, he received as compensation political appointments and several huge land grants in Nova Scotia and Cape Breton Island totaling just under 80,000 acres. See G.N.D. Evans, *Uncommon Obdurate: The Several Public Careers of J.F.W. DesBarres* (Salem: Peabody Museum, 1969).

¹⁸ "A Chart of the Island of Cape Breton," published in *The Atlantic Neptune* (London, 1781?), <http://www.nmm.ac.uk/collections/explore/object.cfm?ID=HNS%20139>.

This difference between the British and French empires might have been reflected in their separate vocabularies, or at least so thought a translator of the travel narrative of La Rochefoucauld-Liancourt, a French acquaintance of Arthur Young who was interested in surveying American agriculture in the late eighteenth century. There were “some words, which, when translated, do not perfectly convey the signification that attached to them in English.” For example, “the word settler has never the same meaning with *habitant*”; neither were the words cleared and *éclairci* interchangeable:

the word *cleared* signifies a piece of land where some great trees have been felled, and others have had an incision cut round them in the bark, and the branches lopt off and burnt, in order that corn may be sown. This is not perfectly explained by our word *éclairci* which only means that some branches have been cut off, either for the purpose of forwarding the growth of those that remain or of adding to a pleasant prospect.¹⁹

Although the translator’s point was somewhat muddled, he seemed to suggest that simply occupying land was insufficient to the British notion of clearing and settlement. British colonial farmers were Lockean improvers, not squatters.

¹⁹ *Travels through the United States of North America, The Country of the Iroquois, and Upper Canada, in the Years 1795, 1796, and 1797... With an Authentic Account of Lower Canada.* trans. H. Neuman, 2nd ed. 4 v. (London, 1800), v. 1: [translator’s preface].

The whole country are bad farmers

The French immigrant J. Hector St. John de Crèvecoeur extolled this ideal of improvement and the American farmer as its the paragon. His *Letters to an American Farmer* rehearsed a range of Enlightenment climatic, economic, and cultural theories to support the entitlements of improving freeholders. The American farmer had taken, Crèvecoeur explained, a “formerly rude soil” and converted it “into a pleasant farm, and in return it has established all our rights; on it is founded our rank, our freedom, our power as citizens, our importance as inhabitants.” Agricultural improvement was “the true and the only philosophy of an American farmer.”²⁰ Enlightenment theories which suggested that progress from barbarism to civility would be effected and evident in the landscape provided the dominant framework for the discourse of improvement and for elite observers’ perceptions of North American cultivable environments.

This view was exemplified by improving farmers’ reflections on their encounters with Indians and their association with wild places in the north like barren coasts, forests, and wetlands. When “Indians from Mohegin” came to live at Ebenezer Parkman’s farm in the winter of 1771-72, Parkman suggested they set “their Wigwam in ye Swamp y’t is near us”—neither Christianized nor farmers, a swamp was a place fit only for Indians.²¹ Although Mi’kmaq men told Titus Smith where he could find good farmland in Nova Scotia, Smith was surprised to meet an Indian who had actually “been at work this season and raised a small crop of corn, wheat and potatoes,” asserting that most Indians were

²⁰ J. Hector St. John de Crèvecoeur, *Letters to an American Farmer* (New York: Dutton, 1957 [1782]), 20-21.

²¹ December 1771-March 1772, Ebenezer Parkman Papers, 1718-1789, Ms. N-662, MHS.

merely fishermen and hunters. Smith praised the man for “his resolution to be a farmer,” despite the objections of “his squaw who was always uneasy, [and] finally ran away from him into the woods.” Smith guessed that the man’s interest in agriculture would be short-lived:

probably his countrymen will finally persuade him to quit his new occupation as he will be ... looked upon as a white man by Indians ... We have met with a very few instances of Indians who have undertaken to cultivate the ground and to work with some industry.²²

But in some circumstances improvers spoke of colonial American farmers in unflattering terms. The widespread rhetoric of improvement was also employed by New England veterans of the Seven Years’ War who petitioned the Board of Trade for land in Nova Scotia as a reward for their service, but most of these grantees never rose to be large proprietors.²³ This first wave of British migrants to Nova Scotia were nearly always judged by later settlers as “ignorant, indolent, bad managers,” who since the 1760s had shown “neither the inclination nor industry to make great improvements.”²⁴ In the 1780s, a British land agent who opposed another mass expulsion of Acadian families believed that the New England Planters were more deserving of eviction. They had made only “slow progress” in cultivating Nova Scotia, and could never improve or be improved since they were “ignorant of the true principles of husbandry and ... full of Bigotry and

²² Titus Smith, “Survey of the Eastern and Northern Parts of the Province in the Years 1801 & 1802,” RG1 380, NSARM.

²³ “Applications for Lands,” CO 323/21, Colonies General: Original Correspondence, The National Archives, Kew.

²⁴ John Robinson and Thomas Rispin, *Journey through Nova-Scotia Containing a Particular Account of the Country and its Inhabitants* (Sackville: Ralph Pickard Bell Library, Maritime Literature Reprint Series, 1981 [1774]), 24.

Superstition, they disdained to avail themselves of Instruction.”²⁵ Thus newer settlers aired their contempt for the Planters in the language of improvement, and disturbed, perhaps unintentionally, its connection to the parallel rivalry between Britain and France.

Over the course of the seventeenth and eighteenth centuries Acadians across the Bay of Fundy coast had developed a distinctive agriculture based on the extensive cultivation of tidal salt marshes and the invention of unique hinged valves that regulated water flow through dikes. In the late eighteenth century, some British observers championed the ingenuity and industry of French farmers in Nova Scotia, but often as an indirect expression of displeasure with other inhabitants. One agent for the Board of Trade, for example, communicated his disapproval of absentee proprietors living in Halifax, accusing them of driving “poor unfortunate” Acadians from their tenancies, even though it was “a known fact that this Land previous to [French colonization] was as much in a state of Nature as it was when Noah came out of the Ark.” The town gentry, in turn, elevated Acadians above other local farmers. One Loyalist resettler in Nova Scotia told his correspondent that “at the beginning of the American Revolution, this Province was just emerging from a state of wretchedness into which it had been plunged by the indolence of its Inhabitants and the bad Policy of its Government.” He referred not to the “industrious Acadians,” but to those he called “the refuse” of New England: the so-called Planters who arrived in the years following the Acadian removals.²⁶

²⁵ Isaac Deschamps, “Observations on the Progress of Agriculture in Nova Scotia and New Brunswick with Notices of the Acadians who were settled before us in Manners and Customs ...” 1782, RG 1, vol. 284, NSARM.

²⁶ John Brittain, “Description of the Harbours on the coast of NS from Halifax to Mahone Bay,” and William Shaw, Halifax to Colonel Edward Winslow, Jan 1 1785, C.B. Ferguson Papers, MG 1 Box 1898, Folder 9, Typescript, NSARM.

For their part, Acadians often adopted the language of improvement when it was instrumental in gaining sympathy and concessions from British landlords. One Acadian tenant farmer asked Joseph DesBarres for protection from escheat, reminding “Mr. Dabar,” that “when you was here last you asured [sic] me that the land you settled me upon here was now belonging to you.” If he were evicted, the man would be “disappointed to lose so much time and labour,” and begged DesBarres to allow him to “go on to Improve without fear.”²⁷

John Macdonald, a large landlord in Prince Edward Island (PEI) expressed the common opinion of improvers everywhere when he ventured that the Acadians were probably of equal capability with ordinary British American farmers—that is, that all were equally incompetent:

true they are in several respects bad farmers & do not seem likely to improve; but the whole country are bad farmers and do not seem to do justice to the lands and if the Acadians are worse in some points, than our sort are, they are better in others.

Momentarily assuming a modest tone, Macdonald even allowed that his own estates in Prince Edward Island might be judged harshly by “an observer from another country [who] would certainly see much to be altered & corrected.”²⁸ At present he did not have the time or resources to spare for substantial changes to his properties. In general, improvers and naturalists were rarely so reflexive or ambivalent about their own abilities or their comparison to common farmers, but northern landowners’ greater interest in selling their lands to migrants or retaining tenants sometimes overwhelmed their impulse

²⁷ Peter Melançon to DB, September 14, 1773, J.F.W. DesBarres Fonds, Series 5, Additional correspondence and papers, 1762-1894 (MG 23, F1-5), Library and Archives Canada.

²⁸ Tatamagouche and Minudie Estates, DesBarres Papers, NAC.

to demean them.

These kinds of ambiguities sometimes make it difficult to assess whether American improvers' critiques were concerned primarily with land quality or with the ineptitude of farmers. William Russell and his family, like their friend Joseph Priestley, had fled from rioters in Birmingham and toured the United States in 1794-5 to find a farm to purchase. Russell's eldest daughter Martha was most enthusiastic about central Connecticut. Middletown, where the family eventually settled and established a nursery and breeding operation, seemed to her a tableau of model farms:

a fine undulating country, richly and extensively cultivated, Were I to sit down and in idea paint a country as I could wish to find it, no visionary fancies could approach nearer my wishes than this ... reality.

Maybe because most of the other places they visited on their New England tour fell far short of expectations, she reminded herself that: "I ought to recollect that this country is more than as old again as some of [the other States], and has therefore had so much the longer time for improvement."²⁹

In 1744, a wealthy Scottish immigrant toured the colonies north of Maryland, keeping company as much as possible with people of his own rank. While he filled his diary with ridicule of the American scene, he found Newport in particular to be "a pleasant, open spot of land, being an intire garden of farms." Most accounts agreed with this assessment. During the Revolutionary war, many Newport farms were neglected or destroyed, but those that had been preserved showcased rare flowers, aisles paved with

²⁹ S.H. Jeyes, *The Russells of Birmingham in the French Revolution and in America, 1791-1814* (London: George Allen, 1911), 188-89. See also Martha Russell's "Journal of a Tour to America, 1794-1795" in Amanda Vickery, ed. *Women's language and Experience, 1500-1940: Women's Diaries and Related sources* [microfilm] (Marlborough, England: Adam Matthew Publications, 1994-2004).

marble, and hothouses supporting espaliered tropical fruit trees. Massachusetts botanist Manasseh Cutler declared one local estate “the finest by far [he] ever saw.” Indeed, coastal Rhode Island was so thoroughly cultivated that it was surprisingly familiar to the British officers stationed in Newport during the war.³⁰

Yet these views of Newport are hardly detectable if one relies on the comments of other improvers, including Martha Russell who declared Rhode Island to be entirely a “vile country.”³¹ Farmers there showed “apathy and indifference to everything”—an attitude which was “particularly obvious as relates to the gardens and farm-yards.” Improvers in the Rhode Island agricultural improvement society promised to “open a new world in agriculture.” But they claimed that, as of yet, neither the state’s “generous” and “kindly” soils nor its abundant springs and rivers had been sufficiently exploited.

With these advantages, our agriculture yet remains in a very rude state. Our husbandry is only the traditionary husbandry of our fathers. What they introduced, we have continued. What it was a century ago, it is now. It has remained stationary at that point. With great means of improvement, we have made none.³²

As should be clear by now, such pessimistic assessments were not specific to Newport. In the majority of accounts in this period, criticisms of the agricultural landscape in various places tended to echo one another and provide little specificity. The similarity in language and their repetition of the same kinds of criticisms no matter where they were

³⁰ Carl Bridenbaugh, ed. *Gentleman’s Progress: The Itinerarium of Dr. Alexander Hamilton, 1744* (Chapel Hill: University of North Carolina Press, 1948), 101-102; *Life, Journals, and Correspondence of Reverend Manasseh Cutler, LLD, By His Grandchildren* 2 vols. William Cutler and Julia Cutler, eds. (Cincinnati: Robert Clarke & Co., 1888), 1: 68-69;

³¹ Jeyes, *The Russells of Birmingham*, 186.

³² Asher Robbins, *An Address to the Society for the Promotion of Agriculture ...* (Newport, RI: 1802).

suggests more about ethnic, political, or other tensions between people in eighteenth-century America than about what farmers were doing on the ground.

The failure of improvement?

Shortly after Britain accepted the independence of the United States, Arthur Young inaugurated his journal *Annals of Agriculture and Other Useful Arts* with a characteristically zealous statement of purpose. “Botanical, chemical, and mineralogical knowledge,” he asserted, increased agricultural productivity and provided “the plainest, most obvious ... most practical method” to address the nation’s war debt. Celebrating the loss of the Thirteen Colonies, Young argued that Britons had to be willing to further divest from unnecessary imperial entanglements. He made an urgent case for domestic development:

Sorry I am to observe ... waste and unimproved land in this island at present. The money went for America—The wastes remain. ... every nerve strained to spread cultivation over American wastes, while those of Britain have been left as if unworthy of all attention.

Young viewed all the colonies of British America as “distant regions held by a precarious tenure,” by those he called “the beggars, fanaticks, felons, and madmen of the kingdom, [who] had been encouraged in their speculations of settling the wilds of North America.” These “colonial schemes” had inevitably led to the “wars of 1744, of 1756 and 1775.” But he especially singled out the insidious effects of “those commonly called the

Northern Colonies,” which attracted industrious migrants and rivaled English ports in the shipping trade, offering little in return to enrich the economy of the mother country. For the future, he was wary of the remaining British North American provinces.

The late peace has preserved Canada and Nova Scotia to us ... but let not the possession of these countries deceive us into an idea that they can be worth colonizing. ... If we are to colonize the deserts, marshes, and snows of Canada and Nova Scotia ... our prospects are indeed melancholy.³³

Thus, Young argued that colonial improvement had ultimately weakened the empire and the nation.³⁴

Young’s many readers in eighteenth-century northern North America would have disagreed with this history of the empire because they viewed the situation in converse terms. Before the Revolution, New Englanders and Nova Scotians interested in scientific agriculture had appreciated its possibilities but argued that its influence was insufficient. Only they, the minority of improving Americans, had modeled their farms after prosperous estates in the English Midlands. In the late eighteenth century, disappointment with the unimproved agricultural scene continued among northerners on both sides of the new national boundary. In 1789 a resettled Loyalist from New England hoping to tap into local concerns to gain a readership for his new Halifax monthly, wrote:

It is remarkable that the Province of Nova-Scotia, with a soil confessedly more favourable to agriculture, is nevertheless fed by the industry of her neighbours. This seems a strong indication that the husbandry of the place must be faulty [and] ... unimproved.³⁵

³³ Arthur Young, *Annals of Agriculture and Other Useful Arts* 1: 1 (1784): 9-84.

³⁴ Scottish naturalist-improvers Thomas Pennant, Lord Kames, and others echoed these anti-imperial sentiments, especially in making their case that Britain should focus on internal rather than overseas colonization. Fredrik A. Jonsson, *The Enlightenment in the Highlands: Natural History and Internal Colonization in the Scottish Enlightenment, 1760-1830* (unpublished Ph.D. dissertation, University of Chicago, 2005), 207-209.

³⁵ *Nova Scotia Magazine and Comprehensive Review of Literature, Politics, and News* (July 1789), vii-viii.

In 1813, two decades after establishing the MSPA, its members were frustrated that “the state of agriculture in this portion of our country is much inferior to that of France and Great Britain ... [and] to many parts of the middle & even southern States.” The Society was devoted to sponsoring and publicizing agricultural science, to convincing local farmers to adopt experimental techniques, methodological rigor, high production standards, and a market ethos, and members saw little evidence of their exertions.

John Lowell, the MSPA corresponding secretary and its former president, reassured his colleagues that they—“the enlightened portion of the community”—could not wholly blame themselves. The MSPA had been one of the first institutions for agricultural improvement in the nation and the reputation of its genteel membership was beyond reproach. Although it was a private organization of elected individuals, from their founding in 1792 they had “call[ed] in the most earnest manner, on every practical farmer, to send to either of the Secretaries in Boston, all the information which he possesse[d] on any subject connected with agriculture.” They solicited and rewarded public involvement by publishing approved correspondence, meeting minutes, and agricultural advice, and by offering grants and prizes for breeding accomplishments, remedies for plant disease, and mechanical innovations. Yet despite these efforts, both small holders and gentlemen with substantial estates had responded with either “ridicule” or “coldness & indifference.” Such attitudes, Lowell suggested, had been the greatest block to the Society’s efforts to reform regional agricultural practice.³⁶

³⁶ *Laws and Regulations of the Massachusetts Society for Promoting Agriculture* (Boston: Thomas Andrews, 1793); *Rules and Regulations of the Massachusetts Society*

British and American improvers perceived wastelands abounding everywhere and claimed that their efforts at agricultural reform had failed. But these condemnations were not simple reflections of agrarian society or landscape. To reconstruct a picture of early North American land-use practices and landscapes, economic, agricultural, and environmental historians have often relied on improvers' descriptions of farming practices and the countryside. American historians have tended to accept the view of rural society as it was described by agricultural improvers—that is, that eighteenth century rural people were resistant to change and that early Americans in particular, were wedded to wasteful, unsustainable farming practices. It is a commonplace in the history of early New England in particular that ordinary farmers were, or increasingly became, careless and intransigent in regard to the innovative planting and soil conservation practices encouraged by genteel farmers.

Improvers in Britain and its overseas colonies throughout the eighteenth century commonly disapproved of contemporary agricultural practices and recurrently announced their failures to persuade allegedly ignorant, unresponsive, or resistant farmers and landowners to try the new methods they proposed. Conventional farming practices may have warranted criticism and modification, but if we take improvers at their word, only an enlightened few who cultivated their gardens and farms using scientific methods, exotic specimens, and new tools gleaned from trans-Atlantic exchanges had succeeded in creating an enhanced landscape of empire.

for Promoting Agriculture (Boston: Fleet, 1796); John Lowell to Society, June 7, 1813, Ms. N-517, Box 19, MSPA, MHS; John Lowell, "Circular letter," January 29, 1816, Box 11, MSPA, MHS.

The frequency with which northern American and visiting improvers described the landscapes of New England and Nova Scotia in negative terms, asserted that agricultural production was stagnant, and that farmers were lazy, wasteful, or utterly primitive contradicts much else that we know about the North Atlantic economy during this dynamic period. Farming households in Massachusetts, Connecticut, and Rhode Island were involved to varying degrees in local, regional, and global commerce from the mid-seventeenth century; by the later eighteenth century, newer settlements in northern New England and in Nova Scotia extended and intensified the geography of regional economic development and trans-local interdependence. Farmers in the colonial and early national Northeast (like their counterparts in northern Europe) were increasingly industrious and oriented towards long-distance markets—producing more for export, consuming more imported goods, and by the late eighteenth century, shifting to, or at least devoting slow seasons, to factory work.³⁷

Adopting the words of eighteenth century improvers also misses the generic and representational aspects of the language that improvers deployed wherever they were in the British empire or its former colonies. For example, William Cronon's classic environmental history of colonial New England, *Changes in the Land*, relied heavily on elite American and foreign travelers' disapproving reports of common land use practices.

³⁷ Winifred Rothenberg, *From Market Places to a Market Economy: The Transformation of Rural Massachusetts, 1750-1850* (Chicago: University of Chicago Press, 1992); Margaret Ellen Newell, *From Dependency to Independence: Economic Revolution in Colonial New England* (Ithaca: Cornell UP, 1998); Julian Gwyn, "Comparative Economic Advantage: Nova Scotia and New England, 1720s-1860s," in Stephen Hornsby and John Reid, eds. *New England and the Maritime Provinces: Connections and Comparison* (Montreal: McGill-Queen's UP, 2005), 94-108.

In his conclusion, Cronon adopted the words of eighteenth century improvers when he called colonial farmers (and by implication, American society), “a people of waste.”³⁸

Cronon’s formulation is compelling because of its resonance with the sensibility of twentieth-century conservationists, but it is ironic with respect to the eighteenth-century usage of the word waste. A wasteland could be any wild or undeveloped environment. Wastes could also refer to a number of perceived deficiencies in land that might potentially be cultivated, including but not limited to lowlands of any kind and especially swamps, the brushy under-story of forests, thin or acid soils, and fallow farm fields. These designations varied from country to country, region to region, county to town to farm lot, particularly in New England and Nova Scotia where land types and soil quality varied significantly within a short distance.

Because of the range of environments that could be called wild, waste, or improved, the meaning and referent of such descriptors depended on who was making the judgment. Just as wasteland was a relative category, so too was the common perception among elite commentators that any particular landscape in fact represented the poverty of

³⁸ William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York: Hill and Wang, 2003 [1983]), 170. See also Percy W. Bidwell and John I. Falconer, *The History of Agriculture in the Northern United States, 1620-1860* (Washington, D.C.: The Carnegie Institution of Washinton, 1925), 84-89; Bidwell, “The Agricultural Revolution in New England,” *American Historical Review* 26: 4 (July 1921): 683-702. Alan Taylor criticizes historians’ anachronistic and elitist tendency to judge early American settlement practices against the principles of modern environmentalism, rather than the material constraints white settlers faced in the backwoods. But in contrast to my argument that these tendencies were typical among local elites, Taylor writes that they were “literally uncommon.” See Taylor, “Wasty Ways’: Stories of American Settlement,” *Environmental History* 3: 3 (July 1998), 291-310, quote on 291.

local nature or the egregious negligence of local farmers.³⁹ Leaving unexamined the underlying assumptions and pretensions of improvement slights what was in fact a primary subject of debates over land reform and economic development on both sides of the eighteenth-century British Atlantic and beyond.

Tradition and modernity

Since improvers used the same words and formulations to describe farmers, agricultural practices, and rural scenes in a wide variety of contexts, and these forms were repeated so consistently through the eighteenth and nineteenth centuries, such critiques were, as often as not, tropes of improvement discourse whose primary referents were not necessarily the characters and landscapes they named.

The eighteenth century rhetoric of improvement does not belong to the buoyant pastoral tradition which American historians tend to associate with the yeoman ideal of Jeffersonian republicanism and its affirmation of hard work and household self-sufficiency.⁴⁰ Despite rare panegyrics like Crèvecoeur's *Letters to an American Farmer*

³⁹ Fredrik A. Jonsson, "Wasteland Mania: The Alternative Modernity of Peat Moss," in *The World Turned Inside Out: Waste in History and Culture*, ed. John F.M. Clark and John Scanlan (Cambridge Scholars' Press, forthcoming).

⁴⁰ Nor did the critical tone originate in the disillusionment of John Adams, Thomas Jefferson, and other leaders in the American Revolution who by the turn of the eighteenth century were aghast at how popular democracy had eclipsed their model of republican democracy and "found it difficult to accept the democratic fact that their fate now rested on the opinions and votes of small-souled and largely unreflective ordinary people." Gordon Wood, *Radicalism of the American Revolution* (New York: Vintage, 1991), 367.

(1782), the rhetoric of science and agricultural improvement was a pragmatic response to enlightenment stadial theories of material and social progress and employed an aggressive language of reform.

When Arthur Young complained that “real farmers” were not answering his call to contribute to *Annals of Agriculture*, he voiced the key message of this eighteenth-century reform movement, a message that was repeated by improvers throughout the Anglophone world. Young’s strident editorials expressed the tone and orientation of improvement ideology. Referring to the countryside surrounding Cambridge, England, Young exclaimed: “Bid the current of national improvement roll back three centuries, and we may imagine a period of ignorance adequate” to describe this “beggarly village ... such sloth—such ignorance—such backwardness—such determined resolution to stand still.”⁴¹

In his *Essays on Field Husbandry*, Jared Eliot was relatively cautious in his criticism of colonial farmers, but he repeatedly noted their “indolence and carelessness” and the deterioration of standards among them.⁴² After reading Eliot’s work, a prominent New Jersey man wrote to him in 1749:

Sir, I have perused your two Essays on Field Husbandry and think the Publick may be much benefited by them. But if the Farmers in your neighbourhood are as unwilling to leave the beaten road of their ancestors

See also Wood, *Revolutionary Characters: What Made the Founders Different* (New York: Penguin, 2006); and Tamara P. Thornton, *Cultivating Gentleman: The Meaning of Country Life Among the Boston Elite, 1785-1860* (New Haven: Yale University Press, 1989).

⁴¹ “A Month’s Tour to Northamptonshire, Leicestershire, &c. July 18, 1791,” in Young, *Tours in England and Wales: Selected from the Annals of Agriculture* (London: London School of Economics, 1932), 203-204.

⁴² Jared Eliot, *Essays Upon Field Husbandry in New England, As It Is Or May Be Ordered* (Boston, 1760).

as they are near me, it will be difficult to persuade them to attempt any improvement.⁴³

A Highland laird turned Prince Edward Island landlord, John MacDonald was hired by Joseph DesBarres to survey his properties in northern Nova Scotia. MacDonald found DesBarres's tenants "settled or huddled together in form of a village," and declared, "I detest it. I hold it to be adverse to the progress of Improvement—and a nasty dirty way."⁴⁴

Later in the century, a Vermont man impressed by an MSPA publication, expressed "pity" that more farmers were not interested in reading it.⁴⁵ According to others, North American farmers from Quebec to Halifax to New York were "indifferent husbandmen" who clung to "deeply rooted prejudices."⁴⁶ "In the section of the Commonwealth where I reside," wrote a Cape Cod improver to the MSPA, "most farmers are content to toil on in the same dull round that their Ancestors have done before them without troubling themselves much about alterations for the better."⁴⁷

The opposition between enlightened or 'book' farmers and practical, ordinary, common, or peasant farmers circulated among improvers throughout the British Empire

⁴³ Carl R. Woodward, *Ploughs and Politicks: Charles Read of New Jersey and His Notes on Agriculture, 1715-1774* (New Brunswick: Rutgers University Press, 1941), 70.

⁴⁴ Tatamagouche and Minudie Estates, DesBarres Papers, Series 2, MG 23, F1, National Archives of Canada (hereafter NAC); Simon Schaffer, "The Earth's Fertility as a Social Fact in Early Modern England," in ed. Mikulas Teich, Roy Porter, and Bo Gustafsson, *Nature and Society in Historical Context* (New York: Cambridge University Press, 1997), 124-147; Sarah Wilmot, *The Business of Improvement: Agriculture and Scientific Culture in Britain, c. 1770-1870* (Bristol: Historical Geography Research Series, no. 24, 1990).

⁴⁵ John Leverett to Aaron Dexter, April 20, 1797, Box 1, MSPA, MHS.

⁴⁶ Hugh Findlay to Oliver Smith, December 4, 1793, Box 1, Folder 11, MSPA, MHS; Duke de la Rochefoucauld Liancourt, *Travels through the United States of North America, The Country of the Iroquois, and Upper Canada, in the Years 1795, 1796, and 1797...* trans. H. Neuman, 2nd ed. 4 v. (London, 1800), 550.

⁴⁷ Benjamin Percival to John Lowell, March 2, 1816, Box 2, Folder 11, MSPA, MHS.

in personal letters, land surveys, agricultural articles in local magazines, and the minutes of improvement societies. Early modern improvers generally represented peasants, tenants, and poor farmers—whether real or figurative—as a contemptible class.⁴⁸ The figure of the ordinary farmer in improvers' writings was typically used to vilify, as one eighteenth-century writer in Nova Scotia put it, "culture derived from ancestors."⁴⁹ Improvers wrote of peasants, small farmers, or simply old men and women, as a way of personifying the negative effects of conservatism. The rustics depicted in improvement literature were emblematic of the past or the circumscribed experience of village life—their practices were dictated by routine and they were altogether indifferent to change.

The learned farmer and the ignoramus were polarized types rather than references to living exemplars of success and failure, and the recalcitrant peasant enlivening the rhetoric of improvement was usually a straw man. Elites employed the discourse of improvement and modernity in public and private communications with each other as a way to reinforce their trans-local solidarity with each other.⁵⁰ The agricultural society in Nova Scotia addressed their queries and publications specifically to gentlemen farmers

⁴⁸ John Barrell, *The Dark Side of the Landscape: The Rural Poor in English Painting, 1730-1840* (New York: Cambridge University Press, 1980).

⁴⁹ *Letters and Papers on Agriculture: Extracted from the Correspondence of a Society Instituted at Halifax for Promoting Agriculture in the Province of Nova Scotia*, vol. 1 (Halifax: John Howe, 1789), 5.

⁵⁰ Simon Schaffer, "The Earth's Fertility as a Social Fact in Early Modern England," in ed. Mikulas Teich, Roy Porter, and Bo Gustafsson, *Nature and Society in Historical Context* (New York: Cambridge University Press, 1997), 124-147; Sarah Wilmot, *The Business of Improvement: Agriculture and Scientific Culture in Britain, c. 1770-1870* (Bristol: Historical Geography Research Series, no. 24, 1990).

and local elites, and it was this class as well which voiced the main objections to the NSSPA.⁵¹

An improver in Flushing, New York and member of that state's agricultural society wrote to the MSPA's secretary reiterating the standard complain that "the Inhabitants of Long Island are not Celebrated for their Improvements in Agriculture—but here are a few who rise Superior to prejudice and the old beaten road of their forefathers & try new meathods [sic] of Improving their Lands & c—it is a Common observation here that men who have been brought up in the City when they retire in the Country make much the best Farmers & by the different manner of Managing their Farms make them produce more than they did before."⁵²

Reading and writing improvement

The comparatively minor economic inequality among white settlers peculiar to New England and Nova Scotia in North America in the seventeenth through early nineteenth centuries was reflected in the region's widespread public school system and high literacy rates. Most northern farmers—both men and women—could read and write. Men in rural areas as well the larger towns typically had some formal education. Yet whether because of the scarcity and expense of paper and ink or because they

⁵¹ "To the Secretary of the Agricultural Society at Halifax," May 1790 *Nova Scotia Magazine*.

⁵² William Prince to Oliver Smith, April 14, 1794, Box 2, Folder 11, MSPA, MHS.

perceived recordkeeping as an unnecessary burden, relatively few farmers documented their daily work thoroughly if at all.⁵³ Therefore, in the eighteenth century, the mere acts of reading and writing about agriculture—possibly more than any other aspect of improvement culture—distinguished improvers from other northern American farmers. In response to cynics, improvers frequently justified their activities as a public service for recording contemporary farmers' practices for posterity which, if left unwritten, would otherwise "die with them." Samuel Deane regretted that, "for want of such records a great deal of useful knowledge has already been lost."⁵⁴

The northern Americans most likely to keep diaries and account books were deacons, ministers, lawyers, and merchants—that is, the more prominent members of northern communities with primary occupations not agricultural. Most of them had attended college, could afford to hire farmhands or purchase slaves, and therefore had the leisure to write about their activities. To reconstruct early agricultural work, historians have relied on such 'farmer's diaries' as that of Ebenezer Parkman, a Harvard-educated minister in the eastern Massachusetts town of Westborough, who kept diaries intermittently between 1749 and 1782, recording the management and harvests of his gardens, hayfields, and orchards.⁵⁵ But Parkman spent most of his time ministering to

⁵³ Howard S. Russell, *A Long, Deep Furrow: Three Centuries of Farming in New England* (Hanover: University Press of New England, 1982), 118-119. On literacy in colonial New England, see E. Jennifer Monaghan, *Learning to Read and Write in Colonial America* (Amherst: University of Massachusetts Press, 2005), esp. chapters 1-4. Widespread literacy in New England was accompanied by innumeracy. See Patricia Cline Cohen, *A Calculating People: The Spread of Numeracy in Early America* (New York: Routledge, 1999 [1982]), 118-121.

⁵⁴ Deane, *The New-England Farmer*, 86.

⁵⁵ This is true for the majority of pre-Revolutionary farmers' diaries archived at the MHS. See, for example, the farmers surveyed in Robert A. Gross, *The Minutemen and Their World* (New York: Hill and Wang, 1976). Many New England diarists, like the

local congregations and corresponded frequently with clergymen and friends in Britain and throughout the region, including other diarists like Dr. Aaron Wight, Quincy Thaxter, Phineas Whitney, Samuel Chandler, and Jonas Clark.

These men were certainly not the richest in New England, but neither did they represent the majority. If Parkman was a farmer of low or even middling means, he could not have afforded to keep his stock of drinking chocolate; likewise the watches and clocks that Wight collected.⁵⁶ The entries in their journals were elliptical but sufficiently detailed to show that they engaged in many of the activities that agricultural improvers recommended, including crop rotation, grafting, recording daily weather conditions, fertilizing with seaweed or aged manure, and selling produce and meat at the market. In April 1749, for example, Parkman wrote that the day was “very warm and springlike. Eb’r grafting cyons from Cornet Bright of Watertown. Dan’l ploughing Stubble ground.”⁵⁷ Thaxter was probably the least educated of the other farmers with whom he associated—unlike his older brothers he did not attend Harvard. But according to his journal, Thaxter’s mixed husbandry farm on the south shore of Boston involved an impressive variety of livestock as well as grains, vegetables, and fruits and he regularly checked his orchards for parasites. In early spring of 1774, he and his father “sowed 3 of beats 3 of onions 2 of carets ... kilded Caterpillars in the young otchard up in the lot Sot

Lexington, Massachusetts minister Jonas Clark recorded his farm work in the blank pages of Nathaniel Ames’s almanacs.

⁵⁶ June 18, 1749, Ebenezer Parkman Papers, 1718-1789, Ms. N-662, MHS; Wight drew over six new timepieces in his diary between 1769-1773, Aaron Wight Diaries, 1769-1826, Ms. N-466, MHS; on the distribution of luxury commodities like clocks and chocolate, see Main and Main, “Economic Growth and the Standard of Living in Southern New England,” *JEH*.

⁵⁷ April 10, 1749, Ebenezer Parkman Papers, 1718-1789, Ms. N-662, MHS;

out trees in the upper garding”; the next day they “Carted dung ... Drove the team planted squashes behind the house.”⁵⁸

Such diaries are also unusual compared to other personal records from the colonial period in being relatively systematic: even those who did not write in the blank pages of an almanac or farmer’s calendar, kept track of the month, day, year, and sometimes, time of day and added remarks on their agricultural practice on a fairly regular basis. By contrast, there are the scattered scraps of papers with undated, nearly indecipherable scribbles created by farmers for some more immediate purpose than the chance to review a summer or lifetime’s worth of work habits, or for posterity. Even Thaxter, who began a journal at the age of twelve, was closer to an improver than the majority of farmers in the region whose writings either did not survive, or never existed at all. (This absence of sources makes it difficult to say whether illiterate or non-anglophone farmers, like the Acadians—about whose ‘resistance’ we know only or mostly through improvers’ words—were anti-modernists and understood improvers’ agenda as an unnecessary imposition, or if they accepted some new techniques and not others.)

⁵⁸ March 26-27, 1774, Quincy Thaxter Journal, 1774-78, Thaxter Family Papers, 1774-1791, Ms. N-1655, MHS.

Translation

The ministers who kept diaries were likely the sort of farmer that northern agricultural societies had in mind when they complained that locals were insufficiently engaged in the culture of improvement. While such landowning colonists were improvers in the broader sense of the term, the paratactic style of their diaries was not equivalent to the more writerly forms of improvement literature. Part of the mission of agricultural societies like the MSPA was to collect agricultural knowledge that was “scattered throughout the State.” The society, in turn, would act as “a medium, or organ of communication, ” and therefore encouraged contributions of various kinds and qualities. The MSPA assured readers of its published bylaws that they would not expose writers to “the sneers of the weak and uncandid” since the “Trustees have frequently been highly gratified by the strong sound remarks on various subjects, by men who have never visited any literary seminary.” They further pledged that “every correspondent has a right to withhold his name” and therefore “earnestly request[ed] all persons to communicate freely,” even those who felt that “they may not have had such an education as may enable them to write in a polished style.”⁵⁹ The Connecticut Society for Promoting Agriculture wanted to “facilitate communication,” instead by encouraging farmers to present oral reports at Society meetings. They “thought best to invite the members to state *orally*, whatever facts or observations were deemed of sufficient importance to demand the notice of the Society.” This strategy seemed to work:

⁵⁹ *Laws and Regulations of the Massachusetts Society for Promoting Agriculture: With Extracts of Foreign and Domestic Publications* (Boston: Thomas Andrews, 1793), iv; *Rules and Regulations of the Massachusetts Society for Promoting Agriculture* (Boston: Fleet, 1796), 4-5.

The consequence, which was foreseen, clearly flowed, that many members, who from want of habit, or want of confidence, would have avoided the use of a pen, have been free to enrich the Society by their oral communications.⁶⁰

But despite such successes, improvers continued to worry that their publicity was ineffectual because farmers scoffed at any attempts to change customary practices, suggesting that these incentives were likely also a kind of rhetorical gesture to encourage sympathy among elites, rather than a straightforward appeal to common farmers. The MSPA, for example, made clear that their mission was in the hands of genteel, not ordinary, farmers: “Unless gentlemen in the country will exert themselves to make experiments, or suggests hints,” and communicate these to members of the Society, “the Trustees [were] conscious they can do but little good, notwithstanding their solicitude to be useful.”⁶¹

Improvers’ rhetoric was a combination of sophistry and homily—usually more ceremonial, literary, and didactic than technical. Their agricultural advice used biblical and classical references to reinforce the authority of properly-educated, white, well-born men. Like other enlightenment intellectuals interested in classicism, improvers cited ancient Greek and Roman figures’ discourses on agriculture and its virtues, and channeled their authority by signing public communications with classical pseudonyms like Agricola.⁶² The NSSPA expressed “their warmest acknowledgements to Columella,

⁶⁰ *Transactions of the Society for Promoting Agriculture in the State of Connecticut* (New Haven: William W. Morse, 1802), 3.

⁶¹ *Rules and Regulations of the Massachusetts Society for Promoting Agriculture* (Boston: Fleet, 1796), 4.

⁶² Gordon Wood discusses Enlightenment classicism in revolutionary America, or what he calls “the republicanization of monarchy” in *The Radicalism of the American*

for the many judicious remarks contained in his letter of the 1st of March,” and promised to publish them in their proceedings.⁶³

Some British improvers discouraged the practice. Arthur Young criticized Stephen Hales and his publication, *The Museum Rusticum* for the failure to identify its sources for agricultural and botanical information. The periodical “had as long a duration as it merited,” wrote Young, and although “it was successively imitated in other papers, under the titles *De Re Rustica* and *Foreign Essays*,” because these texts were also “anonymous, they dropped into obscurity almost as soon as they started for public favour.” In his own publication, Young stipulated that he would reject any “communications without the names and places of abode of the author.”⁶⁴

In American publications the use of pseudonyms was generally acceptable. Gentlemen who wrote about plow drills, livestock feed, and fertilizing with manure might have assumed classical signatures to establish the pedigree of their advice or to embellish the mundane subjects of their prose. But it also seems that genteel Americans thought anonymity would encourage more people to contribute to the project of agricultural improvement. As the NSSPA proclaimed in a solicitation printed in a Halifax newspaper:

All letters approved by the Society and designed for Publication, the secretary will, whenever requested, transcribe them for the Press without discovering the Writer’s Name, which, it is hoped, will remove every discouragement to a free and full communication of such matters as are comprised within the Society’s Plan.⁶⁵

Revolution. See also Dorothy C. Broaddus, *Genteel Rhetoric: Writing High Culture in Nineteenth Century Boston* (Columbia: University of South Carolina Press, 1999).

⁶³ April 1790, *Nova Scotia Magazine and Comprehensive Review of Literature, Politics, and News* (Halifax: John Howe).

⁶⁴ *Annals of Agriculture and Other Useful Arts* 1: 1 (London: H. Goldney, 1784).

⁶⁵ December 22, 1789, *The Royal Gazette and the Nova-Scotia Advertiser*.

Whether or not anonymity was requested, nearly all the advice published by the NSSPA was tagged either with the name of a Roman poet or hero or simply with the epithet ‘A Farmer.’ The latter did not necessarily indicate that a contributor was more countrified than those who became *Agricolas*, *Columellas*, and *Virgils* in the pages of agricultural publications. ‘Farmer’ was an autograph typically used by republicans in both the revolutions of 1688 and 1775, to personify the politics of citizen patriots. Philadelphia lawyer John Dickinson’s political tracts were titled “Letters from a Farmer” (1768), for example, to evoke majority opinion. Similarly, the adoption of a rustic identity enabled gentlemen to certify the authenticity of their farming advice, as when William Peck assumed the name *Ruricola* for his prize-winning article, “The Natural History of the Slug Worm,” and members of Benjamin Vaughan’s family signed communications to agricultural societies: “A Practical Farmer” or “A member of the Kennebec Agricultural Society.”⁶⁶

The appeal to both the epic and the republican strands of classicism was just one expression of genteel improvers’ ambiguous public identities. A more basic example of their dualism was implicit in the article, “Two Vulgar Errors Respecting the Sowing of Grass Seeds Pointed Out,” printed in the *Museum Rusticum* and reprinted in 1764 in the *Halifax Gazette*. The author blamed the ‘vulgar errors’—winter seeding and a prohibition on mixing grass and grain seeds—not on the practices of “the country people” but on the advice “of the writers on husbandry” (though the author was himself

⁶⁶ WDP to Jonathan Mason, August 1789, MSPA, MHS; Carton 22: SH 116Y1, Folder: Miscellaneous Agricultural Papers, Vaughan Family Papers, Correspondence, 1773-1812, MHS.

presumably one of the latter).⁶⁷ Such contradictions were inherent to the rhetoric of improvement and help explain why Samuel Deane would market his *The New England Farmer, or Georgical Dictionary*, to paying subscribers as a work written “for the direction of the common people.” He defended its alphabetical organization as a dictionary, which he had originally intended to present “analytically,” but “when he considered that what he is doing is not principally for the instruction of critical scholars ... it appears that the want of a systematical arrangement is a matter of no great consequence.”⁶⁸ Improvers could fashion themselves patricians or plebes, at their own discretion.

Thus, even those who courted a broad audience, such as almanac writers or agricultural societies who solicited public support by offering grants and prizes simultaneously signaled that they were distinct from and generally above the common sorts of farmers. Whether or not ordinary farmers adopted agricultural improvement in practice, improvers excluded social inferiors from their intellectual world in principal.

Most commonly, improvers indicated their superiority by emphasizing the need to translate farmers’ practices or advice into a style appropriate to the discourse of improvement. While Deane credited ordinary farmers for much of the advice in his dictionary, he explained that he had to elaborate significantly on their information since they were “apt to misrepresent them, when they attempt to relate them.”⁶⁹ The CSPA reassured its members that “whatever was delivered” to them by common people would first “under[go] a careful revisal” before it was “committed to writing” and approved for

⁶⁷ December 13, 1764, *Halifax Gazette*, 1.

⁶⁸ Deane, *The New-England Farmer*, 5.

⁶⁹ Deane, *The New-England Farmer*, 86.

the Society's publications.⁷⁰ Members of the Kennebec Agricultural Society offered live demonstrations to "prove to the farmer by ocular demonstration the benefit to arise" from various soil amendments, since farmers seemed less engaged by written experiments.⁷¹ Jared Eliot felt that he should translate European improvers' "Terms of Art" into a "plain Stile" for "the generality of New England Readers."⁷² Agricultural societies believed their subscribing members were best suited to filter the useful information they received and repackage it for wide consumption. Arthur Young implied that common farmers were not the intended audience for his *Annals of Agriculture* when he blamed its commercial failure on the "culpable inattention in country gentlemen, in clergy who farm, and in opulent tenantry."⁷³ Such were the people most likely to support his literary career, crucially, in the form of paid subscription for his agricultural publications.

⁷⁰ *Transactions of the Society for Promoting Agriculture in the State of Connecticut* (New Haven: William W. Morse, 1802), 3.

⁷¹ [Draft] Wm. Vaughan, Hallowell to Mr. Bordley, October 1801, Folder: Correspondence, September-October, 1801, Carton 1, VFP, MHS.

⁷² *Rules and Regulations of the Massachusetts Society for Promoting Agriculture* (Boston: Fleet, 1796), 3; *Letters and Papers on Agriculture: Extracted from the Correspondence of a Society Instituted at Halifax for Promoting Agriculture in the Province of Nova Scotia ...* vol. 1 (Halifax: John Howe, 1789), 5-6; "Preface," in Jared Eliot, *Essays Upon Field Husbandry in New England and other Papers, 1748-1762*, ed. Harry Carman, Rexford Tugwell, and Rodney True (New York: Columbia University Press, 1934), 3-4.

⁷³ G. E. Mingay, ed. *Arthur Young and His Times* (New York: Macmillan, 1975), quote on 18.

The best characters

While the act of improvement was claimed by all who sought landownership, self-described improving farmers made larger claims to social and cultural authority, unequivocally differentiating themselves from tenants and less ambitious proprietors. Improvers were typically aristocratic or gentry landowners, intellectuals, and politicians—successful men (and their families), who crowned their achievements by engaging in agricultural experiments during lulls or at the end of their careers. The merchant Charles Ramage Prescott moved from the Atlantic port of Liverpool, Nova Scotia to the peninsula's more fertile western coast to begin a substantial horticultural plantation in the late eighteenth century. Henry Knox (whose marriage and military service hoisted him from bookshop apprentice to large proprietor and first U.S. Secretary of War), devoted his retirement to cultivating the two hundred acres surrounding his eastern Maine mansion Montpelier.⁷⁴ For Knox as for many leading North Americans, genteel farming perfectly combined all the enviable marks of privilege and a life of luxury with a veneer of rustic respectability. As the improvers who formed an agricultural society in Newport, Rhode Island, put it:

Wealth has, in this country, some peculiar attractions: Besides the pleasures it is supposed to bring, it confers a species of nobility. Wealth and a fair character, make an American title.⁷⁵

⁷⁴ Prescott Family Papers, Kings County, 1783-1864, NSARM (with permission of Nova Scotia Museum). Carolyn S. Parsons describes Knox's Thomaston, Maine estate in, "Bordering on Magnificence: Urban Domestic Planning in the Maine Woods," in Charles Clark, et al., eds. *Maine in the Early Republic: From Revolution to Statehood* (Hanover, NH: University Press of New England, 1988), 62-82.

⁷⁵ Asher Robbins, *An Address to the Society for the Promotion of Agriculture and other Useful Arts in the state of Rhode-Island and Providence Plantations ...* (Newport, RI: 1802).

To confirm his American title, thirty-six year-old Boston marine insurance magnate Peter Chardon Brooks “conceiv[ed] it a duty, after a long course of industry & tolerable success, to avail ourselves of every innocent and rational enjoyment in our power.” Anxious that he was in “more danger of ... having too much than too little,” and judging that he was “worth money enough” to turn increasing attention to agricultural improvement, in the summer of 1803 he devoted himself full-time to running his Medford farm.⁷⁶

A wealthy farmer like Brooks was distinguished by his seniority and his clean hands—two classic markers of privilege. The son of noted Massachusetts botanist and AAAS member Manasseh Cutler grumbled to his father that it was “difficult for him to appear with decency, much more shine in the polite circles of society,” since “sufficient and profitable help” were beyond his means as a small farmer. Father scolded son for envying “those who ... only observe their dress, their punctilios of manners, and style in conversation,” whose superiority was likely “not in improved knowledge, but in external manners.” Manasseh Cutler was “not, however, opposed to the refinements of society.” Rather, he believed in attaining and displaying polish through agricultural improvements. He instructed his son to get to work threshing grain, wheeling manure, and hauling rocks, and to “associate with good company” in the evenings. Eventually, he too would be able to expand his property and hire workers and enjoy the leisure of a gentleman farmer so that the common people of his neighborhood would “be sensible that you are placed in

⁷⁶ June 1, 1803; June 19, 1805, Peter Chardon Brooks Papers, 1789-1886, Ms N-2049, MHS.

that grade of society which is above their level, which they are to look up to with respect.”⁷⁷

Scientific agriculture: experience and expertise

Improvement was a complex and contradictory discourse about modernization and the terms of achieving it within the environmental, economic, and political constraints of the region. Northern improvers were forward-looking and embraced change, yet their social vision was conservative. The key distinctions of genteel farmers in America was their access to networks of improvement, as well as the forms in which they expressed their membership. Since long-distance correspondence networks formed the main structures of agricultural improvement in the seventeenth through early nineteenth centuries, many improvers never met each other in person. Especially because social rank was not formalized among creoles in British North America and social distinctions were less pronounced in New England and Nova Scotia compared to the slave societies of the South and West Indies, or the more rapidly expanding colonial metropolises of eighteenth-century Philadelphia and New York, northern American elites found other ways to mark their standing in the regional and trans-Atlantic hierarchy.⁷⁸

⁷⁷ August 16, 1778, Cutler and Cutler, eds., *Life, Journals, and Correspondence of Reverend Manasseh Cutler*, v. 1: 68-69.

⁷⁸ Gloria L. Main and Jackson T. Main, “Economic Growth and the Standard of Living in Southern New England, 1640-1774,” *The Journal of Economic History* 48: 1 (March 1988): 27-46. For a sociological comparison of early American regions, see Jack Greene,

Improvers did so by discussing farming—the most typical activity of settlers in British North America—in the elevated terms of natural history. Ordinary farmers employed the more generic or capacious concept of improvement to indicate repairs, a good harvest, the purchase of land or in the most general sense to mean that something made materially better or more pleasing. If nearly all early Americans espoused the notion of land improvement, only those farmers who self-consciously called themselves improvers embraced this elaboration on what it meant to successfully, correctly develop real estate through science. By assuming the rhetorical conventions characteristic of early modern polite—particularly scientific—communications, northern American improvers established themselves as identifiable, creditable members of a far-flung community of self-appointed experts and thereby symbolically distanced themselves from neighboring settlers. As an editorialist in a Nova Scotia newspaper, who claimed to be “one of the few Farmers who have joined theory and Reading,” put it:

Agriculture is a Science or Art; like other Arts, it is reducible to certain principles and should be regulated by them. A knowledge of those disciplines is to be acquired by observation and Experiments; and these, joined to Practice, must unite ... to teach the Principles of Agriculture systematically and considered as a Science.⁷⁹

When John Lowell distributed an MSPA questionnaire to ministers, he parroted the skepticism the society had faced in previous attempts to broadcast this mission among ministers:

But who are these Trustees? And why do they pretend to be the instructors of the Farmers of our Country? Are they not a number of

Pursuits of Happiness: The Social Development of Early Modern British Colonies and the Formation of American Culture (Chapel Hill: University of North Carolina Press, 1988).

⁷⁹ “Columella,” *The Royal Gazette and the Nova-Scotia Advertiser*, November 25, 1789.

gentlemen, who live in or near the Metropolis, and who have little knowledge of the subject, except some theoretical notions derived from books?⁸⁰

Agricultural improvers saw themselves as the avant-garde of eighteenth-century rural life, impatient with complacent habits and attitudes. They were the unique messengers of enlightened ideas to northern American farmers and were distinct from them because they were “not practical farmers,” but “men of enlarged and philosophic minds, who zealously exerted themselves for the improvement of Agriculture ... [by] appl[ying] the principles of Science.”⁸¹ The British improver William Marshall, who aimed to “unite theory and practice on a large scale,” in scientific agriculture academies, acknowledged: “It is true, an illiterate rustic, who never entered a college of agriculture, can *farm*: and so he can *converse*.” But he maintained that “professional men,” were superior because like the “scientific navigator compared to the fisherman,” an educated farmer could apply his knowledge “round the world, with confidence and moral certainty; though he has no other pilot than science to direct him.”⁸² Hoping to change the way Harvard students perceived the natural world, Benjamin Waterhouse told them that while “the most uninstructed peasant cannot view a flowry meadow, or a fertile grove without a sensation of joy which he could not elsewhere feel,” but because peasants were “ignorant and inattentive,” there were many more aspects of nature which were lost to them. When

⁸⁰ John Lowell, January 1800, Box 10, MSPA, MHS.

⁸¹ *Rules and Regulations of the Massachusetts Society for Promoting Agriculture* (Boston: Thomas Fleet, 1796), 2.

⁸² William Marshall, *Proposals for a Rural Institute* (London, 1799).

students completed his course on natural history, they would be able to see “these objects with an eye enlightened by science.”⁸³

Enlightened farmers exemplified the increasingly quantitative and managerial approach to the natural world. They understood and promoted the reciprocal benefits of science and business, especially the complementary pursuits of natural historians and commercial farmers. Waterhouse reiterated throughout his lectures on botany, “natural history is the very basis of agriculture ... and every student of nature knows the dependence of agriculture on a correct natural history.”⁸⁴ The Bath and West Society—one of the most influential agricultural societies in England—asserted that “whatever deficiencies” commercial agriculture still exhibited, it would be further improved by its “close connection with other branches of science—that learning & experiments go hand-in-hand.”⁸⁵ Likewise, the Newport merchants who constituted the agricultural society in Rhode Island wanted to promote agricultural research to “aid the progress of science itself,” while the commercially-oriented NSSPA “zealously” united “science with experiment and practice, for the improvement of Agriculture.”⁸⁶

Improvers were not only codifiers of common farming practices gathered from around the region, they were the most qualified testifiers to the superiority of their own

⁸³ ‘Lectures on Botany’ HUG 1677 53, Papers of Benjamin Waterhouse, 1797-1829, Countway Library (hereafter BWP).

⁸⁴ Waterhouse, “Lecture: Introductory on Natural History, October 12, 1810,” Folder c. 16.4, BWP. Waterhouse had recited this principle since the 1780s.

⁸⁵ *Letters and Papers on Agriculture, Planting, &c.: Selected from the Correspondence of the Bath and West of England Society for the Encouragement of Agriculture, Manufactures, Arts, and Commerce*, v. 6 (Bath: R. Cruttwell, 1780), 31.

⁸⁶ Asher Robbins, *An Address to the Society for the Promotion of Agriculture and other Useful Arts in the State of Rhode-Island...* (Newport: 1802); *Letters and Papers on Agriculture: Extracted from the Correspondence of a Society Instituted at Halifax for Promoting Agriculture in the Province of Nova Scotia*, vol. 1 (Halifax: John Howe, 1789), 5.

practices (especially as they applied to the local environment). Only a specific kind of experience of place really counted as scientific knowledge: the experience of gentlemen who were connected to the global community of science and conversant with its literature. Even if improvers derived their hypotheses or carried out their experiments in cooperation with laboring farmers, only they could (or did) translate this work into the proper rhetoric for consumption by like-minded cosmopolitans.⁸⁷ So, when the great proprietors who made up the NSSPA implored their fellow “gentlemen of ... leisure ... [to] condescend to instruct the peasantry, by communicating the result of their own experience,” they appropriated the physical labor of others as a basis for their own expertise while simultaneously asserting that leisure was a dispensation of their rank.⁸⁸

Above all, improvers valued standardization, efficiency, and the accumulation of authoritative theoretical knowledge derived from experimental trials.⁸⁹ Nature’s “wonderful and secret operations are so involved and intricate,” Cutler declared, that “the only solid foundation for advances in the real knowledge of nature ... must be by a regular series of experiments.”⁹⁰ Such empirical claims to truth and ‘real knowledge’ were another standard rhetorical device of early modern writers, including those, like

⁸⁷ On the process of naturalizing the scientific authority of gentlemen observers, see Simon Schaffer, “The Earth’s Fertility as a Social Fact in Early Modern England,” in Mikulas Teich, Roy Porter, and Bo Gustafsson, eds. *Nature and Society in Historical Context* (New York: Cambridge University Press, 1997), 131; and Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life* (Princeton: Princeton University Press, 1985).

⁸⁸ [John Howe], [Preface to the first issue], *Nova Scotia Magazine* (July 1789), vii-viii; Columella, “To the Secretary of the Agricultural Society at Halifax,” *Nova Scotia Magazine* (May 1790).

⁸⁹ Sarah Wilmot, *The Business of Improvement: Agriculture and Scientific Culture in Britain, c. 1770-1870* (Bristol: Historical Geography Research Series, no. 24, 1990).

⁹⁰ June 20, 1780, MC to Samuel Williams, in Cutler and Cutler, *Life, Journals and Correspondence*, 82.

Daniel Defoe, whose realistic narratives played with the conventions and assumed the authoritative, documentary voice of factual accounts.⁹¹ Scientific farmers argued that that the experience or empirical knowledge they possessed was more profound than ordinary farmers—both deployed a common understanding of regional conditions, but improvers possessed additional, higher, more rigorous, more credible forms of expertise. Although Jared Eliot asserted that “an ounce of experience is better than a pound of science,” in his writings he specifically invoked the experience of persons “of good credit,” “credibility,” or his own experience, implying that improvers assumed a distinct social identity.⁹²

Consequently, some improvers merely paid lip-service to this requirement of improved farming. Samuel Deane presumed this more lenient attitude towards agricultural expertise when he asserted that “none ought to conclude from their having the longest experience, that they have the greatest degree of knowledge: For some will learn more by experience in one year than others will in forty.”⁹³ Deane had “always had a high relish for natural philosophy, and particularly for this most profitable and important branch of it.” He had been an avid reader of improvement literature who “employed many of his vacant hours in perusing what has been published by the best writers.” Even though he confessed he had “never had sufficient leisure to attend very closely to the study of agriculture,” he had some experience in managing livestock and felt he could author a comprehensive farmers’ dictionary without fear of “grossly

⁹¹ On the ambiguous authority of early American travelers’ descriptions of Indian societies, see Gordon M. Sayre, *Les Sauvages Américains: Representations of Native Americans in French and English Colonial Literature* (Chapel Hill: University of North Carolina Press, 1997).

⁹² Eliot, *Essays Upon Field Husbandry in New England*, quote on 15.

⁹³ Deane, *The New-England Farmer*, 84-85.

misleading any of the most ignorant of his readers.” Just in case, he explained that the information in his dictionary was gathered from a variety of sources.

Many things are written from his own experience, and from what that of others in this country, on whose veracity he can rely. Things which are not certainly known are mentioned only as opinion or conjecture. Extracts are made from some of the best authors and marked. He has not willfully asserted anything on the publick as his own, which has been published by others.⁹⁴

Despite the insistence of scientific men that agriculture and natural history were above all empirical sciences and that theorists gained credibility from field experience, most knew the plant world as superintendents rather than stoop laborers. Manasseh Cutler employed his sons and other workers like Jess, the black man he hired as the gardener on his Hamilton, Massachusetts farm. He wrote to his daughter in obvious admiration of a visit to a fine private botanical garden in Philadelphia. Most impressive was when the host “loaded” a table full of botanical books and printed illustrations. When their conversation “turned to rare plants, one of the gardeners would be called, and sent with lanterns to the green-house to fetch me a specimen to compare with it. This was done perhaps twenty times.”⁹⁵

The perspiration and muck of working with earth and animals were best left to other family members or slaves, servants, and laborers. Hiring workers was a particularly rare privilege in the North, where labor was expensive and small farmers continued well into the nineteenth century to rely mostly on kin and hired day laborers in only the busiest

⁹⁴ Deane, *The New-England Farmer*, [preface].

⁹⁵ Manasseh Cutler [to his son in Ipswich], January 21, 1803; MC to Mrs. Torrey, November 22, 1803; [MC diary entry], February 28, 1803, in William Cutler and Julia Cutler, eds. *Life, Journals, and Correspondence of Reverend Manasseh Cutler, LLD, By His Grandchildren* 2 vols. (Cincinnati: Robert Clarke & Co., 1888), v. 2: 124-129, 144-6, 155.

seasons. In private journals or in communications with each other gentlemen improvers elided the distinction between experimental ideas and their execution, noting how they had sowed, pruned, harvested, and preserved in one entry and in another reminding themselves to pay laborers and gardeners (virtually invisible was the work of New England and Nova Scotian wives and daughters who assumed a large share of both domestic and field chores). Brooks tended to account for work done on his suburban Boston estate using the inclusive terms “I” or “we,” though it is clear from other entries that most if not all of these improvements were effected by others than himself. Such appropriation befitted a man who described his wealth as so “monstrous” that he “presume[d] that *no one in the United States* ha[d] exceeded” him.⁹⁶

To English improvers touring the northern parts of America, a prettified agrarian landscape was a polite display of economic ascendance or political power.⁹⁷ The aesthetic principles of picturesque gardens and the plants, animals, and field divisions characteristic of improved agrarian landscapes offered a visual rhetoric of progress. As Martha Russell, the daughter of a livestock breeder noted soon after she arrived from England in 1795, “the breed of cattle,” in southern Connecticut “indicates a degree of spirit and ambition among them. In short, here you feel to be not only in the world but in a most delightful part of it.”⁹⁸

⁹⁶ On gentlewomen farmers in early New England, see Laurel Thatcher Ulrich, *Good Wives: Image and Reality in the Lives of Women in Northern New England* (New York: Vintage, 1991 [1982]), 69-73. [WASTEBOOKS, add footnote] Peter Chardon Brooks Papers, Ms N-2049, MHS.

⁹⁷ William H. A. Williams, *Tourism, Landscape, and the Irish Character: British Travel Writers in Pre-Famine Ireland* (Madison: University of Wisconsin Press, 2008), 137-138.

⁹⁸ S.H. Jeyes, *The Russells of Birmingham in the French Revolution and in America, 1791-1814* (London: George Allen, 1911), quote on 174-175.

By claiming to use scientific methods to transform landscapes, gentlemen and ladies established their superior abilities and moral qualities as improving landlords.⁹⁹ Because agricultural improvement was identified with the noble pursuit of scientific knowledge and called for the direction of personal wealth into intellectually edifying and charitable activities, engagement with improvement could enhance the reputation of individuals. Atlantic merchants in the slave trade and plantation masters redeemed themselves in their role as gentlemen farmers because they regarded agriculture as “one of the few truly virtuous sectors of the Georgian economy.” As David Hancock has argued, British gentlemen farmers decorated their country homes in the south of England with paintings of idyllic rural scenes which formed a visual “language of social legitimation.”¹⁰⁰

Advertising one’s interest in natural history and improvement was one of the many new strategies that eighteenth-century elites tried to encourage a culture of deference and to demand respect from social inferiors.¹⁰¹ As in other cases, when improvers drew attention to their botanical gardens or expertly-landscaped properties, their intended audience was primarily other gentlemen and ladies. If improvers’ claims to scientific authority and ordinary farmers’ indifference to them were a proxy for the tensions between people of different means, to speak about one’s improved garden or

⁹⁹ Wilmot, *The Business of Improvement*, 44-45.

¹⁰⁰ Hancock, *Citizens of the World*, 369.

¹⁰¹ As I discuss in Chapter 5 “Planting Improvement,” such strategies were often frustrated, and not just in the context of the early United States, where republican ideology empowered middling and poorer sorts with a language for resistance. On the rhetoric of republicanism in land disputes between improvers like the Vaughans and squatters in post-Revolutionary Maine, see Alan Taylor, *Liberty Men and Great Proprietors: The Revolutionary Settlement on the Maine Frontier, 1760-1820* (Chapel Hill: University of North Carolina Press, 1990).

scientific trials was to suggest efficacy, wisdom, and privilege in a way that was at least acceptable to early modern genteel sensibilities. In the early nineteenth century a former president of the MSPA urged “well informed & opulent individuals” to continue to promote “the important science of agriculture,” adding, “for I think it may be honoured with ye name of science.” If their scientific pretensions failed to give them credibility among the general population, at least other scientific improvers would understand their worth.¹⁰²

The rhetoric of empiricist natural history entered agricultural discourse among improvers who belonged, or hoped to prove that they rightly belonged, to bigger, more dispersed communities, particularly to the patronage networks of the enlightened Atlantic and the British Empire. By discussing agriculture as a progressive, scientific practice, they entered into and helped to forge a community of like-minded people across geographical distances, an international community of landlords and intellectuals bound by their common interests in perfecting the practice of settler colonization.¹⁰³

Small but scientific

Improvers optimistically believed that modern recipes for increasing yields, efficiency, and profitability were universally practicable and desirable. Scientific

¹⁰² John Lowell to Society, June 7, 1813, Box 19, MSPAP; John Lowell, “Circular letter,” January 29, 1816, Box 11, MSPA, MHS.

¹⁰³ Ranajit Guha, *A Rule of Property for Bengal: An Essay on the Idea of Permanent Settlement* (New Delhi: Orient Longman, 1982).

agriculture was an ambitious and far-reaching modernization program to effect radical landscape changes and improvers encouraged experimentalism, specialization, technical modernization, and unfettered economic development based on the consolidation of smallholdings. Agricultural production firmly yoked to commerce, lectured Benjamin Waterhouse in his course on natural history, was “the best cure for local prejudices.”¹⁰⁴

Improvers idealized large fields planted with a single cash crop, hedgerows or other permanent, rectilinear field divisions, and other standard features of eighteenth-century English enclosures and grand estates as the signifiers of economic growth. The perceived lack of these features epitomized the reverse process—localistic, conventional, undercapitalized farms and the people who inhabited them were thus ‘backward.’¹⁰⁵ Conflating economic status or ambitions with intellectual capability, improvers disparaged tenants and small or middling farmers—people with relatively modest means and aspirations—as inherent traditionalists.

Improvers hoping to modernize rural areas where large-scale enclosures and plantations were feasible were pointedly opposed to small farmers. The Board of Agriculture’s surveys of the British countryside documented the prevalence of smallholdings and common pastures, over-reliance on long-fallows, and outdated methods—evidence of mismanagement that Arthur Young, the Board’s secretary, considered practically criminal. Small farmers, Young exclaimed, were the “goths and

¹⁰⁴ Benjamin Waterhouse, *Heads of a Course of Lectures on Natural History* (Cambridge: Hilliard & Metcalf, 1810).

¹⁰⁵ On the dominance of this generic discourse in British travelers’ descriptions of eighteenth-century Ireland, see Williams, *Tourism, Landscape, and the Irish Character*.

vandals of the open fields.”¹⁰⁶ When a man identifying himself as a butcher in Grosvenor Market wrote to state his views on the “Evils of large Farms,” the Board only agreed that farm size was:

a subject on which opinions differ very materially, but as the Board wishes to hear both sides of the question, they have requested me to thank you for your letter.¹⁰⁷

The operative word ‘but’ implied the Board’s position on the subject.

The small farms of New England and British North America rarely impressed travelers visiting from Europe. La Rochefoucauld-Liancourt admired estates in Pennsylvania, New York, and Massachusetts with more than two hundred cultivated acres, and reproved landowners with large properties of which only a small fraction was in production. Of a “farmer and landholder of some eminence” near Belfast, Maine who planted only five of his eighty acres, Liancourt wrote: “It is not easy to see, how old Nicholson can have acquired the reputation of being a good farmer. To me he appears to differ from the rest, only in possessing a greater extent of ground at a smaller price, without, however, making, in any degree, a better use of what he has.”¹⁰⁸ Of agriculture in Quebec and Montreal, Liancourt declared it “as bad ... as it possibly can be.”

What is here called cultivated land is, even on the banks of the river neither more nor less than ground merely cleared in tracts of about forty or fifty acres, and enclosed with rough fences. In the midst of these tracts are small plots of cultivated ground sown with wheat, Indian corn, rye, pease, and clover; they very seldom take up the whole space enclosed.

¹⁰⁶ Young quoted in G. E. Mingay, *The Agricultural Revolution, 1650-1880* (London: Adam and Charles Black, 1977), 11-12.

¹⁰⁷ Board to Mr. John Clark, March 1, 1796, RASE-B.XIII.64, MERL.

¹⁰⁸ *Travels through the United States of North America*, v. 2: 120?.

Liancourt doubted that the British would “succeed in enlarging and improving agriculture” in this region of the empire.¹⁰⁹

When Martha Russell’s fiancée James Skey assessed the countryside in central Connecticut, he expressed the typical improvers’ view: “This State is divided into small farms, and the little farmer, in this as well as in any other State is a poor miserable being.” Since Skey thought that even a “proprietor of thirty, fifty, or even a hundred acres” in New England would never profit from the region’s “ungrateful soil,” he intended to return with Martha to Birmingham. Although Connecticut farmers “arrogantly assum[ed] ... that under heaven there is no such country as America,” the only reason “a man should cross the Atlantic,” he decided, was to appreciate that England was “infinitely more rich and bountiful than this continent.”¹¹⁰

Northern improvers on both sides of the Atlantic, perceiving regional challenges to the practicability of extensive agriculture, were notably less antagonistic to small-scale enterprise. A British civil engineer surveying the Atlantic coast of Nova Scotia admired the “many small Farms kept in great neatness,” as well as the streams that intersected and divided the properties “to complete the Landskip ... in a beautiful manner.”¹¹¹

Northern improvers understood that scientific agriculture offered standard methods that promised to integrate farmers into Atlantic and global commerce, but they also knew that the produce of northern commercial farms could not rival that of warmer-

¹⁰⁹ *Travels through the United States of North America*, v. 1: 556-558. On the rhetoric of British improvers in nineteenth-century Quebec, see Colin M. Coates, *The Metamorphoses of Landscape and Community in Early Quebec* (Montreal: McGill-Queen’s University Press, 2000).

¹¹⁰ S.H. Jeyes, *The Russells of Birmingham in the French Revolution and in America, 1791-1814* (London: George Allen, 1911), 174-5; 237-41.

¹¹¹ August 14, 1785, ‘Journal of a tour with General Campbell in July & August 1785,’ Lieutenant William Booth Papers, MG1 vol. 144, NSARM.

climate plantations. They generally agreed with Deane that “gentleman of large estates, who can bear some considerable loss without feeling it ... are the persons who should try new crops, or new ways of raising old crops,” but the large estates of northern Europe or North America were considerably smaller compared with estates in the English Midlands or, even more so, compared to the plantations in the East and West Indies or the American South.¹¹² In the latter “countries men choose to hold large farms,” wrote Deane, “but in places where labour is dear, as in this country, small farms are to be preferred.”¹¹³

By accommodating some of the fundamental aims of scientific agriculture to the necessarily smaller scale of operations in colder climates, northern naturalists-improvers tried not to undermine the sense in which improvement was a universal and universally applicable endeavor. In the Scottish Highlands, members of the Board of Annexed Estates pursued schemes for commercial mining and plantation agriculture by resettling tenant farmers on small crofts of one to two acres.¹¹⁴ The Russian tsar empowered naturalists and geographers to develop similar projects for resettling peasants and soldiers on small farms in the empire’s steppe frontiers from the Ukraine to the Caucasus.¹¹⁵ In Sweden, Linnaeus’s student Pehr Kalm traveled to other northern countries with a special interest in understanding the advantages of intensive agriculture on “the smallest pieces of land” which for some reason he considered to be a Chinese mode of farming.¹¹⁶

¹¹² Deane, *The New-England Farmer*, 85.

¹¹³ Deane, *The New-England Farmer*, 88.

¹¹⁴ Jonsson, *The Enlightenment in the Highlands*, 54-57.

¹¹⁵ Willard Sutherland, *Taming the Wild Field: Colonization and Empire on the Russian Steppe* (Ithaca: Cornell University Press, 2006), 43-53.

¹¹⁶ Kalm quoted in Lisbet Koerner, *Linnaeus: Nature and Nation* (Cambridge: Harvard University Press, 1999), 116.

Jared Eliot promoted improvement on small tracts in part as a way to forestall westward migration among frustrated farmers who wanted to “have more Room, thinking that they live too thick” in the more densely settled older colonies like Connecticut.¹¹⁷ At the turn of the eighteenth century, improvers restated this point, admitting that because “the State of Connecticut has a comparatively thick population and that its territory is divided into small plantations or farms,” they were that much more reliant on natural history for understanding how to enrich the soil they cultivate, and to extend its produce.”¹¹⁸ Even in areas of newer settlement, like late eighteenth-century Maine and Nova Scotia, improvers recommended enclosing property in small sections—Sarah Vaughan decided the family needed to partition its grazing land “into two, if not into three parts, as small pastures answer best for small stocks of cattle.”¹¹⁹

In a region of small farmers, genteel improvers further emphasized the scientific aspects of their operations. Nathaniel Ames praised the precision with which northern American winemakers grew their grapes. By his “own observation of the prosperous and flourishing state of some small vineyards of whose delicious Fruit I have had the pleasure of tasting,” he was sure that they could rival the traditional vineyards of France.¹²⁰ Improvers’ private exotic botanical collections and backyard experiments showed their affiliation with the global reach of natural historians and their commitment to scientific

¹¹⁷ Eliot, *Essays Upon Field Husbandry in New England*, 31. For a discussion of the demographic politics of nineteenth-century soil conservationists, see Steven Stoll, *Larding the Lean Earth: Soil and Society in Nineteenth-Century America* (New York: Hill and Wang, 2002).

¹¹⁸ *Transactions of the Society for Promoting Agriculture in the State of Connecticut* (New Haven: William W. Morse, 1802), 3.

¹¹⁹ Sarah Vaughan to Charles Vaughan, September 1797, Carton 1, VFP, MHS; William Manning to Sarah Vaughan, February 1798, Carton 1, VFP, MHS.

¹²⁰ Nathaniel Ames, *An Astronomical Diary, or An Almanack ... Calculated for the Meridian of Boston in New-England* (Boston, 1774), [preface].

practice. In describing the scientific approach of their gardening and farming practices, northern improvers often emphasized the small scale of the best controlled experiments. Samuel Deane wrote that “those farmers in this country who have the fewest acres, commonly get the best living from their farms. It is doubtless, because their lands are under better cultivation.”¹²¹ This way of framing their improvement activities simultaneously confirmed their good methods and justified, at least to some extent, what outsiders perceived to be the modest scope of improved operations in the north (the topic of the following chapter).

Northern improvement—religious and secular

It is tempting to explain northern ruling elites’ disapproval of common farming practices as a secular version of Puritan jeremiads—in which anxiety over a crisis in faith was redirected from religious beliefs to political economy. Much as their predecessors had done, pious northerners of all social positions and Christian sects in the eighteenth century worried that the growing commercialization of colonial society confirmed their spiritual declension and interpreted trying natural events like earthquakes or especially harsh winters as signs of divine disapproval.¹²² Many early New England improvers were primarily educated for and worked in the ministry. Even those who became

¹²¹ Deane, *The New-England Farmer*, 138.

¹²² David D. Hall, *Worlds of Wonder, Days of Judgment: Popular Religious Belief in Early New England* (New York: Knopf, 1989), 72-80; Perry Miller, *The New England Mind: From Colony to Province* (Cambridge: Harvard University Press, 1953).

merchants or professionals learned the core religious curriculum that dominated the courses offered at Harvard, Yale, and other early American colleges. When improvers lamented that northerners were not maintaining respectable farms, perhaps they were relying on the rhetorical strategies of the pulpit.¹²³

The difficulty with this interpretation is, in part, that merchants in early North America had rarely conflicted with the church establishment—whether Congregational, New Light evangelical or, in New France, Catholic. Northern colonists had reconciled commerce with religious life from their earliest settlements. In the first decades of the seventeenth century, early investors in the Plymouth Company and the New England Company miscalculated the exoticism of northern North American nature. West Country merchants had hoped to establish an entrepot on the model of other profitable joint-stock ventures like the East India and Virginia Companies to compete with their London-based rivals in the Newfoundland fisheries. But they soon perceived that, outside the maritime fisheries, the region was “good for nothing but to starve so many people as comes to it.” Since the Puritan migrants who came to settle permanently in coastal New England in the late 1620-30s were also underwritten by English sponsors interested in a return on their investments, the fur and timber trades depended from the seventeenth-century on a culture in which piety and Atlantic commercial enterprise were compatible. This was a mentality which persisted through the eighteenth century despite growing economic

¹²³ For New England ministers as leading figures in the American enlightenment, see Richard Brown, *Knowledge is Power: The Diffusion of Information in Early America, 1700-1865* (New York: Oxford University Press, 1989), Chapter 3: “Rural Clergymen and the Communication Networks of Eighteenth-century New England”; Christopher Grasso, *A Speaking Aristocracy: Transforming Public Discourse in Eighteenth-century Connecticut* (Chapel Hill: University of North Carolina Press, 1999).

stratification.¹²⁴

The Catholic orders who managed New France also supported settlers who oriented the colonial economy to Atlantic commerce. Until recently, historians depicted Acadians as an unusually self-sufficient and localistic enclave within French America that rejected both long-distance trade and the authority of local clerics, who personified the distant power of Rome. As Leslie Choquette argues, “the fundamental modernity of these ‘Frenchmen’ was long obscured by a peasantist nostalgia that projected a mythical and idealized backwardness onto a group that was, in reality, in the vanguard of French Atlantic expansion.”¹²⁵ British officials in the early eighteenth century observed that Acadian fishermen were fiercely protective of French access to the northeastern port of Canseau (Canso) from foreign competition. Acadians were “Influenced and guided by the Government of Cape Breton” but also by “the missionary Priests residing amongst them by which they privately or Publicly obstruct every thing that may turn to the advantage of the British Trade or security of His Majesty’s Government here.”¹²⁶

Later in the century, Nova Scotia landlords found they could not rely on the help

¹²⁴ Bernard Bailyn, *The New England Merchants in the Seventeenth Century* (Cambridge: Harvard University Press, 1955), quote on 11; Stephen Innes calls this moral economy ‘moral capitalism,’ in *Creating the Commonwealth: The Economic Culture of Puritan New England* (1995); Christine Heyrman, *Commerce and Culture: The Maritime Communities of Coastal Massachusetts, 1690-1750* (New York: Norton, 1984).

¹²⁵ Leslie Choquette, *Frenchmen into Peasants: Modernity and Tradition in the Peopling of French Canada* (Cambridge: Harvard University Press, 1997), quote on 27, 287-90. See also N.E.S. Griffiths, *From Migrant to Acadian: A North American Border People, 1604-1755* (Ithaca: McGill-Queen’s University Press, 2005); and Alaric Faulkner, “Gentility on the Frontiers of Acadia, 1635-1674: An Archaeological Perspective,” in *New England/New France, 1600-1850* (Dublin Seminar for New England Folk Life Annual Proceedings 1989), 82-100.

¹²⁶ Council for Nova Scotia, Report to the King, September 27, 1720, Folder O, MG1, v. 1520, [copy of PRO CO 217/4, WA 53], NSARM.

of local Catholic priests in managing leases with Acadian tenant farmers. In 1800, Joseph DesBarres's daughter "got the Priest ... after mass to tell the tenants" that their rent was due. The Acadians "laugh'd at" her and refused to pay. She explained to her father that "the people were very ignorant," and they "thought they had as good a right to it as you or any other person."¹²⁷ In addition, although British agents and settlers were frequently anti-Catholic, there is little evidence that agricultural practices were implicated in this particular form of chauvinism. In Nova Scotia as elsewhere in the north, conflicts between elite and ordinary farmers expressed in improvement literature were fundamentally secular struggles over legitimate rights to and uses of land rather than specifically about church affiliation or the decline of religious belief.

While sectarian tensions in New England and Nova Scotia may have influenced agricultural science indirectly, Enlightenment debates about the relationship between religion and science sometimes informed outsiders' views of improvement and natural history in the north. Thomas Jefferson believed that the continued "religious and political tyranny" in the northern states made the entire region inhospitable to rational thought. When Benjamin Waterhouse despaired that his published lectures on botany and the "principles of vegetation" were neglected in New England, Thomas Jefferson commented to him:

That it's [sic] sale should have succeeded only South of Connecticut proves two things; one which I've long observed, that the scale of science cultivated in the east is more limited than that to the south, the clergy who are afraid of science everywhere, controlling it there.

¹²⁷ Amelia DesBarres to DB, August 18, 1802, Vol. 19-20: Lands—Correspondence, 1795-1812, DesBarres Papers

Jefferson quipped that these circumstances might “force you to fly south of Connecticut, where no truth is feared, science is honored, not reviled where you are.”¹²⁸ But improvers generally reconciled religious disagreements in their consensus on the utility of science. Even Italy, which was “not free or Protestant” had nonetheless been “enlightened by the rays of science” and become “the garden of the world.”¹²⁹

Waterhouse himself referred repeatedly to the inextricable relation between divine and natural order. The “study of nature,” he lectured students, “leads to palpable profit in such a young country as this, a country where agriculture gives man the only riches he can call his own.” But it also “moreover,”

gratifie[d] the pride of little mortals, to be able to create from a few seeds, a field of vegetables. This pleasure, it is probable, arises from a man’s appearing to himself to be a Creator, and to partake with the Supreme Being in the most eminent of his prerogatives ‘creation’ ... by being placed between Him and matter, w^c receives laws from His hands.¹³⁰

As Waterhouse knew, from Jared Eliot to Manasseh Cutler, many northern naturalist-improvers were ministers, who supported the expansion of public and private support for science. As a pastor of a church in Chelsea, Massachusetts told the state’s House of Representatives in 1778,

In matters of science, we have a most ample field open for improvement, to compleat the geography of our country; to improve in the arts of agriculture and manufacture, and of Physic, and other branches of science, are great objects that demand our special attention, and to obtain which, an

¹²⁸ Thomas Jefferson to BW, March 9, 1813; Thomas Jefferson to BW, October 13, 1815, BW-H MS c16.2.

¹²⁹ *Letters and Papers on Agriculture, Planting, &c.: Selected from the Correspondence of the Bath and West of England Society for the Encouragement of Agriculture, Manufactures, Arts, and Commerce*, v. 6 (Bath: R. Cruttwell, 1780).

¹³⁰ ‘Lecture: Prefatory to the lecture on mineralogy,’ Autumn 1796, BW-H MS c16.4, Box 1.

uninterrupted course of observation and experiment ought to be kept up.¹³¹

Jefferson's opinion of the region notwithstanding, the rhetoric of northern improvement could accommodate both scientific and religious authority.

Improving patriarchs

Clergymen's anxieties about broader social changes, specifically the decline of paternalism over the course of the eighteenth century, however, did seem to filter into improvement discourse among northern elites more generally. Since the earliest settlements in proprietary colonies like Massachusetts Bay, Plymouth, and Connecticut, patriarchal order structured families—the 'little commonwealths'—an order which ramified through the larger commonwealths of parishes, townships, and counties. The status of individual men within this gender hierarchy was determined by their position within the household and in the line of inheritance (most of which was held in land). Since wealth and influence were correlated, status—at least from this localistic perspective—was usually closely tied to age.¹³² Consequently, male elders dominated

¹³¹ Phillips Payson, *A Sermon Preached before the Honorable Council, and the Honorable House of Representatives, of the State of Massachusetts-Bay, in New England, at Boston, May 27, 1778* (1778), 37.

¹³² For discussions of the inconsistency of this broader inheritance pattern, see John Demos, *A Little Commonwealth: Family Life in Plymouth Colony* (New York: Oxford University Press, 2000 [1970]), 148-150; Daniel Vickers, *Farmers and Fishermen: Two Centuries of Work in Essex County, 1630-1850* (Chapel Hill: University of North Carolina Press, 1994), 244-245.

the powerful positions in churches and local government; in the older settlements, they came to be known as the Standing Order.

The Standing Orders had been the main arbiters of information from abroad into northern towns, but their dominant role as mediators between local and Atlantic communities diminished during the trans-Atlantic evangelical movements of the 1740s, known as the First Great Awakening. The Great Awakening in British America began in southwestern New England and substantially undermined the power of 'Old Light' Congregational ministers like Connecticut improver Jared Eliot.¹³³ In addition, during the 1780s, the number of Congregational ministers declined relative to the rapid expansion and movement of the settler population in New England and Nova Scotia. Especially in newer settlements in Vermont, New Hampshire, Maine and British North America, where landless sons surveyed and squatted properties furthest from state or provincial government and established churches, religious revivalism proved especially popular.¹³⁴

Halifax improver Titus Smith learned about the revivals in western Connecticut from his sister in Litchfield, who wrote in 1802 that,

throughout the northern states at present such a reformation (by them so called) going on as they say never was known in this country Before. its influence is felt strongly here—congregationals Baptists and methodists are amazing fiery on every side of us we are about the only family in the neighbourhood who are not engaged with them.¹³⁵

¹³³ Richard Bushman, *From Puritan to Yankee: Character and the Social Order in Connecticut, 1690-1765* (Cambridge: Harvard University Press, 1967), 178-80, 257-58.

¹³⁴ Alan Taylor, *Liberty Men and Great Proprietors: The Revolutionary Settlement on the Maine Frontier, 1760-1820* (Chapel Hill: University of North Carolina Press, 1990), 131-132.

¹³⁵ Rebekah Richardson to Titus Smith, January 23 1802, Miscellaneous correspondence, Titus Smith Papers, MG1 Vol. 1773, NSARM.

Ebenezer Parkman called these revivals a kind of “modern, present Excentricity,” as he wrote to Ezra Stiles to express his disdain for the “strangely wild” Moravians, Baptists, and “divers Jewish Rabbis” who appeared to him to be “infesting some of our parts of ye Country.”¹³⁶ From the middle to late eighteenth century northern rural clergymen like Parkman, Eliot, Samuel Deane, and other men in positions of formal authority increasingly deployed the censorious and prescriptive rhetoric of agricultural improvement in response to the erosion of deferential attitudes and their control over common people.¹³⁷

The most influential evangelical ‘New Light’ minister in early Nova Scotia was Connecticut-born Henry Aline, who had come to the province during the New England Planter migration of the mid-eighteenth century.¹³⁸ Aline’s revivals during the American Revolutionary war reinforced divergences between the earlier and later migrants from New England. The latter were conspicuously wealthier than the Planters, orthodox Congregationalists or Anglican Loyalists, and among the leading organizers of agricultural improvement in the province. In the 1770-80s, the Planters were commonly

¹³⁶ Ebenezer Parkman to Ezra Stiles, April 2, 1781, Commonplace book, Ebenezer Parkman Papers, 1718-1789, Ms. N-662, MHS

¹³⁷ Stephen A. Marini, “Religious Revolution in the District of Maine, 1780-1820,” in Charles Clark, James Leamon, & Karen Bowden, eds. *Maine in the Early Republic: From Revolution to Statehood* (Hanover, NH: University Press of New England, 1988), 121-124.

¹³⁸ George Rawlyk, *Nova Scotia’s Massachusetts: A Study of Massachusetts-Nova Scotia Relations, 1630-1784* (Montreal: McGill-Queen’s University Press, 1973), 249-251; J.M. Bumsted, “Resettlement and Rebellion, 1763-1783,” in Philip Buckner and John G. Reid, eds. *The Atlantic Provinces to Confederation: A History* (Toronto: University of Toronto Press, 1998), 176-77. Primary sources on the Planters between the 1760s and 1780 are very thin, but historians interested in why this wave of migrants did not support the American Revolution have argued that they constituted the majority of Aline’s and other religious revivalists’ congregations in the 1770s. See M.W. Armstrong, “Neutrality and Religion in Revolutionary Nova Scotia,” *New England Quarterly* 19 (1946), 50.

judged to be poor people so “negligent of their tillage,” they seemed “entire strangers to cultivation and very bad farmers,” especially compared with the “farmers of substance” who had more recently arrived.¹³⁹ Accordingly, northern improvers could add religious ‘enthusiasm’ as yet another negative corollary of the Planters and their unimproved farming practices.¹⁴⁰

Whether the power of early American elites derived from God, capital, political connections, learnedness, or merit, eighteenth-century farmers were rarely as resistant to their authority as the rhetoric of improvement suggested. Where Anglican or Congregational ministers were absent, or where their influence had diminished, successful merchants and professional men—especially military officers, lawyers, and judges—were among the more outspoken and prominent improvers in the North. It was against such professionals that farmers protested most explicitly in the eighteenth century, for example in 1786-7 when Daniel Shays led a rebellion of indebted farmers against the so-called River Gods in the Connecticut River Valley (the largest popular protest in the North). But, as in many eighteenth-century rebellions, debtors wanted the River Gods to provide greater protection from hardships, in this case, from the deepening economic depression of the 1780s. They protested against the weakening bonds between patricians and common people, rather than the illegitimacy of hierarchical relations

¹³⁹ John Robinson and Thomas Rispin, *Journey through Nova-Scotia Containing a Particular Account of the Country and its Inhabitants* (Sackville: Ralph Pickard Bell Library, Maritime Literature Reprint Series, 1981 [1774]), 8-10. Graeme Wynn criticized historians for their implicit acceptance of this critique of the Planters, “Late Eighteenth-Century Agriculture on the Bay of Fundy Marshlands,” in Philip Buckner and David Frank, *Atlantic Canada Before Confederation: The Acadiensis Reader* (Fredericton: Acadiensis Press, 1985), vol. 1: 42-53.

¹⁴⁰ Susan Burgess Shenstone, *So ObstinateLY Loyal: James Moody, 1744-1809* (Montreal: McGill-Queen’s University Press, 2002), 194-195.

between classes of men. In the deferential culture of the eighteenth century, northern farmers largely submitted to the moral, political, and intellectual authority of local elites, at least so long as the benefits were mutual.¹⁴¹

¹⁴¹ Brown, *Knowledge is Power*, 83-84; Robert D. Sturr, "Civil Unrest and the Rhetoric of the American Revolution," in *Periodical Literature in Eighteenth Century America*, eds. Mark Kamrath and Sharon Harris (Knoxville: University of Tennessee Press, 2005), 179-200. On Shays' rebellion, see especially Christopher Clark, *The Roots of Rural Capitalism: Western Massachusetts, 1780-1860* (Ithaca: Cornell University Press, 1990), 44-51; and Pauline Maier, "Popular Uprisings and Civil Authority in Eighteenth-Century America," *William and Mary Quarterly* 27: 1 (1970), 4-35.

Chapter 4 Cold Comfort: The Improvement of a Northern Climate

In 1796 Sir John Sinclair, the president of the British Board of Agriculture, wrote to George Washington to ask him “what part of America was the most desirable, as a place of residence, for a British emigrant.” Washington replied that America was big—“more than 1500 miles between the north-eastern and south-western extremities”—and that, “within so great a space ... there are a great variety of climates, and ... all sorts of land, differently improved.” The climate in the northern states “to the eastward of the Hudson’s river” was “cold, the winter long.” New England farms were generally small and “circumscribed.” He encouraged his correspondent to consider settling in the South.¹

By the late eighteenth century, this estimate of New England’s drawbacks—particularly its severe winters and short growing season—had become a commonplace. Still worse were the perceived disincentives to agricultural settlement in Nova Scotia. Compared to New England, one surveyor judged Nova Scotia’s climate “much colder.” Writing to the Lords of Trade in the early eighteenth century, he claimed that Nova Scotia’s “many other disadvantages [were] too long to be related” in a single letter.² At the end of the century, an absentee landlord and governor of the province wrote that it

¹ Sinclair decided to stay in Britain. December 11, 1796, George Washington to John Sinclair, Philadelphia, in *The Correspondence of the Right Honourable Sir John Sinclair* 2 v. (London: Henry Colburn and Richard Bentley, 1831), v. 2: 9-10.

² ‘Letter concerning Acadie and N.S.’ Samuel Vetch to the Lords of Trade, November 24, 1714, MG1, v. 1520, Folder J, NSARM.

was having trouble attracting or retaining settlers and was in “a dismantled desert State,” chiefly because its winters were believed to be “little inferior to that of Russia.”³ A prevailing view held that northern North American nature was bleak—its soils were meager and its weather nearly subarctic.⁴

In the eyes of agrarian reformers, especially those with a financial interest in northern territories, the “unfavourable appearance” of the region was instead the fault of its incompetent farmers.⁵ Bad farm management was stalling economic development, improvers argued, but the northern American environment was not inherently poor and infertile. Influenced by widely circulating but inconclusive theories about the determining influence of climate on the vigor and geographic diversity of plants and animals, improvers took an optimistic view of the situation in New England and Nova Scotia. They postulated a versatile concept of northern America as part of a global temperate zone, more or less on an axis with northwestern Europe and parts of Asia.

Eighteenth-century naturalist-improvers debated a variety of ideas about the geography of weather and climate. In the 1730-60s Carl Linnaeus classified the living world into distinct climatic categories based on the distribution of species that had survived the biblical Flood. Initially he proposed five regions—the Australian (Ethiopia to southern Africa), Oriental (Siberia to Syria), Mediterranean, Boreal (Lapland to Paris), and Occidental (Canada to Virginia, China and Japan); later, he added a sixth, the Alpine

³ Cape Breton Governor’s Accounts, 1784-1801, J.F.W. DesBarres Fonds, Series 3, 1774-1807 (MG 23, F1-3), Library and Archives Canada.

⁴ For disparaging views about the southern colonies, see Karen O. Kupperman, “Fear of Hot Climates in the Anglo-American Colonial Experience,” *WMQ* 41: 2 (1984), 213-240.

⁵ John Robinson and Thomas Rispin, *Journey through Nova-Scotia Containing a Particular Account of the Country and its Inhabitants* (Sackville: Ralph Pickard Bell Library, Maritime Literature Reprint Series, 1981 [1774]), 24.

zone (all mountains). While most Anglophone botanists in the eighteenth century used the Linnaean binomial system of species classification, there was considerable debate about the utility of Linnaeus's ideas about climatic regions and geographical distribution. Other naturalists promoted competing models. Georges Buffon, Linnaeus's major critic, offered a complicated secular explanation for global similarities and dissimilarities in the natural world, which involved the theory of polygenesis, migration, topographic isolation, climate change, as well as the transparently chauvinistic idea that Old World species were developing toward perfection while their New World analogues were diminished or otherwise degenerate.⁶

More general climatic geographies influenced by Linnaeus and Buffon but based on latitude and average temperature offered a roughly tripartite division of the world into arctic or 'frigid,' temperate, and tropical zones, categories which persisted among naturalists through the nineteenth and twentieth centuries.⁷ Particularly before the influence of Alexander von Humboldt's *Essai sur la géographie des plantes* (1807), eighteenth and early nineteenth century naturalists in Europe and European colonies

⁶ Georges Louis Leclerc, comte de Buffon, *Natural History, General and Particular*, trans. W. Smellie (London: Strahan and Cadell, 1781 [1761]), 127-129.

⁷ American Charles Pickering, for example, proposed eleven floral regions, including the temperate region of North America, which he further separated into four sub-regions including "*Flora Canadensis*"—all plants north of the Oregon, Missouri, and St. Lawrence Rivers from the Atlantic to Pacific Oceans and "*Flora of the United States*"—for land south of the St. Lawrence and between the Atlantic Ocean and the Mississippi River. Charles Pickering, "On the Geographical Distribution of Plants," *Transactions of the American Philosophical Society* (1831) 3: 274-284. Pickering presented this lecture to the APS in 1827. He was also one of the leading American theorists of the biogeography of race, especially in his, *The Races of Man and Their Geographical Distribution* (1854). See also Mart A. Stewart, "'Let Us Begin With the Weather': Climate, Race, and Cultural Distinctiveness in the American South," in Mikulas Teich, Roy Porter, and Bo Gustafsson, eds. *Nature and Society in Historical Context* (New York: Cambridge University Press, 1997), 240-256.

arrived at little consensus.⁸ The lack of a universally accepted biogeography allowed for interpretive flexibility. Improvers combined elements of various competing biogeographical models, especially when defining and interpreting the boundaries of the most advantageous climatic regions.

Many people believed that moderate seasonal temperatures, sunlight, and precipitation made for the healthiest and most cultivable environments; Enlightenment intellectuals—especially Scottish writers—idealized the positive effects of a temperate climate. As a student in Edinburgh, William Almon, a Halifax, Nova Scotia physician, studied Adam Ferguson’s environmental speculations in his *Essay on the History of Civil Society* (1767):

Man, in his animal capacity is qualified to subsist in every Climate. He reigns with the Lyon and the Tyger under the equatorial heats of the sun, or he associates with the Bear and the Reindeer beyond the polar circle. ... The intermediate climates, however, appear most to favor his Nature.⁹

Writers further correlated weather with stages of cultural and economic development. A temperate climate was both the cause and consequence of high civilization; climates that were too intense retarded progress. While the equator and the poles represented fixed extremes of hot and cold temperatures, respectively, the geography of the temperate zone was negotiable. Eager to be located within this zone, improvers discursively associated

⁸ Biogeography was no more conclusive in the twentieth century. One ecologist explained that his work was “based in considerable part on information gained by personal observations in many parts of North America ... Any biogeographic classification must be in part arbitrary, and many compromises must be made if the diverse ecologic relationships of all the species of plants and animals over any extensive area are to be brought together into a single system. No agreement has been reached by biogeographers on the system of classification best suited to the needs of all the persons who may use [it].” Lee R. Dice, *The Biotic Provinces of North America* (Ann Arbor: University of Michigan Press, 1943), 7.

⁹ Manuscript notebook of Dr. William James Almon, c. 1780-1800, Almon Family Papers, MG1, NSARM.

the northern colonies of British America with civilized countries that displayed similarly “temperate colder climates” in other parts of the world.¹⁰

Improvers argued that northern America differed from its Old World analogues chiefly by the late arrival of able settlers like themselves. Attracting such settlers became an increasingly competitive business between the Seven Years’ War and the revolutions of the late eighteenth and early nineteenth centuries. The expansion and contraction of the British and French empires intensified emigration among both refugees and opportunists, with especially volatile migration flows in the Atlantic world after the British recognized the independence of the Thirteen Colonies in 1783.¹¹ During this flux of territorial sovereignty, improvers became personally invested in ongoing debates about climatic biogeography, contributing their experience in, and disproving or minimizing damaging speculations about, local environments. Northern naturalist-improvers stepped up their efforts to inventory and publicize regional “natural advantages ... for the purpose of attracting useful and loyal settlers,” especially to the least cultivated areas of New England and Nova Scotia.¹²

¹⁰ [Notes for lectures on botany], HUG 1677 53, WDP Papers.

¹¹ James Horn, “British Diaspora: Emigration from Britain, 1680-1815,” in P.J. Marshall, ed., *The Oxford History of the British Empire*, vol. 2, *The Eighteenth Century* (New York: Oxford University Press, 1998), 29-32; Brendan O’Grady, *Exiles and Islanders: The Irish Settlers of Prince Edward Island* (Ithaca: McGill-Queen’s University Press, 2004). Broad studies of Atlantic migration in the seventeenth and eighteenth centuries include Bernard Bailyn, *Voyagers to the West: A Passage in the Peopling of America on the Eve of the Revolution* (New York: Vintage, 1986); Nicholas Canny, ed. *Europeans on the Move: Studies on European Migration, 1500-1800* (New York: Oxford University Press, 1994); Leslie Choquette, *Frenchmen into Peasants: Modernity and Tradition in the Peopling of French Canada* (Cambridge: Harvard University Press, 1997); and Alison Games, *Migration and the Origins of the English Atlantic World, 1500-1800* (Cambridge: Harvard University Press, 1999).

¹² Cape Breton Governor’s Accounts, 1784-1801, J.F.W. DesBarres Fonds, Series 3, 1774-1807 (M.G. 23, F1-3), Library and Archives Canada. While improvers in Britain

Since the length and severity of northern winters dampened commercial interest in the region, improvers sought ways to assuage this perception in particular. Despite its name, the Nova Scotia Society for the Promotion of Agriculture explained, in a text that was reprinted in various forms through the 1780s, that its major goal was to help the colony “to procure inhabitants.”

In the present confusions of Europe, there are thousands who would be happy to take sanctuary among us, if they were acquainted with the state of this Province, ... that there is here an extensive country, fertile and salubrious; with mild laws, a settled Government, no taxes to be paid, full liberty of Conscience, with plenty of land that wants cultivators, besides many other natural advantages; and all this is under the protection of Great-Britain; it would soon turn the tide of emigration to Nova Scotia.¹³

To substantiate these claims, contradict popular and learned ideas about the impoverished nature of northern America, and expose the untapped potential of the region, northern improvers investigated local natural history, documenting weather patterns, seasonal temperatures, soils, plants, and animals. They published or otherwise communicated their field notes to colleagues, especially to Europeans. Surveying, assessing, and classifying local natural features drew the attention of prominent naturalists and solidified improvers’ claims to scientific expertise. It also accomplished the preliminary steps necessary for creating a landscape of improvement. Through a scientific approach to studying and ameliorating the “disadvantages of a more northern climate” they would

and on either side of the new international border between New England and Nova Scotia increasingly couched their boosterism in domestic or national terms, these justifications were shifts in rhetorical emphasis—at least through the Napoleonic wars as British and French domain in Atlantic colonies continued to be uncertain—rather than fundamental ideological reconsiderations. In chapter 3, I discuss the local versus general characteristics of improvement discourse in the changing political alignments of the eighteenth century in greater detail.

¹³ *Letters and Papers on Agriculture: Extracted from the Correspondence of a Society Instituted at Halifax for Promoting Agriculture in the Province of Nova Scotia*, vol. 1 (Halifax: John Howe, 1789), 10.

create a thriving countryside and, in the process, a more temperate environment that would transcend the contemporary limits of the region.¹⁴

Surveying

In step with the surveying methods recommended by Carl Linnaeus and Arthur Young, explorers in northern America avoided heavily trafficked areas and concentrated their efforts on thinly inhabited or wild lands.¹⁵ New England's hills and mountains, its "surface inequalities" as one traveler put it, were responsible for much of the region's interior marginal lands.¹⁶ The White Mountains—especially the highest peak, Mount Washington in New Hampshire—were a frequent destination. Several well-documented surveys of the range were completed in 1774, 1784, 1804, and 1816. European-Americans had only begun to settle northern New Hampshire in the 1760s and the White Mountains were nearly uninhabited by colonists.¹⁷ Improvers expected to document rare specimens as well as a rich natural environment. But sometimes they did not find everything they hoped to see.

In July 1784, Captain John Evans led "a company of gentlemen" including Joseph Whipple, Manasseh Cutler, Joshua Fisher, Jeremy Belknap and others on a hike through

¹⁴ F.A.F. duc de la Rochefoucauld-Liancourt, *Travels through the United States of North America... in the Years 1795, 1796, and 1797*, trans. H. Neuman, 2nd ed. 4 v. (London, 1800), 554.

¹⁵ Lisbet Koerner, *Linnaeus: Nature and Nation* (Cambridge: Harvard University Press, 1999), 114-117. Young offered some tips for agricultural espionage in his *The Farmers Letters to the People of England* (London, 1758), 461-479.

¹⁶ Timothy Dwight, *Travels in New England and New York* 4 vols. (New Haven, 1821), V1: 28.

¹⁷ Bernard Bailyn, *Voyagers to the West: A Passage in the Peopling of America on the Eve of the Revolution* (New York: Vintage, 1986), 11.

the White Mountains. Most of the men, including Whipple, a Portsmouth merchant, were interested in the real estate potential of the area. For American Academy of Arts and Sciences members Fisher and Cutler, the tour was also a scientific expedition: they intended to survey and collect birds and botanical specimens, compare them to the flora and fauna of eastern Massachusetts, and measure the height of Mount Washington. Belknap would describe their findings in his book, *The History of New Hampshire*.¹⁸ Their trip, and the writing that emerged from it, thus promised to advance several goals simultaneously.

At first the scientific objectives were stymied by bad weather: the air at higher altitudes was chilly and, according to Cutler, “it happened, unfortunately, that thick clouds covered the mountains almost the whole time.” The dense cloud cover and more especially the cold, which “had nearly deprived [Cutler] of the use of his fingers” also “rendered useless” the sextant, telescope, barometer, thermometer and other instruments the party had carried with them. By the time they reached the summit, all the gentlemen were numb-fingered: one of them tried to “engrav[e] the letters NH but was so chilled with the cold, that he gave the instruments to Col. Whipple, who finished the letters.” Even on hot days much of mountainous New Hampshire was disappointing to them. While the farms and “fine houses” in intervale lands pleased Cutler, the “extreme” temperatures and “barren plains” were bad for botanizing. “This is a most wretched

¹⁸ Jeremy Belknap, *The History of New-Hampshire* 3 v. (Boston: 1792 [1784]) v. 3: 47, 97; Russell M. Lawson, *Passaconaway's Realm: Captain John Evans and the Exploration of Mount Washington* (Hanover, NH: University Press of New England, 2002). After the Northwest Ordinance of 1787 Cutler, a principal in the Ohio Company, lead a survey of the Ohio Valley in anticipation of land sales. See Manasseh Cutler, *An Explanation of the Map ... of the Federal Lands Comprehended between Pennsylvania west line, the rivers Ohio and Sioto, and Lake Erie ...* (Salem, Ma: Dabney and Cushing, 1787).

place indeed,” he huffed in his diary, “miserable huts, on very poor, rocky, rough land, constantly uphill and down.”¹⁹

Finally Cutler was interested in “the appearance of a close-fed pasture” above tree line. Though on closer inspection the green turned out “to be a mere mass of rocks, covered with a mat of long moss,” here Cutler saw what he had come to find: “various kinds of vegetables, most of them such as we had never seen before.” Together, the hikers identified arctic-alpine species and compared unfamiliar to known native and imported plants: a tall heath was Labrador tea, a fruiting vine resembled cranberry, and an aromatic wildflower looked like narcissus.²⁰ A botanical study of the highest elevations in the region in particular could corroborate or dispute leading theories about the climatic similitude of all alpine regions (proposed by Linnaeus) or the essentially unified biogeography of all “northern countries” across the globe (as Buffon asserted and Thomas Pennant and many other naturalists attempted to confirm). Barometric measurements could have contributed to an understanding of local weather. But Cutler

¹⁹ Unlike Cutler, Belknap employed the language of the sublime to describe the arduous ascent of the White Mountains: “A poetic fancy may find full gratification amidst these wild and rugged scenes, if its ardor be not checked by the fatigue of the approach.” Belknap, *The History of New-Hampshire*, v. 3: 48-51; Jeremy Belknap, *Journal of a Tour to the White Mountains in July, 1784* (Boston: Massachusetts Historical Society, 1876), 16; William Cutler and Julia Cutler, eds. *Life, Journals, and Correspondence of Reverend Manasseh Cutler, LLD, By His Grandchildren 2 v.* (Cincinnati: Robert Clarke & Co., 1888), V2: 98-99, 103. Mount Washington is the highest peak north of the Carolinas and east of the Mississippi River and it has been described as an “arctic island in the temperate zone” comparable to northern Labrador and western Greenland. Charles P. Alexander, “The Presidential Range of New Hampshire as a Biological Environment,” *American Midland Naturalist* 24: 1 (1940), 104.

²⁰ Belknap, *The History of New-Hampshire*, v. 3: 48-51; Jeremy Belknap, *Journal of a Tour to the White Mountains in July, 1784* (Boston: Massachusetts Historical Society, 1876), 16; William Cutler and Julia Cutler, eds. *Life, Journals, and Correspondence of Reverend Manasseh Cutler, LLD, By His Grandchildren 2 v.* (Cincinnati: Robert Clarke & Co., 1888), V2: 98-99, 103.

decided that much of this analysis was not yet possible. His botanical findings were insufficient. His measurements were dubious and limited by the fact that “all the instruments were unhappily broken in the course of the journey through the rugged roads and thick woods.” Moreover, the extent and character of most of the mountains in the range were still unexplored, “the country round them being a thick wilderness.”²¹

Cutler had begun “attending to botany” during the Revolutionary War, as well as recording disease outbreaks, astronomical phenomena, and daily weather. Encouraged by his finds in coastal Massachusetts and by his reading of English naturalists Stephen Hales and John Hill, Cutler wanted to survey “some other parts of the State” and publish a comprehensive inventory of its plants. In 1780-1781, he solicited the support of the Harvard Corporation for such a study, proposing:

to investigate the botanical character of such Trees and Plants as may fall under my observation, which are indigenous to this part of America, and have not been described by Botanists; also to make out a Catalogue of those which are found growing here, but have been found in other parts of the World, and therefore need no botanical description; and of such as have been propagated here, but are not the spontaneous production of the Country.²²

The 1784 survey in the White Mountains contributed to this goal only “in part” since, as Jeremy Belknap told members of the American Philosophical Society, “the weather while we were in that region hindered us from making some observations which we intended.”

²¹ Jeremy Belknap, “Description of the White Mountains in New-Hampshire, (Read October 15, 1784),” *Transactions of the American Philosophical Society* 2 (1786), 43, 49.

²² June 20, 1780, MC to Professor Samuel Williams in Cutler and Cutler, *Life, Journals and Correspondence*, 80-82; Stephen Hales, *Vegetable Staticks* (London: 1727); John Hill, *Eden, or, A compleat body of gardening* (London: 1773); Manasseh Cutler, *An Account of Some of the Vegetable Productions, Naturally Growing in this Part of America, Botanically Arranged* (Boston: 1785).

“Yet till a better account” was possible, he was sure that his information would “prove more satisfactory than any which has yet been published or reported.”²³

The empirical advantage

Foreign visitors, including Mark Catesby, Pehr Kalm, and La Rochefoucauld-Liancourt, were commissioned to explore North America by the Royal Society, the Swedish Academy of Science, the British Board of Agriculture, and other official or private sponsors. Despite these attempts, by the late eighteenth century, naturalists were skeptical that any of their predecessors had done sufficient or worthy fieldwork in North America. Into the early nineteenth century, each new account disparaged or conveniently omitted mention of American travel pursued over two centuries.

In the 1750s, Young encouraged his readers to study the climate, natural history, and agricultural produce of “all parts of the globe,” but insisted that “our American colonies should be examined with the most careful attention” because existing accounts by various authors were “diametrically opposite” and filled with “contrariety.”²⁴ Catesby, Kalm, and most other prominent explorers ignored the northern colonies, and writers who focused specifically on New England or Nova Scotia groused that there were no accurate or comprehensive studies of the region. Though numerous travelers had published their experiences or circulated them in private correspondence, northern

²³ Jeremy Belknap, “Description of the White Mountains in New-Hampshire, (Read October 15, 1784),” *Transactions of the American Philosophical Society* 2 (1786), 43.

²⁴ Young, *The Farmers Letters to the People of England* (London, 1758), 473.

naturalist-improvers usually related their own observations as if they were wholly unprecedented. In the 1790s, Samuel Williams wrote in his *A Natural and Civil History of Vermont* that, although the “natural productions of this continent, have been one object of general inquiry” few had been attempted by “settlers of the British colonies.”

Among the Spanish writers, there are some good essays on the natural history of the southern parts of America. In Canada, some of the physicians and Jesuits were attentive to the natural productions of that part of the continent; and have left some valuable pieces on the natural history of Newfrance.

But settlers in (former) British colonies were “obliged to depend upon transient and partial accounts ... respecting the natural productions of America.” In their state natural histories, Williams, Belknap, and Cutler each integrated chronologically and topically the available disparate information on New England’s natural features in previous reports, surveys, and personal records. Nevertheless, Williams believed that “the subject instead of being fully explored, is yet a treasure but little examined.”²⁵

Local studies of flora and fauna had “long been desired, by every inquisitive mind” in America, John Adams assured Sir John Sinclair. Adams had backed financing for “a natural history of this country” in a clause in the 1779 Massachusetts constitution, but it had been a nonstarter until 1805 when the Massachusetts Society for Promoting Agriculture (MSPA) privately sponsored William Dandridge Peck’s new post at Harvard.²⁶ In his inaugural address to the Corporation, Peck spoke of Americans’ general ignorance and the urgency of teaching students to “discover & cultivate” natural

²⁵ Williams, *Natural and Civil History of Vermont* (1794), ix-x.

²⁶ John Adams to Sir John Sinclair, May 24, 1805, in *The Correspondence of the Right Honourable Sir John Sinclair* 2 v. (London: Henry Colburn and Richard Bentley, 1831), v. 2: 38-39.

history.²⁷ Indifference must have continued to prevail since, as late as 1816, when Sir Joseph Banks was sent a “*Florula Bostonicus*” gathered “from the general parts of the state of Massachusetts” as well the latest expedition to Mount Washington, the sender considered it as a unique attempt to catalogue “all the plants of the New England states.”²⁸ The following year, Banks was offered “a few facts respecting the *sui generis* State of Connecticut,” by “a native” who was concerned that while “all sorts of singular and anomalous articles ... from a mammoth to a mite, are sometimes sent for your inspection and classification from all quarters of the globe,” the “new or curious” aspects from his home quarter had long been excluded.²⁹

Whether these pleas were self-aggrandizement or an accurate reflection of asymmetrical information, North American naturalists in the late eighteenth century redoubled their fact-finding efforts. In 1781 Cutler urged his AAAS colleagues to sponsor topographical surveys, which were “necessary to furnish materials for a Natural History of the Country, in which we are, at present, very deficient.”³⁰ Peck, who was mostly interested in birds and insects, was pleased that Belknap and Cutler, who were “much more experienced in Botanic Science & rural Oeconomy” were taking on the task of surveying local flora. Peck wrote to Belknap that “an accurate history of the Northern States is a subject of great importance,” posing the rhetorical question, “How grossly

²⁷ Draft of inaugural address to Harvard Corporation [1805], Box 2 HUG 1677, WDP Papers.

²⁸ Francis Boott to Joseph Banks, December 10, 1816, Sir Joseph Banks Correspondence, Banks Collection, British Museum (Natural History), 122-123.

²⁹ May 1, 1817, David Humphreys to Joseph Banks, Add Ms. 8958.49-52, British Library.

³⁰ January 18, 1781, MC to the Harvard Corporation, in Cutler and Cutler, *Life, Journals and Correspondence*, 82-83.

ignorant of this Country is the European World?”³¹ Harvard professor of medicine Benjamin Waterhouse had “a strong desire” to communicate “the peculiarities of this new world” to Banks, writing in 1793 that “the European world, even England ... are still unacquainted with us.”³²

In part, early American residents highlighted the ignorance of distant naturalists and drew attention to their own plant hunting trips and direct experience in the northern climate to ground their claims to natural history expertise. Fieldwork authenticated what Susan Scott Parrish calls ‘the empirical advantage’ of extra-European naturalists—that is, the crucial role of local knowledge and the collaborative aspects of intellectual exchange in trans-Atlantic correspondence networks. Naturalists in London were reliant on provincial naturalists and travelers to dispatch “the exotic biota of Asia, the Americas, Africa, and, later, Australia,” because the “collectors in those distant places were understood to possess a local expertise about the nature around them.”³³

British writers condescendingly agreed that “living upon the spot ... must make a considerable difference,” to settlers’ understanding of their home environments.³⁴ But they also warned scouts on tours abroad to take “great care in *admitting and rejecting*”

³¹ March 30, 1790, William D. Peck to Jeremy Belknap, Box 1 HUG 1677, WDP Papers, Harvard University Archives.

³² BW to JB, December 20, 1793, BL Add. Mss. 8098.305-306.

³³ Susan Scott Parrish, *American Curiosity: Cultures of Natural History in the Colonial British Atlantic World* (Chapel Hill: University of North Carolina Press, 2006), 106, 118-125; Joyce E. Chaplin, *An Anxious Pursuit: Agricultural Innovation and Modernity in the Lower South, 1730-1815* (Chapel Hill: University of North Carolina Press, 1993), especially 66-91. For studies of local knowledge in a variety of early modern colonial contexts, see Londa Schiebinger and Claudia Swan, *Colonial Botany: Science, Commerce, and Politics in the Early Modern World* (Philadelphia: University of Pennsylvania Press, 2005); and Nicholas Dew and James Delbourgo, eds. *Science and Empire in the Atlantic World* (New York: Routledge, 2008).

³⁴ Arthur Young, “Preface,” *Annals of Agriculture* 1: 1 (1784).

information from any “natives, concerning their own country,” because “some talk big through vanity, or partiality; some are misled through ignorance.”³⁵ Ignorance or authoritative knowledge of science in the seventeenth through early nineteenth centuries (as I discuss in Chapters 2 and 3), hinged as much on social status as on proven skills or original intellectual contributions. Improvers were often accepted as agricultural savants simply by association with the broader Atlantic society of civilized gentlemen and women and could exhibit their worth through well-kept estates. The majority of scientific people were dabblers or, like Benjamin Franklin, passionately engaged in natural philosophy but entirely self-taught.³⁶ Professorships in natural history and botany began to be established at the University of Pennsylvania and Harvard, among other schools in the late 1780s, but neither American nor European universities offered thorough training in those disciplines. Instead, physicians like Joshua Fisher and Benjamin Vaughan, educated at Edinburgh, were drawn to botany through lectures on *materia medica*. Though some naturalists were beginning to object that this focus on medicinal plants unfortunately narrowed the scope of botany, in any case, academic rigor and intellectual toil were not requirements for a life in eighteenth century science. The path to distinction as a naturalist of any kind was fairly wide. If Sir Joseph Banks and Arthur Young’s careers were exemplary, documenting one’s travels abroad was one of the most important qualifications for recognition as a botanist or agricultural improver.³⁷

³⁵ Arthur Young, *The Farmers Letters to the People of England* (London, 1758), 475 (emphasis in original).

³⁶ [Notes for lectures on botany], HUG 1677 53, WDP Papers. George B. Goode, “The Beginnings of Natural History in America,” in Sally Gregory Kohlstedt, ed. *The Origins of Natural Science in America: The Essays of George Brown Goode* (Washington: Smithsonian Institution Press, 1991), 23-89.

³⁷ John Gascoigne, *Science in the Service of Empire: Joseph Banks, the British State, and*

Cultural capital accrued especially by traveling to far-flung destinations, but scientific credibility could be gained by exploring nature closer to home, as did Gilbert White and most provincial naturalists. Cutler learned as much about botanical science and local vegetation as his “leisure would admit.” On rambles in his neighborhood in eastern Massachusetts, he claimed discovery of “a vegetable, the most singular and remarkable production of nature in its fructification I ever saw and to which I can find nothing similar in any author.” European and American naturalists beginning in the early seventeenth century had made numerous trips across the northern colonies to discern the region’s distinctive floral, faunal, soil, and topographical features and many of the plants Cutler found had been previously identified (not least by indigenous groups) and were not limited to coastal or interior New England nor native to North America. Whether or not the information he gathered on his 1784 tour was original, participating in the expedition helped him to establish his expertise among, and reinforce his solidarity with naturalists in other parts of the world. The early modern science of natural history was a largely empirical practice of collection, description, comparison, and classification; botanists aspired to be discoverers, but most were merely plant hunters.

Though most naturalist-improvers were amateurs and were not singularly motivated by the glory of discovery, a central conceit was that the natural wealth of the countryside was illegible without their expert gaze. The purpose of fieldtrips like those to the White Mountains was threefold: naturalist-improvers toured marginal areas to perform their expertise by detecting species, to contribute empirical data to the

the Uses of Science in the Age of Revolution (New York: Cambridge University Press, 1998). On Banks’s education prior to his voyages as a naturalist, see Patrick O’Brien, *Joseph Banks: A Life* (London: Harvill Press, 1987), 23-34.

encyclopedic project of Enlightenment natural history and, most importantly, to assess regional commercial possibilities. Sometimes they were anxious by their inability to accomplish these goals all together. In particular, there seemed to be few unusual plants and animals peculiar to the northern colonies, species that were sufficiently exotic to excite interest among naturalists who traveled to further and less familiar destinations.

The curious and the ordinary are shifting categories and by the middle to late eighteenth century explorers might have had modest sights relative to the surprises Europeans encountered in their earliest incursions to North America. Those looking in the northern latitudes of the continent should have been especially primed for low expectations. A naturalist in South Carolina praised Belknap's history of New Hampshire but nevertheless thought that if northerners thought the state's nature was still "comparatively little known" further studies were likely to "excite little curiosity."³⁸ According to numerous reports, the long-cultivated areas of New England were too similar to English agricultural landscapes—a common perception was that "no two countries on the globe ... resemble each other so much as Old England & New."³⁹ A physician and member of the Royal Society, stationed with British troops in Newport, Rhode Island during the Revolutionary war, expressed this frustration when he wrote that the region was "just an English country, covered with the same herbage & consequently one of the worst places in America for collecting plants."⁴⁰ By the early nineteenth

³⁸ David Ramsay to Jeremy Belknap, March 11, 1795, in Robert L. Brunhouse, "David Ramsay, 1749-1815: Selections from his Writings," *Transactions of the American Philosophical Society* 55: 4 (1965), 139-140.

³⁹ "Oxen," [n.d.] Benjamin Waterhouse Papers (H MS c16.4), Harvard Medical Library in the Francis A. Countway Library of Medicine (BW-HMS c16.4).

⁴⁰ October 28, 1777, Charles Blagden to Joseph Banks, 148-151, Sir Joseph Banks Correspondence, DTC, British Museum (Natural History).

century, naturalists had come to accept the idea that “the most interesting plants are not found near old settlements” like those of southern New England.⁴¹

Commerce, friend of science

But northern naturalists’ search for exotic biota could be conveniently folded into their Baconian program of accumulation, mastery, and exploitation of natural facts. Whether or not specific locales abounded with ‘curious specimens,’ naturalist-improvers tended to understand the environment in highly pragmatic terms; their primary interests in and views of nature were shaped by an ideal of economic development based on resource exploitation not unlike the New World visions of early explorers like Champlain, Gosnold, and Smith.⁴² In contrast to their Scottish counterparts with sights on the Highlands, improvers focused on northern America rejected romantic notions of the region as a mysterious northern frontier. Manasseh Cutler’s botanical curiosity was all-embracing, but in his travel notes from the White Mountains it seems he was most satisfied and comfortable when he saw the familiar: a freshly mown lawn—“a close-fed pasture” or, in another spot, a “picturesque” meadow.⁴³ As a naturalist, Cutler valued

⁴¹ WDP to Mr. Kirby, April 22, 1817, Box 2: Folder ‘Papers 1815-19,’ WDP Papers, Harvard University Archives.

⁴² William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York: Hill and Wang, 2003, [1983]), 19-22.

⁴³ Cutler and Cutler, *Life, Journals and Correspondence*, 103. On the assimilationist vision of the picturesque, see Ann Bermingham, *Landscape and Ideology: The English Rustic Tradition, 1740-1860* (Berkeley: University of California Press, 1986); and I.S.

exotic or 'curious' specimens; as an improver he desired a prosperous agricultural scene. Paradoxically, he sought a domesticated environment in which to hunt for wild nature.

Naturalist-improvers assumed that these pursuits were compatible because scientific exploration, colonization, and land development were all speculative ventures. While Belknap, Cutler, and their companions searched for special characteristics of the White Mountains, their natural history survey was also an investment in the larger vision for northern New England's economic development. In surveying the mountains' rocks and minerals, for example, they were heartened to find flint and slate, which could be readily mined and commodified, and disappointed that "some specimens of rock chrysal have been found, but of no great value. No lime stone has yet been discovered." Belknap conceded that "what stores the bowels of the mountains contain, time must unfold; all searches for subterraneous treasures, having hitherto proved fruitless." English explorers beginning with Martin Frobisher and Sir Humphrey Gilbert in the sixteenth century failed to find mineral riches to justify the colonization of northern North America, turning instead to the proxy gold of fish and fur and, their most durable conquest, land.⁴⁴ Two centuries later, New Hampshire was as yet thinly settled with industrious white settlers, but Belknap's description of its rich soils, he hoped, might induce more to come.

MacLaren, "The Limits of the Picturesque in British North America," *Journal of Garden History* 1 (Jan.-March 1985), 97-111.

⁴⁴ In the seventeenth century, propagandists for colonization in northern America like Marc Lescarbot, Pierre Biard, and Sir Ferdinando Gorges argued that agrarian settlements were a safer route to wealth than the continued search for precious metal mines. On early disappointments in commercial schemes for the northern colonies, see John G. Reid, *Acadia, Maine, and New Scotland: Marginal Colonies in the Seventeenth Century* (Buffalo: University of Toronto Press, 1981).

The hikers were studying montane vegetation in part to assess possibilities for cultivating the slopes. Indications of fertile soil in what was otherwise marginal terrain seemed evidence of latent improvement, much like it did for northern improvers in Scotland striving to gentrify the rugged Highlands.⁴⁵ Even if no valuable minerals would ever be found in New England's uplands, agricultural development could continue to bring "certain riches": the precipitation at the top of the mountain yielded "freshets, which bring down the soil, [to] the intervals below, and form a fine mould, producing by the aid of cultivation, corn and herbage in the most luxuriant plenty."⁴⁶

Early American surveys like the expedition to the White Mountains were organized to satisfy avocational interest in local landscapes and natural history as well as for official business such as mapping Crown territory, determining provincial and private property boundaries, and appraising land values. Private accounts of journeys through the colonies were recorded in published travelogues, personal journals, letters, and the minutes of society meetings. Official surveys describing natural resources included hyperbolic promotional tracts aimed at attracting investors and settlers, reports to the British Board of Trade, and gazetteers which took stock of the agricultural and building development of individual towns, counties, and provinces. Like early modern travel writing of any kind, surveys were composites in intent, practice, and record—various enough to exceed the genre.⁴⁷

⁴⁵ On economic tourism in the Highlands, see Fredrik A. Jonsson, *The Enlightenment in the Highlands: Natural History and Internal Colonization in the Scottish Enlightenment, 1760-1830* (unpublished Ph.D. dissertation, University of Chicago, 2005), 81-100.

⁴⁶ Belknap, *The History of New-Hampshire*, v. 3: 42, 54.

⁴⁷ Mary Louise Pratt, *Imperial Eyes: Travel Writing and Transculturation* (New York: Routledge, 1992), especially 15-37; William H. Sherman, "Stirrings and Searchings (1500-1720)," in Peter Hulme and Tim Youngs, eds. *The Cambridge Companion to*

The narration of landscape features was a convention of various sorts of travel accounts, from bourgeois travelogues to the diaries of itinerant clergymen, midwives, and military officers. The Scottish immigrant Dr. Alexander Hamilton, who toured the seaboard from Maryland to the District of Maine in 1744 and socialized with the gentry in colonial cities, remarked on the landscape everywhere he went. He described Connecticut as a “desolate place ... very barren and waste land”; Newport, Rhode Island as “a pleasant, open spot of land, being an intire garden of farms”; and in Cambridge the properties were “inclosed with fine stone fences.”⁴⁸ A Gloucester, Massachusetts pastor who ministered to British American troops during the Seven Years’ War noted the character of the route as he headed to Crown Point in the fall of 1755. In a typical entry, he wrote:

this Mor’ng Sat out ab’t 8 1/2 clock over very Large Hills good Land Chesnut & Sugar trees in plenty. & over Some very Barren Land to a River & large Bridge where we Baited & road again over Badway 18 miles ... here was a Park of ab’t 40 acres with Dear 7 or 8 made with rails virginia Fence ab’t 10 feet high. from Brewers we pass over a Small Stream ... & down the River is a fine Glade of Intervale which we ride over for ab’t 2 miles & then very good Land & pretty good Road to Housatonick a pretty Town call’d Sheffield. about 7 miles NorWest is Stock-Bridge. ... this is a very good Town intervale in plenty Mountains a little distant. It has been fine weather all this week.⁴⁹

The natural history expedition was a cousin to these personal travelogues and of the more formal demographic and statistical tours which, like William Petty and John Sinclair’s

Travel Writing (New York: Cambridge University Press, 2002), 29-32; John Brewer, *Pleasures of the Imagination: English Culture in the Eighteenth Century* (Chicago: University of Chicago Press, 2000).

⁴⁸ Carl Bridenbaugh, ed. *Gentleman’s Progress: The Itinerarium of Dr. Alexander Hamilton, 1744* (Chapel Hill: University of North Carolina Press, 1948), 98, 101-102, 145.

⁴⁹ October 4, 1755, Samuel Chandler Diaries, 1746-1772, Massachusetts Historical Society.

statistical surveys of Ireland and Scotland, were the preliminary procedure to any project for capitalizing on natural resources. As a man hired to survey Cape Breton Island in 1766 wrote to an agent for the Lords of Trade:

I shall endeavor in the Description of this Island, to give their Lordships what Intelligence I am Able, and as I have made it my business to make myself acquainted with the former and present state of this Island and the manner of Improving it.⁵⁰

All these forms of geographical description were shaped—explicitly or implicitly—by the abiding goals of colonization and improvement. Consequently, detailed descriptions of landscapes or the biogeographical range of animals and plants were often embedded in survey or improvement literature rather than published as distinctly scientific information. In addition, surveyors’ descriptions of wild, cultivated, or engineered nature were often combined, and so their scientific, political, and financial objectives are sometimes difficult to differentiate in retrospect. There are abundant examples of the primacy of improvement ideology in late Enlightenment descriptions of the natural world—Gilbert White, for example, began his *Natural History of Selbourne* by comparing the fertility of its various soils. Standard questionnaires about the natural history of particular areas (intended for distribution mainly among local elites—large proprietors, merchants, lawyers, and the clergy), presumed this continuum in asking about a range of information. A circular issued in Halifax, for example, asked in the section “Natural History”:

5. Is there any Limestone? ... 6. Is there any Plaster of Paris. Does it ever lay in large blocks. Is there any of a half transparent kind? ... 10. Of

⁵⁰ August 16, 1766, Samuel Holland to John Pownal, Esq (Plantation General), CO 323/24, Part 1: 46-47, Colonies General: Original Correspondence, The National Archives, Kew.

what nature are the interior lands as to soil and situation; which are best calculated for present settlements ... 11. What are the wild animals?⁵¹

This heterogeneity was also evident in Belknap's third volume of his state history, subtitled "a Geographical Description of the State; with Sketches of its Natural History, Productions, Improvements, and Present State."

The materials of which this part of the History of New Hampshire is composed, were chiefly collected during a residence of twenty-two years in the eastern part of the State; from observations made in various places, and particularly in several journies to the northern and western parts; from original surveys of many townships and tracts of the Country; from the conversation of many persons who have been employed in surveying, masting, hunting and scouting; as well as in husbandry, manufactures, merchandise, navigation and fishery.⁵²

While all naturalists committed themselves to data gathering and looked forward to their potential contributions to theory, they were rarely devoted exclusively to the pursuit of science for its own sake. It was typical to consider agricultural improvement and natural history as closely related pursuits—historians Richard Drayton and Emma Spary have argued that, in the eighteenth century, "natural history increasingly became a science of natural economy."⁵³ Provincial practitioners especially tended to conflate the

⁵¹ June 4, 1801, William Sabatier, 'Circular on behalf of the compilers of a history,' vol. 15 Lt. Governor Prince Edward Island, 1804-1812, J.F.W. DesBarres Fonds, Library and Archives Canada (microfilm copy NSARM).

⁵² Belknap, *History of New Hampshire*, 3. The standard twentieth century guidebook to the White Mountains, by the Appalachian Mountain Club, acknowledged the historical quality of its topographical descriptions (but neither did it pretend to be a scientific publication): "... the lands of the White Mtns. are constantly subjected to the powerful forces of nature and the pervasive effects of contact with human visitors and management policies. Since change is therefore the rule, no source of information can be perfectly trustworthy, and a guidebook to this region can never be more than a record of the way things were at a given moment in time." *AMC White Mountain Guide, 25th edition* (Boston: AMC Books, 1992 [1907]), v.

⁵³ Richard H. Drayton, *Nature's Government: Science, Imperial Britain, and the 'Improvement' of the World* (New Haven: Yale University Press, 2000); Emma C. Spary,

two or justify the study of natural history in the economic terms of improvement. Even those naturalists with professional academic or official appointments, believed, like Benjamin Waterhouse that utility and economy were “the ultimate ends” of science. In his lectures, Waterhouse declared that botany, chemistry, mineralogy, and zoology formed “the very basis of agriculture” (it was the MSPA, after all, that finally provided the funding necessary for a professorship of natural history and a botanical garden at Harvard). He pointed to Sir Joseph Banks—president of the Royal Society and founding member of the Board of Agriculture—as a paragon of utilitarian natural history.⁵⁴

The agricultural improvement society in Nova Scotia asserted that “great improvements in Natural History—particularly in Agriculture,” were enhanced by the study of “Botany, and Chemistry, both of which are subservient to Agriculture.”⁵⁵ Harvard Professor William Peck repeatedly tried to persuade the Corporation that botanical, zoological, entomological, and chemical studies would help the regional economy. “The acquisition & diffusion of a more perfect knowledge of the natural productions of our own country,” he said, would effect the “rational hope ... that some discoveries may be made beneficial to Agriculture, to Commerce, & the Arts.” By investing in natural history Harvard would be contributing to economic development, and

Utopia's Garden: French Natural History From Old Regime to Revolution (Chicago: University of Chicago Press, 2000), quote on 13. See also Michael Dettelbach, “A Kind of Linnaean Being’: Forster and Eighteenth-Century Natural History,” in Johann Reinhold Forster, *Observations Made During a Voyage Round the World*, ed. Nicholas Thomas, et al. (Manoa: University of Hawai’i Press, 1996), *lv-lxxiv*.

⁵⁴ Waterhouse, “Lecture: Introductory on Natural History, October 12, 1810,” Folder c. 16.4, Papers of Benjamin Waterhouse, 1797-1829, Countway Library. Waterhouse recited this principle in his lectures since the 1780s.

⁵⁵ *Letters and Papers on Agriculture: Extracted from the Correspondence of a Society Instituted at Halifax for Promoting Agriculture in the Province of Nova Scotia* (Halifax: John Howe, 1789), 5-6.

vice versa. “Commerce,” Peck said, “is the friend of Science.” One of his counterparts in Nova Scotia expressed the relationship between research and development more bluntly: “The four quarters of the Globe are ransacked to supply [man’s] wants, and he draws so much from the vegetable kingdom that it is necessary that some should be acquainted with a considerable share of its productions.”⁵⁶

Naturalists carrying out fieldwork in colonial territories tended to be driven especially by the prospective applications of their research. Studying the topography of a newly subjugated, a supposedly uninhabited, or improperly settled place was a path to ‘improving’ it. Because the potential for territorial expansion was typically both the cause and consequence of natural history surveys in foreign places, naturalists were unapologetic for the economic and political objectives of their scientific activities.⁵⁷ For example, a 1784 proposal to Banks to fund an astronomical, botanical, and topographical surveying “expedition across the continent of America, by the way of Quebec and the Lakes,” promised “great advantage to the Nation, and in particular” to its sponsors. Banks declined the application on political grounds (it was too soon after the Treaty of Paris), but agreed with the applicant that “an ample return [and] ... benefits would arise” from the future exploration of “the neglected interior of that vast body of land.”⁵⁸

⁵⁶ [Draft of inaugural address to Harvard Corporation] [1805], Folder—Papers 1805-07, Box 2 HUG 1677, William Dandridge Peck Papers, Harvard University Archives; ‘Lecture: Introductory on Natural History,’ 1810, HMS c16.4, Benjamin Waterhouse [BW] Papers, Countway Library; Titus Smith, ‘Notes on Botany,’ Folder 5, item 24, MG1 Vol. 1664B, NSARM.

⁵⁷ For a discussion of this point in the Spanish empire, see Paula Susan De Vos, “Natural History and the Pursuit of Empire in Eighteenth-Century Spain,” *Eighteenth-Century Studies* 40: 2 (Winter 2007), 209-239.

⁵⁸ George Dixon to Joseph Banks, August 27, 1784, 4.47-48; Joseph Banks to George Dixon, August 29, 1784, Sir Joseph Banks Correspondence, Dawson Collection, British Museum (Natural History), 4.49.

Surveyors in colonial environments that yielded little that seemed new or exotic, were especially insistent on proving the continuum of nature study and improvement. Reports to the Board of Trade about northern American lands beginning in the early eighteenth century were documents more explicitly about exploitable resources, or significant lack thereof. “In reference to Cape Bretton,” wrote one informant to the Board in 1715, “the Soil is no way valuable being intirely a Rock covered over with moss. Theres Little ... timber there fitt for any manner of use, Spruce and Low pine, being what itt mostly yields. Theres [not] Improvement made on The Lands neither.”⁵⁹ Especially since surveyors did not provide detailed descriptions of environments they deemed too resource poor, ecological and economic geography were subtly converged and nearly indistinguishable in their accounts. A 1730 report about Nova Scotia to the Board stated that the “part of ye Soil that has been cultivated is found to be fertile, but no certain judgment can be made of the parts that have never been cleared.”⁶⁰ The surveyor hired by the provincial government in 1801-02 began his description of the coast facing Cape Breton Island with the caveat that, since he was “informed by others who had traversed that part of the country that the land to the Westward of the road was chiefly barrens ... we therefore concluded to shape our course accordingly”—that is, they avoided the coast altogether.⁶¹

⁵⁹ Nov. 21, 1715, Thomas Caulfield to Board of Trade, MG1 v. 1520, Folder K, NSARM [copy of PRO CO 217/2, WA 53].

⁶⁰ R. Philipps to B of T, “An Account of the situation in Nova Scotia, November 26, 1730,” MG1, v. 1520, Folder S, NSARM.

⁶¹ Titus Smith, *Survey of the Eastern and Northern Parts of the Province in the Years 1801 & 1802: With general observations thereof, Also a survey of the lands between Sackville (Bedford) and Shubenacadie. And observations on the Western Parts of the Province. With a list of trees, shrubs, grasses and plants. And observations on the nature and uses of the trees* (Halifax: 1857, 3d edition).

The necessity of focusing on economic botany in surveying northern American nature was also made clear in reports to the Royal Society. The Society learned from its correspondents in the northern colonies that Canadian maple syrup was a good substitute for “West India Sugar.” Two reports described trees that produced a turpentine-like sap. The juice of one tree was “sanative” and grew in both Nova-Scotia and “the more Easterly parts of N. England”; the sap of the other tree acted as a non-fatal poison and had “a very strong unsavory Smell ... stinks as bad as Carrion.” These were nearly the only items published about colonial Nova Scotia in the Royal Society’s *Philosophical Transactions* before the nineteenth century. The most “remarkable instances” of vegetation in New England, wrote Governor of Connecticut John Winthrop, were the thriving orchard and field crops “brought over hither” from England. A 1724 report titled, “Observations of Some Plants in New England” boasted that apples, pears, peaches, onions, and green beans “suit mighty well with our Soil, and grow here to great Perfection,” and Connecticut pastor Timothy Edwards contributed botanical observations of “a remarkable pumpkin vine.”⁶²

These reports reflect both the perceived limits of northern nature as well as the broader improving project that guided early modern science. Winthrop apologized to the publisher of the *Transactions* for the unexceptional quality of his province’s nature. “I

⁶² “An Account of a sort of Sugar made of the Juice of the Maple, in Canada,” 15 (1685): 988; “An Extract of a Letter, Written by John Winthrop, Esq. Governour of Connecticut in New England ...” 57 (1670): 1151-1154; “Observations on some of the Plants in New England ... Honourable Paul Dudley, Esq; F.R.S.” 33 (1724/5): 194-200, in *Philosophical Transactions of the Royal Society 1683-1775*; Wallace Anderson, ed. *The Works of Jonathan Edwards: Vol. 6: Scientific and Philosophical Writings* (New Haven: Yale University Press, 1980), 31, 163.

know not whether I may recommend some of the productions of this Wilderness as rarities or novelties, but they are such as the place affords,” Winthrop wrote in 1670.⁶³

One of the coldest countries in the world

As northern naturalist-improvers continued to survey the region through the eighteenth and nineteenth centuries, they still hoped to uncover new information, but they seldom regretted being able to document a cultivated landscape as one of its most outstanding features. There were strong opinions to the contrary. The generally “oblique and unworthy opinion” of New England, wrote Yale president Timothy Dwight, “reaches every thing ... the very country, which they inhabit, and even the soil, and climate of that country. The climate is supposed to be inhospitable, and the soil barren.”⁶⁴

American Husbandry, the widely circulated description of agriculture in North America published in 1775, disparaged “all these northern colonists” who had failed to establish a prosperous rural economy. The anonymous (likely British) author predicted that:

This is, and ever will be, the consequence of colonizing in such northern latitudes, where agriculture must ever be carried on with feebleness; where the climate is to the last degree rigorous; and where every spot is inhospitable and frigid. To plant colonies in such situations, is acting

⁶³ “An Extract of a Letter, Written by John Winthrop,” (1670) *PTRS*.

⁶⁴ Timothy Dwight, *Travels in New England and New York* 4 vols. (New Haven, 1821), V1: 105.

contrary to every rational idea of colonization.⁶⁵

He also pitied the “northern coasts of Main and Sagadahock,” because they were “under the fatal influence of that freezing climate, which is bad enough in the south parts of New England but here approaches to the severity of Nova Scotia,” (“though,” he charitably added, “not so much involved in fogs”).⁶⁶ Anyone considering emigration to Nova Scotia was strongly warned that its climate was “of a severity that is dreadful to newcomers.” Readers of *American Husbandry* could learn that in Nova Scotia’s seven month-long winters:

the inhabitants are shut up in their houses, and ... lead a miserable life; are almost in as torpid and lifeless state as the vegetables of the country; ... Such a degree of cold as is then felt benumbs the very faculties of the mind, and is nearly destructive of all industry. ... Such is the climate; it is bad almost in excess.⁶⁷

The idea that the northern colonies experienced very cold winters was confirmed by decades of observations. Samuel Vetch, an agent for Nova Scotia angered by metropolitan neglect of the colony’s British garrison during a hard winter of deep frosts and abundant snowfall in 1714-15, complained that the men were given uniforms without lining that seemed “rather calculated for the Torrid zone than the Inhabitants of one of the Coldest countrys in the world.” According to his informants (Vetch was in London),

⁶⁵ *American Husbandry: Containing an Account of the Soil, Climate, Production, and Agriculture ...* (London: J. Bew, 1775), 13-14.

⁶⁶ *American Husbandry: Containing an Account of the Soil, Climate, Production, and Agriculture ...* (London: J. Bew, 1775), 49-50. As one historian has noted, “The northern colonies as a whole after 1763 supplied problems, not profits.” Peter Marshall, “British North America, 1760-1815,” in *Oxford History of the British Empire: The Eighteenth-Century* ed. P.J. Marshall (New York: Oxford University Press, 1998), 372-393, quote on 376.

⁶⁷ *American Husbandry*, 1-3.

soldiers were living “upon the Levell with the slaves in the neighbouring Colony of New England,” a compelling comparison since, he wrote, “it would be very hard to confine a parish of men to a garrison in a colder and less plentiful country than New England.”⁶⁸ In January 1778, Charles Blagden wrote to Joseph Banks that he had observed the “extremes” of difference between England and New England’s weather, winds, and barometric pressure “struck me ... particularly in the winter.” “What an abominable climate!” he exclaimed at the end of that winter.⁶⁹

People were curious to know how friends and family who settled in New England or Nova Scotia could live in such conditions. Benjamin Vaughan’s brother-in-law in France wrote to him shortly after he moved to Maine, asking—

Now you have experienced the inclemencies of your Northern climate both in Summer & Winter I shall be desirous to know your opinion of it & whether you & my Sister Vaughan continue as much pleas’d with it, as when it was clad in the charms of novelty.⁷⁰

Outsiders’ notions about northern American winters could be extravagant among the educated as well as the simply uninformed, among Americans in the South as well as Europeans. Elizabeth Lichtenstein, who remained in Georgia after her Loyalist parents fled to Halifax during the Revolution, believed she would rather live in the arctic environments of Nova Zembla or Greenland than be “frozen to death” in Nova Scotia (after living in South Carolina, New York, Jamaica, and Scotland, she and her husband

⁶⁸ Samuel Vetch to the Lords of Trade, February 24, 1715, Folder L, MG1, v. 1520, NSARM.

⁶⁹ January 21, 1778, Blagden to JB, 167-169; March 26, 1778, 187, Sir Joseph Banks Correspondence, DTC, British Museum (Natural History).

⁷⁰ E.M. Bird to Benjamin Vaughan, October 15, 1798, Folder: Correspondence, October 15-30, 1798, Benjamin Vaughan Papers, MHS.

eventually joined her father in the “cooler climate” of Nova Scotia in 1806).⁷¹ Even emigrants from the Scottish Highlands—those forcibly evicted from their lands by improving reforms as well as Highlanders who wished to move across the Atlantic—were reluctant to go to northern colonies. The pamphlet *Seasonable Advice to the Landholders and Farmers in Scotland* printed in Edinburgh in the 1770s extolled “the wide and pleasant fields of North America” in general, but strongly discouraged emigration to Nova Scotia and Newfoundland in particular.⁷²

American improvers countered that the climate of the northern colonies was good for farming. It was “undoubtedly true,” wrote one improver in Nova Scotia, that he lived in “a country suited by Nature to the purpose of raising stock, as horses, black cattle, sheep, Hogs & c. Hay & Gras are raised here with much more ease than in many Countries.”⁷³ He cited the “notorious facts” that “no country produces better potatoes, turneps or carrots, or a greater quantity of each per acre. Flax, hemp, buck-wheat and indian corn succeed well; and the cyder made in Nova Scotia is not inferior to any in North-America.”⁷⁴ In some ways, the cold seemed beneficial for agriculture, for example in suppressing certain disease environments. Many observers thought that the cold explained why Hessian fly—which attacked American and British grain crops in the 1770s through the turn of the century—did not reach northern New England and Nova

⁷¹ Elizabeth Lichtenstein Johnston (1764-1848), [unpublished autobiography, n.d.], Almon Family Papers, Series B, NSARM.

⁷² J.M. Bumsted, *The People's Clearance: Highland Emigration to British North America, 1770-1815* (Winnipeg: University of Manitoba Press, 1982), quote on 15.

⁷³ A Farmer to Mr. Clark, Secretary of the Agricultural Society, [n.d.], Folder 5, item 26, MG1 v. 1664A-B, NSARM.

⁷⁴ *Letters and Papers on Agriculture: Extracted from the Correspondence of a Society Instituted at Halifax for Promoting Agriculture in the Province of Nova Scotia* (Halifax: John Howe, 1789), 9.

Scotia until the 1790s.⁷⁵ Even human fevers were kept at bay by “the peculiar Salubrity of our climate,” boasted the merchants of Halifax’s harbor.⁷⁶

Titus Smith, a clergyman and provincial surveyor in Halifax, maintained that though “there are certainly countries from which a prudent man would emigrate if possible the more sterile part of Nova Scotia is not one of them.” It was important to Anglophones in Nova Scotia that outsiders perceived the peninsula as a familiar and comfortable place, especially since skeptics of northern colonization discouraged emigration to the region by advertising its disadvantages and arguing that it would always be a burdensome dependant on the mother country. Smith complained that there was “no part of the British dominions whose soil and climate have been more misrepresented than those of Nova Scotia; which has been injurious to the Province in many respects.” The colony was “unlike Lapland or Sierra Leone”—examples of European colonies, he presumed, with undeniably acute conditions. Perhaps having in mind his own experience as a recent migrant from Connecticut, he knew that in clement Nova Scotia people did “not degenerate by the fault of the climate.”⁷⁷ In 1783 a Loyalist situated on a new farmstead in the fertile Annapolis Valley assured his former neighbors in Massachusetts

⁷⁵ William Strickland, *Journal of a Tour in the United States of America, 1794-1795*, ed. J. E. Strickland (New York: New York Historical Society, 1971), 204; S.H. Jeyes, *The Russells of Birmingham in the French Revolution and in America, 1791-1814* (London: George Allen, 1911), 231-232. See Philip J. Pauly, “Fighting the Hessian Fly: American and British Responses to Insect Invasion, 1776-1789,” *Environmental History* 7 (July 2002): 377-400; and Brooke Hunter, “Creative Destruction: The Forgotten Legacy of the Hessian Fly,” in Cathy Matson, ed. *The Economy of Early America: Historical Perspectives and New Directions* (University Park: Penn State University Press, 2006), 236-262.

⁷⁶ June 16, 1795, *The Royal Gazette and the Nova-Scotia Advertiser*.

⁷⁷ [n.d.], Titus Smith to James Clarke, NSARM, MG 1664; “Letter to the Agricultural Society,” *Nova Scotia Magazine* (February 1792). Despite colonists’ anxiety, Nova Scotia absorbed the most Scottish emigrants after 1783, predominantly Highlanders. James Horn, “British Diaspora,” *OHBE*, 32.

that life in Nova Scotia was good. Walnut and apple orchards flourished and the Indian corn harvest had been abundant that year.⁷⁸ Benjamin Vaughan reported from Maine to his parents in England that, the “climate is much better than is supposed by many at a distance,” and though it was decidedly “cold in winter ... in summer it is hot enough for Indian corn & melons in the open air.”⁷⁹

Improvers in southern New England were also anxious to correct the circulation of false—or at least pernicious—impressions of local nature. A Rhode Island improver disputed a “valuable treatise on husbandry,” which claimed that northern American soils froze too hard to bear winter cover crops like lucerne (alfalfa).

It may be so in the province of Maine where the author resides; but it is certain that on Rhode-Island, the lucerne bears the winter equally well with clover and other cultivated grasses ... It is probable it may be cultivated in any part of New-England, even in the coldest.”⁸⁰

Some writers distinguished between northern and southern regions of the Northeast, but most minimized the difference. A 1748 account, which included New England, Nova Scotia, Cape Breton, and Newfoundland in its geographical “description of the northern colonies,” claimed that “there is very little Difference in the Temperature of the Air, in the several Parts of New-England, so its several Products and aptness for different Improvements, vary but in a few Particulars” (though it noted that the “southernmost” areas were suited for growing grain and the northern were better for forestry, fisheries,

⁷⁸ Ruggles to Edward Winslow, July 17, 1783, MG 100, vol. 216, no. 15-17, NSARM.

⁷⁹ September 27, 1797, Benjamin Vaughan to Samuel and Sarah Vaughan, Carton 1, BV Papers, MHS.

⁸⁰ Asher Robbins, *An Address to the Society for the Promotion of Agriculture and other Useful Arts in the state of Rhode-Island and Providence Plantations at their annual meeting...* (Newport, RI: 1802).

and raising livestock).⁸¹ The NSSPA remarked that “our spring is indeed later than in countries that lie farther south; but countries which are north of us, and whose spring is later than ours, abound in provisions.”⁸² “Upon the whole,” the Loyalist Timothy Ruggles concluded about Nova Scotia, “I think the climate good & the soil capable of becoming the granary of any part of the continent to the Eastward of New York.”⁸³ A correspondent to the MSPA reported his surprising success with late harvests of potatoes and maize in New Hampshire and Maine, which were “so far North” that such crops were usually threatened by late summer and early fall frosts.⁸⁴

The domain of northern improvement

In both negative and positive claims about northern America’s weather, climate, and landscapes there was a persistent geographical ambiguity. Where and what was the North? North American naturalist-improvers referred to a ‘north,’ ‘northern country,’ or ‘northern climate’ without a consistent indication of what the boundaries were of this supposed territory. In Peck’s inaugural address at Harvard, he cautioned the “Friends of

⁸¹ [Otis Little], *The State of Trade in the Northern Colonies Considered, with an Account of their Produce and a Particular Description of Nova Scotia* (London, 1748), 34-35.

⁸² *Letters and Papers on Agriculture: Extracted from the Correspondence of a Society Instituted at Halifax for Promoting Agriculture in the Province of Nova Scotia* (Halifax: John Howe, 1789), 9.

⁸³ Ruggles to Edward Winslow, July 17, 1783, MG 100, vol. 216, no. 15-17, NSARM.

⁸⁴ April 8, 1815, David Waldron to MSPA, MSPA Box 15: Folder: 44, no. 41-50, MHS. On ecological distinctions between northern and southern New England, see William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York: Hill and Wang, 1983), 44, 50, 86-87.

the University” that he faced many challenges in attaining “a more perfect knowledge of the natural productions of our own country.” But what community did Peck have in mind when he referred to “our own country” or “this part of America”?⁸⁵ What were the spatial limits of the country over which naturalist-improvers claimed legitimate expertise?

Naturalist-improvers were likely unsure of how to encompass the changing political geography of European America. From the early seventeenth century, the northern colonies were constantly expanding—it made as much sense to imagine ‘New England’ as “North of North Virginia” as any more discrete territory. As a geographical history noted, after 1749, the year that Halifax was founded, Nova Scotia and New England were sometimes called North Virginia.⁸⁶ Geographical uncertainty was an ongoing issue, especially an issue for the British when they intermittently attempted to bring order to their colonial claims in New France.⁸⁷ After a series of inconclusive imperial contests over Acadia/Nova Scotia, in 1719 the British commissioned Paul Mascarene, a French-Huguenot engineer, to provide a description of the peninsula. To exempt himself from undue responsibility, Mascarene specified that his account portrayed the colony “according to the Notion the Britains have of it,” a territory that stretched,

⁸⁵ Box 2, HUG 1677, Folder Papers, 1805-07, WDP Papers, Harvard University Archives.

⁸⁶ William Douglass, *A Summary Historical and Political, Of the First Planting, Progressive Improvements, and Present State of the British Settlements in North America* 2 v. (Boston: Rogers and Fowle, 1749), 7.

⁸⁷ During the crown’s brief revocation of the Massachusetts Bay Colony’s proprietary charter from 1684 to 1691, the Dominion of New England encompassed all British territories from the Delaware River to New France.

from the Limits of the Government of Massachusetts Bay in New England or Kennebeck River, about the 44th degree North latitude to Cape des Roziers on the South side of the entrance of the River of St. Lawrens in the 49th degree of the same latitude, and ... from ye Easternmost part of the Island of Cape Breton to the South side of the river of St. Lawrens.

Since “the Boundaries having as yet not been agreed on between the Brittish and French Governments in these parts,” he maintained that “no just ones can be settled in this Description.”⁸⁸ While territorial sovereignty remained disputed, the twinned goals of colonization and improvement encouraged conceptions of the province’s future as if British notions of it would prevail. A group of merchants wrote to the Board of Trade in 1717, hoping to encourage “a Colony of your Majesty’s Subjects” in the area “by the french call’d Accadie,” which “is capable of great Improvements.” According to the merchants, this was “a large Country upon the Continent of North America, adjoining Westward to New England, having on the North the River and Gulph of Canada, and is surrounded on the South & East by the Ocean.”⁸⁹

But even when jurisdiction in British America was more certain, the borders of the northern colonies were vague. When Arthur Young admonished the British government to divest from “those commonly called the Northern Colonies,” he clarified the qualification by adding “that is, north of tobacco.”⁹⁰ In his *American Geography*, Jedidiah Morse simply divided the new United States into northern and southern parts, but was more equivocal about the representation of the North. While he named the South Carolina man responsible for the book’s map of the southern states—the “most accurate

⁸⁸ Paul Mascarene, Description of Nova Scotia, 1720/21, MG1, v. 1520, Folder P, Mascarene (Engineer), NSARM.

⁸⁹ P. Medows, J. Bruce, and J. Merrill to B of T, June 22, 1717, MG1, v. 1520, Folder M, NSARM.

⁹⁰ Arthur Young, *Annals of Agriculture and Other Useful Arts* 1: 1 (1784).

yet published respecting that country”—he attributed the map of northern states to “the Engraver,” a map “chiefly designed to give the reader an idea of the relative situation, and comparative extent of the several states and countries comprehended within its limits.”⁹¹ Morse warned his readers in the preface that his work was a provisional attempt to describe the new political geography based on “a vast variety” of “widely scattered” materials, including his own travel notes and “correspondence with Men of Science” in several states.⁹²

Morse also wrote shorter descriptions of places outside the nation, including the provinces of British North America. Because he assumed that British North America and the United States constituted not just separate political but also environmental entities, his northern and southern divisions of America were discrete to the United States. But there were unresolved boundary issues that made some geographical units in the northern United States less distinct than others. New England was comprised of five states—Connecticut, Massachusetts, New Hampshire, Rhode Island, and Vermont, “bounded, north by Canada; east by Nova-Scotia and the Atlantic Ocean; south by the Atlantic and Long Island Sound, and west by New York.” According to Morse, Maine, which was a district of Massachusetts, also encompassed lands in New Brunswick and Nova Scotia.⁹³

⁹¹ Jedidiah Morse, *The American Geography: Or, A View of the Present Situation of the United States of America*, 2nd edition (London: 1792 [1789]), vi.

⁹² Jedidiah Morse, *The American Geography: Or, A View of the Present Situation of the United States of America*, 2nd edition (London: 1792 [1789]), ix.

⁹³ Perhaps Morse was unaware of the recent boundary settlement, in 1784, between the District of Maine and New Brunswick. Morse, *American Geography*, 140, 193. In the 1780s there had also been plans to establish a New Ireland colony in the area between the Penobscot and St. Croix Rivers, a project that was nullified during the Treaty of Paris negotiations. David Demeritt, “Representing the ‘True’ St. Croix: Knowledge and Power in the Partition of the Northeast,” *WMQ* 54: 3 (July 1997), 516.

Morse's attempt to combine natural history and political geography especially clouded notional distinctions like north and south when his views were unabashedly partisan. Assessing the weather in various northern places, he wrote that "none in the world [were] more healthy" than Vermont's inhabitants, who "generally enjoy a serene sky and a keen, cold air." Though Maine's climate was less moderate—the "heat in summer is intense and the cold in winter equally extreme"—it was nonetheless "very healthful" since evidently "many of the inhabitants live[d] to ninety years."⁹⁴ By contrast, Morse was alarmist in describing Nova Scotia's climate, just to the northeast, and by his own definition part of, Maine. He warned readers that near-constant fogs made the province "unhealthy for the inhabitants," and besides, "four or five months it [was] immensely cold."⁹⁵

Political change was not the only reason that the North was an unstable concept in the eighteenth century. Improvers were not necessarily aiming for a precise depiction of the region. As Jeremy Belknap told his readers: "It is not my intention to write, systematically, the natural history of the country, or to describe with botanical accuracy, the indigenous vegetables which it contains; but briefly to take notice of such as are we endowed with the most."⁹⁶ Late Enlightenment writers endorsed the veracity of topographic surveys or natural history accounts through a rhetoric of accuracy and precision, but they were aware that these were relative values and that "geographical

⁹⁴ Morse, *American Geography*, 197, 470.

⁹⁵ Morse, *American Geography*, 475. Morse did not provide information on climate in his entry on Quebec.

⁹⁶ Belknap, *The History of New-Hampshire*, 120.

knowledge [was] open and subject to correction.”⁹⁷ Especially if they saw signs of improvement, successive surveys would surely document progressive changes that would make existing maps out-dated. Through the late eighteenth and early nineteenth centuries, writers equivocally characterized the geographical units of North America, reflecting historical instabilities as well as their expectations for imminent change.

In this period, many natural historians retreated from the ambition to describe global biogeography and focused instead on finer-grained regional or local descriptions.⁹⁸ Some examples included Thomas Pennant’s *Indian Zoology* (1769) and *Arctic Zoology* (1784-5), Gilbert White’s *A Natural History of Selbourne* (1789)—much of which consists of letters from White to Pennant—as well as the natural histories of colonies and states in North America, such as Belknap’s history of New Hampshire (1784), and Williams’s history of Vermont (1794)—which had been a distinct political unit for only three years.⁹⁹

Belknap and Williams’s natural histories followed the conventions of chorography—the practice of describing characteristic features at the scale of a region (as opposed to geography, at the scale of the Earth or cosmography, of the Universe). Chorography was a practice of surveying resources—natural or otherwise, encompassing

⁹⁷ Michael Bravo, “Precision and Curiosity in Scientific Travel: James Rennell and the Orientalist Geography of the New Imperial Age, 1760-1830,” in Jas Elsner and J.P. Rubies, *Voyages and Visions: Towards a Cultural History of Travel* (London: Reaktion Books, 1999), 162-183, quote on 178.

⁹⁸ Peter J. Bowler, *The Norton History of the Environmental Sciences* (New York: Norton, 1992), 176-177.

⁹⁹ Georges Louis Leclerc, comte de Buffon, *Natural History, General and Particular*, trans. W. Smellie (London: Strahan and Cadell, 1781 [1761]), 127-129; Lisbet Koerner, *Linnaeus: Nature and Nation* (Cambridge: Harvard University Press, 1999), 120; Charles Withers, *Placing the Enlightenment: Thinking Geographically about the Age of Reason* (Chicago: University of Chicago Press, 2007), 122-123; Janet Browne, *The Secular Ark: Studies in the History of Biogeography* (New Haven: Yale University Press, 1983), 1-31.

genealogies of elite families, surveys of private estates, the local history of a village or county, as well as natural historical descriptions. Although Belknap and Williams's chorographies were squarely defined by state boundaries and seemed to describe the coincidence of natural features and political geographies, they offered instead synecdochical accounts of some natural productions observed within the borders of a geographical unit to represent the natural history of the whole. Belknap's *History of New Hampshire*, for example, primarily described some aspects of the White Mountains that fell within the state's borders. Despite longstanding uncertainty about political sovereignty in Nova Scotia, surveyors described the weather and agricultural landscapes encompassed within provisional borders as if they were uncontested. This contents-in-a-container approach was typical of natural historical surveys at the local, regional, national, and imperial scales in the eighteenth century, so typical, in fact, that it made even very new political borders seem innate.

As historical geographer Charles Withers has written about chorography in early modern Scotland: "these practices had a political significance in that they sought to give local families and features ancient roots and wider context."¹⁰⁰ In the early North American context (and possibly other colonial situations), the political or ideological aims of regional description emphasized the improvement and future potential of a place. This paradoxical invention of a forward-looking tradition was part of the Western discovery narrative that long dominated ideas of the New World, from the Renaissance through the twentieth century. It was implicit in eighteenth century North American improvement literature, including travel narratives, gazetteers, and natural histories,

¹⁰⁰ Charles Withers, "Reporting, Mapping, Trusting: Making Geographical Knowledge in the Late Seventeenth Century," *Isis* 90: 3 (Sept. 1999): 497-521, quote on 500.

which hardly mentioned an indigenous presence or ignored pre-contact history altogether (for example, Morse wrote in his entry on New Hampshire: “There are no Indians in the state. Their former remains of scattered tribes, retired to Canada many years since.”).¹⁰¹ Improvers in settler colonies revised this narrative by emphasizing their expertise and the role of science in uncovering the resource potential of insufficiently exploited lands.

Colonial or early national histories could seem to be about an unchanging natural world, as when Samuel Williams stated that, “in most productions of nature, the subject is fixed, and may always be found and viewed in the same situation.” But improvers showed that this stasis was deceptive. Through “a steady course of observation,” they were able to “discover and ascertain the laws by which [nature is] governed,” laws which would ultimately help guide land use and predict “the situation [nature] will assume in other periods of time.” Williams claimed that this process was evident in the instability of Vermont’s climate.

Instead of remaining fixed and settled, the climate is perpetually changing and altering, in all its circumstances and affections; And this change instead of being so slow and gradual as to be a matter of doubt is so rapid and constant, that it is the subject of common observation and experience. It has been observed in every part of the United States; but is most of all sensible and apparent in a new country, which is suddenly changing from a state of vast uncultivated wilderness, to that of numerous settlements, and extensive improvements.¹⁰²

It is similarly unclear in Belknap’s natural history of the White Mountains, which focused on the economic botany of the region, whether he intended it to account for environmental stasis or change. Chorographies that placed so much emphasis on

¹⁰¹ Morse, *American Geography*, 164.

¹⁰² Williams, *Natural and Civil History of Vermont*, xi.

improvement were descriptions of prescriptive or ideal land use, rather than transparent reflections of the *status quo*. The geography of eighteenth-century natural histories was therefore necessarily imprecise and provisional, particularly in colonial contexts when or where territorial sovereignty was uncertain. Since regional surveys of New England and Nova Scotia were composites of past, current, and projected features, they should be read as intentionally ambiguous documents of the northern American landscape. The combination of these features further suggests that the regions naturalists described were as much an act of fiat as that of political spaces.

The universal and the particular

The ideology of improvement allowed settlers to imaginatively transcend the constraints of political boundaries and posit geographical concepts in more expansive and adaptable terms. Scientific improvers everywhere were keen to transcend the geographical distances that separated them from each other by working to create landscapes that reflected their unified ethos and material standards. Through correspondence they shared rhetorical conventions (to identify themselves to each other), scientific advice (which was ideally universally applicable), and organic materials and tools (to create matching landscapes). They hoped that seeds and techniques could travel, that they might be planted in all their correspondents' backyards.

As the Charleston, South Carolina naturalist David Ramsay suggested to Morse: “Would it not be better to describe the natural history of the globe by zones than in the common way of following the political division? e.g. to describe the animals minerals face of the country climate & etc. of the torrid zone & of the other zones would be in my opinion better than to describe the animals minerals & etc. of Egypt Abyssinia & etc.”¹⁰³ Perhaps in response to Ramsay, in the second edition of *American Geography* Morse explained to his readers that the globe was divided into torrid, temperate, and frigid zones and further into climates, ordered by lines of latitude. He schematized the thirty climates of “our habitable world” with a list of cities or regions that fell into each division—New England was in the 7th climate with Rome, Constantinople, and the Caspian Sea; Nova Scotia and the rest of British North America along with Paris and Vienna, were in the 8th climate (see Figure 1).¹⁰⁴

¹⁰³ David Ramsay to Jedidiah Morse, November 30, 1787, in , in Robert L. Brunhouse, “David Ramsay, 1749-1815: Selections from his Writings,” *Transactions of the American Philosophical Society* 55: 4 (1965), 116-117.

¹⁰⁴ Morse, *American Geography*, 5-8.

T A B L E.

Names of countries and remarkable places, situated in the respective climates, north of the equator.

Within the first climate lie,

Climate.	Length day.	Latitudes in which respective climates begin and end.		
		d.	m.	
1	12½	8	25	1 The Gold coast in Africa, Cayenne and Surinam in S. Amer.
2	13	16	25	2 Abyssinia, Siam, Madras, Darien, Barbadoes.
3	13½	23	50	3 Mecca, Bengal, Canton, Mexico, Jamaica, Guadalupe.
4	14	30	25	4 Egypt, Delhi, Canary Isles, E. Florida, Havana.
5	14½	36	25	5 Gibraltar, Jerusalem, Nanking, Georgia, and Carolina.
6	15	41	22	6 Lisbon, Madrid, Asia-Minor, Virginia, Maryland, Philadel.
7	15½	45	29	7 Rome, Constantinople, Caspian Sea, New-England.
8	16	49	01	8 Paris, Vienna, Nova-Scotia, Newfoundland, Canada.
9	16½	52	00	9 London, Flanders, Prague, Dresden, Cracow.
10	17	54	27	10 Dublin, Warsaw, Holland, Hanover, Labrador.
11	17½	56	37	11 Edinburgh, Copenhagen, Moscow.
12	18	58	29	12 South Part of Sweden, Siberia.
13	18½	59	51	13 Orkney Isles, Stockholm.
14	19	61	18	14 Bergen in Norway, Peterburgh in Russia,
15	19½	62	25	15 Hudson's Straits.
16	20	63	22	16 South Part of West Greenland.
17	20½	64	06	17 Drontheim in Norway.
18	21	64	49	18 Part of Finland in Russia.
19	21½	65	21	19 Archangel on the White Sea, Russia.
20	22	65	47	20 Hecla in Iceland.
21	22½	66	06	21 Northern Parts of Russia and Siberia.
22	23	66	20	22 New-North-Wales in N. America.
23	23½	66	28	23 Davis's Straits in ditto.
24	24	66	31	24 Sannoeida.
25	24 month	67	21	25 South Part of Lapland,
26	24 do.	69	48	26 West Greenland.
27	25 do.	73	37	27 Zemle Australis.
28	24 do.	78	30	28 Zemle Borealis.
29	25 do.	84	05	29 Spitzbergen, or E. Greenland.
30	26 do.	90	0	30 Unknown.

Figure 2. Climate divisions north of the equator. From Jedidiah Morse's *American Geography*.¹⁰⁵

However, his entries on local climates in particular places were more discretionary than this systematic table implies. *American Geography* did not provide a table of the southern equatorial zone, interrelate the five climatic zones with the thirty latitudinal divisions, or use a biogeographical schema to organize the individual state narratives in his work. It may be that Morse only superficially addressed Ramsay's concern in part because there was considerable debate about the relationship between climate and latitude, especially the reliability of latitude for predicting local environmental phenomena.

¹⁰⁵ Morse, *American Geography*, 8.

From the fifteenth century, European explorers and colonists noted the surprising difference in weather patterns in similar latitudes on either side of the Atlantic Ocean. In spite of these encounters, latitude continued to figure into theories of climatic determinism through the early modern period and beyond.¹⁰⁶ In the eighteenth century, Linnaeus's public failures with acclimatizing tropical plants in Sweden convinced many naturalists that plants were not infinitely adaptable to all places.¹⁰⁷ The seeds of warmer climate species would not develop with limited heat and daylight or survive in soil hardened by frost. Bad experiences with unsuccessful transplants and meager harvests contributed to the emerging idea that the environmental conditions of places in the same latitude could be significantly different across the world. Samuel Deane, the author of the agricultural dictionary, *The New-England Farmer*, agreed with the Scottish improver Adam Dickson, who mocked anyone "so foolish to suppose, that all kinds of plants can be cultivated with equal success in all climates."¹⁰⁸

Manasseh Cutler believed that while the general principles of nature were the same everywhere, he thought that the natural history of Massachusetts would "vary from

¹⁰⁶ Karen O. Kupperman, "The Puzzle of the American Climate in the Early Colonial Period," *AHR* 87:5 (1982), 1262-1289; Jan Golinski, "American Climate and the Civilization of Nature," in Delbourgo and Dew, *Science and Empire in the Atlantic World* (New York: Routledge, 2008), 153-174.

¹⁰⁷ There were problems with acclimatization even within climatic zones, infamously Banks's breadfruit scheme in the West Indies. Also it seems that as President of the Royal Society Banks was not particularly interested in northern climates, especially northern North America, at least based on the relative lack of material in the Banks Collection. In his early trips to Newfoundland and Labrador in 1766, he was impressed by the quality (if not the quantity or size) of garden produce, but his trip to the South Pacific seems to have convinced him that even England's climate was too "changeable" to compete with the botanical potential of tropical environments. Patrick O'Brien, *Joseph Banks: A Life* (London: Harvill Press, 1987), 52-57, 91, 128.

¹⁰⁸ Samuel Deane, *The New-England Farmer, or, Georgical Dictionary* (Worcester: Isaiah Thomas, 1790), 58. Quote from Adam Dickson, *A Treatise of Agriculture* (Edinburgh, 1762).

that of Middlesex, England” and the characteristics of the Massachusetts coast from that in its interior.¹⁰⁹ Settlers learned through personal experience that the weather, land types, and soil quality within the Northeast were also remarkably variable, even between neighboring towns or in a single tract—a “complex patchwork” landscape in William Cronon’s words.¹¹⁰ Deane drew attention to successful experiments with particular crop rotations recommended by European improvers, but cautioned farmers that specific advice could not always be generalized, since “soils differ so greatly, even in fields which lie contiguous, that the course of crops which is suitable for one, would be unsuitable for another.”¹¹¹ Deane suggested that northern agricultural development was lagging, in part, because the scientific methods conscientious farmers employed were imported from abroad and such methods were “not perfectly adapted to a region so differently circumstanced.”

A farmer must pay due attention to the climate in which he is situated, or he will not carry on agriculture to advantage. He must govern all his schemes of management by the peculiarities of the climate: Because that which proves successful in one, will not do so in another.

Rather than adopt foreign techniques wholesale from “strangers,” farmers “west of the Atlantick” would benefit more from the local experience of “their countrymen.” (He also added the disclaimer that to select the most appropriate improving methods, ultimately “every judicious farmer must judge for himself.”)¹¹²

¹⁰⁹ Cutler and Cutler, *Life, Journals and Correspondence*, 80-82.

¹¹⁰ Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York: Hill and Wang, 2003, [1983]), 31.

¹¹¹ Deane, *The New England Farmer*, 108; Belknap, *The History of New-Hampshire*, v. 3: 120.

¹¹² Samuel Deane, *The New-England Farmer, or, Georgical Dictionary* (Worcester: Isaiah Thomas, 1790), 45.

But what distinguished strangers from countrymen? Farmers situated ‘west of the Atlantic’ could mean the entire New World. Deane may have had the new United States in mind when he referred to his countrymen, but his 1790 dictionary was ostensibly addressed specifically to the New England farmer. Was New England a region? Deane’s dictionary provided no direct answer and there were no discrete entries for region or New England.

Deane’s entry for ‘climate’ was also ambiguous on geographical distinctions (in part because its logic was somewhat circular). He complained that, with the exception of geographers—who used the term to designate the space between lines of latitude—climate was “often used less accurately, to signify a region, or large tract of land.” Because a “very small distance sometimes makes a very great difference in climate,” Deane called on his readers to record the weather and seasonal changes in their vicinity. Presumably this empirical data would eventually be compiled and summarized to characterize the patterns of what Deane persisted in referring to as “our climate.”¹¹³

If improvers’ proximate objectives were to catalog observable characteristics of local landscapes and weather patterns, judge them against comparable climates, and to improve upon them, ultimately, they meant to integrate themselves into the geography of the cosmopolitan world. As Gordon Wood has argued,

The many state histories written in the aftermath of the Revolution were anything but celebrations of localism. Indeed, they were testimonies to American cosmopolitanism; they were designed to ‘wear away prejudices—rub off asperities and mould us into an homogenous people.’¹¹⁴

¹¹³ Deane, *The New England Farmer*, 58-66. [Citations for American climate]

¹¹⁴ Gordon Wood, *The Radicalism of the American Revolution* (New York: Vintage, 1991), 221-222 (David Ramsay quoted). These generalizations are evident in Jefferson’s

Deane's georgic dictionary, like the local 'civil and natural' histories published by Belknap, Cutler, and Williams aimed to be comprehensive but they were especially interested in compiling knowledge of local nature insofar as it might contribute to ongoing intellectual debates about—and figure their own localities in—the history and future of the civilized world. Northern improvers wrote surveys and narrative histories of regional nature to include it in the temperate zone with other civilized societies.

Through the Renaissance, 'the northern countries' could also be an allusion to the Roman imperial division of Europe into barbarian north and civilized south. European intellectuals in the sixteenth through eighteenth centuries had worked to revise the classical geographical idea that civilization was centered in Rome and to reverse the connotations of north and south.¹¹⁵ As capital and long-distance trade networks increasingly shifted from the Mediterranean to the Atlantic Ocean, northwestern European cities became centers of learned culture and this change was to some extent reflected in emerging medical and biogeographical understandings of climate.¹¹⁶ Genteel

Notes on the State of Virginia, which probably provided the model for the northern state histories, including as well, James Sullivan, *History of the District of Maine* (1795).

¹¹⁵ Larry Wolff, *Inventing Eastern Europe: The Map of Civilization in the Mind of the Enlightenment* (Palo Alto: Stanford University Press, 1997), 4-5, 318. Wolff's argument that the Enlightenment reoriented the north-south division of civilization/barbarism to east/west is not entirely convincing.

¹¹⁶ On eighteenth-century images of northern Europe, see Jonsson, *The Enlightenment in the Highlands*, 87-90; and Karen Oslund, "Imagining Iceland: Narratives of Nature and History in the North Atlantic," *British Journal of the History of Science* 35 (2002), 313-334. On Enlightenment biogeography, see Charles Withers, *Placing the Enlightenment: Thinking Geographically about the Age of Reason* (Chicago: University of Chicago Press, 2007); Janet Browne, "Biogeography and Empire," in *Cultures of Natural History*, eds. Nicholas Jardine, James Secord, and Emma Spary (New York: Cambridge University Press, 1996), 305-321; and Browne, *The Secular Ark: Studies in the History of Biogeography* (New Haven: Yale University Press, 1983), 1-31.

settlers in America, especially the northern colonies, were keen to associate themselves with—and thereby to reinforce—this newly positive connotation. This association was plausible precisely because naturalist-improvers encouraged a plastic concept of the region.

Most simply, the North could refer to the compass point or to the hemisphere above the tropic of cancer. In common usage though, the North—like most geographical points of reference—was located relative to the person invoking it, as the English referred to Scotland or the Nordic “cold countries” as northern.¹¹⁷ In this sense, natural historians could be associated either personally or through their research with the North. An Oxford professor writing in 1737 to a colleague for a replenishment of “North-country plants” for the university’s garden, mentioned in this connection a recent visit by Linnaeus, who had recently published a *Flora Lapponica*. The professor proclaimed: “A new Botanist is arisen in the North,” who demonstrated a “thorough insight and knowledge of Botany” (though he was skeptical of the Swede’s “system”).¹¹⁸

Since latitude often failed to prove correspondences between European societies on either side of the Atlantic, in the eighteenth century naturalist-improvers turned to determining how geographical regions defined by climatic patterns compared with one another, especially in terms of their natural advantages. If techniques and seeds could not travel everywhere, at least they could be transplanted and acclimatized in those places thought to have roughly analogous environments within the golden mean. The northern

¹¹⁷ James Lind to Carl Linnaeus, Sept. 23, 1754, in James Smith, *A Selection of the Correspondence of Linnaeus and other Naturalists* v. 2 (New York: Arno Press, 1978), 472. Oslund, “Imagining Iceland.”

¹¹⁸ Johan Dillenius to Dr. Richardson, Sept. 8, 1737 in James Smith, *A Selection of the Correspondence of Linnaeus and other Naturalists* v. 2 (New York: Arno Press, 1978), 153-154.

countries of the temperate zone were not a contiguous territorial unit, but a variety of constituents in a fragmented global space.¹¹⁹

Northern North America was sometimes compared to Sweden, perhaps in part because of Linnaeus's well-known northern acclimatization schemes. William Peck noticed physical similarities between the two places. He compared the steep northern coast of Jutland to the "White Mountains in New Hampshire," because it was "covered like them with dark brown moss" and wrote to his sister: "I must tell you ... that next to my own country I love Sweden, because it so resembles it."

Unsurprisingly, improvers in British America most frequently pointed to the environmental resemblances between the Northeast and the British Isles. Two speculators from York, England, for example, judged the weather in Nova Scotia "pretty near that of England." A Halifax improver likewise declared that "England is like this a Cold Northern Climate."¹²⁰ The Nova Scotia agricultural society suggested that "there is nearly the same difference between our spring and that of New York," which was something like "spring in Middlesex and that of Yorkshire, in England." Despite that Yorkshire was "in Latitude 52 degrees" its farmers were prosperous and so, it followed, "that the same quantity of land, acre for acre, in Nova Scotia, will maintain as many

¹¹⁹ Lauren Benton argues that even though early modern empires claimed sovereignty over vast contiguous territories, imperial control and geographical knowledge was usually limited to regions of "narrow bands, corridors, and enclaves." Benton, "Legal Spaces of Empire: Piracy and the Origins of Ocean Regionalism," *Comparative Studies in Society and History* 47: 4 (October 2005): 700-724; and "Spatial Geographies of Empire," *Itinerario* 30: 3 (2006), 19-34.

¹²⁰ Robinson and Rispin, *Journey through Nova-Scotia*, 22; [Fragment of a letter to James Clarke, Secretary of NSSPA], [n.d.], FOLDER 5, item 27, MG1 v. 1664A-B, NSARM.

people, yield as much corn, as in New York, New Jersey, Pennsylvania, or any of the old Colonies.”¹²¹

Northern American improvers were struck most of all by descriptions of Scotland’s comparative advantages. If Scottish projectors hoping to gentrify their country’s marginal lands were inspired by prosperous plantation and settlement colonies across the Atlantic, northern American improvers drew on the voluminous published matter of the British Enlightenment, particularly Scottish authors. Accounts of projecting tours of the Highlands (like those of Thomas Pennant, John Sinclair, and Samuel Johnson and James Boswell), became the models that northern American writers frequently emulated through thinly disguised or outright plagiarism. Much of Deane’s supposedly home-grown advice, after all, was transplanted directly from Scottish and Irish agricultural literature.

The benefits of climate change

In spite of northern improvers’ best efforts, some comparisons with other parts of the world did not always reflect positively on New England or Nova Scotia. Though many northern improvers downplayed the inconveniences of the natural environment, occasionally they conceded that it was less “propitious” to plantation agriculture than the

¹²¹ *Letters and Papers on Agriculture: Extracted from the Correspondence of a Society Instituted at Halifax for Promoting Agriculture in the Province of Nova Scotia* (Halifax: John Howe, 1789), 9.

southern colonies and that much of the patchwork landscape was “poor, rough, stoney, uneven.”¹²² The NSSPA acknowledged that the peninsula’s Atlantic coastlands were uncultivable since they were “in many places ... stoney for some distance from the shore, which is a continued range of granite, and schistus, or coarse slate rock.”¹²³ Improvers were especially troubled by the variability of the weather, which could perceptibly fluctuate on a daily, seasonal, and yearly basis. In Vermont, Williams noticed “the seasons are much changed and the weather is become more variable and uncertain.”¹²⁴ Dwight wrote that, throughout New England, “the changes from heat to cold, and from cold to heat, are ... sudden, and violent.”¹²⁵

Some American writers concurred with Europeans who postulated “the greater coldness of the American climate,” compared to other countries in the same latitudes.¹²⁶ Timothy Dwight asserted that “the great distinction between the Climate of New-England and that of European Countries ... is the peculiar coldness of its winters.” He was unsure whether the summer heat was more intense, but “the cold, at times, is

¹²² Jared Eliot, *Essays Upon Field Husbandry in New England and Other Papers, 1748-1762*, ed. Harry J. Carman and Rexford G. Tugwell (New York: Columbia University Press, 1934), 19.

¹²³ *Letters and Papers on Agriculture: Extracted from the Correspondence of a Society Instituted at Halifax for Promoting Agriculture in the Province of Nova Scotia* (Halifax: John Howe, 1789), 9.

¹²⁴ Williams, *Natural and Civil History of Vermont* (1794), 65.

¹²⁵ Timothy Dwight, *Travels in New England and New York* 4 vols. (New Haven, 1821), VI: 58. More dramatic climate changes occurred on greater time scales. At the tail end of the Little Ice Age, early New England weather was significantly colder, particularly in the second half of the eighteenth century, than average for the region over the long term though perceptions did not always reflect this fact. For a summary of regional historical climate studies, see Gregory A. Zielinski and Barry D. Keim, *New England Weather, New England Climate* (Hanover: University of New England Press, 2003).

¹²⁶ Samuel Williams, *A Natural and Civil History of Vermont* (Rutland: 1794), 24.

unquestionably much greater.”¹²⁷ For most people, the severity of the winter was undeniable. The onset of winter prompted Massachusetts clergyman Ebenezer Parkman to pray for a mild season. With the “Air pritty Cold” he became “very sollicitous and concern’d ab’t Keeping for my Stock.” “It fills many (I suppose) w’th deep Concern,” he wrote in his diary at the end of November in 1749. Hard frost could continue through spring—as it did in Gloucester, Massachusetts in March of that year when it was cold enough, wrote another pastor, “so as to freeze my Ink on the Table” (most farmers who kept journals only wrote entries during the more concentrated working months of summer).¹²⁸ For farm workers in Nova Scotia, seasonal extremes meant they were “tormented all the summer with mus keetoos and almost frozen to dead in the winter.”¹²⁹

Even the most carefully tended gardens suffered from long winters and summer cold snaps. After the “uncommonly long and severe” winter of 1809, when “snow had been extremely deep” and lingered “in considerable quantities with ice in the Boston streets,” millionaire Peter Chardon Brooks was disappointed by the extensive damage to his apple orchard from burrowing rodents. When unusually low temperatures persisted into late July, all of his crops “naturally, [were] injured by the very cold season.” At least he was further south than Quebec—there, he noted a few years later, a similarly chilly spring and summer brought June snow.¹³⁰

But northern improvers were optimistic that the practical application of natural history could address what they argued were essentially minor deficiencies. The engineer

¹²⁷ Dwight, *Travels in New England and New York*, 58.

¹²⁸ March 18, 1749, Samuel Chandler Diaries, MHS.

¹²⁹ June 30, 1774, Luke Harrison to William Harrison, MG1 v. 427, Folder #178-220 (187), NSARM.

¹³⁰ April-July, 1809; May-June, 1816, Journals, Peter Chardon Brooks Papers, MHS.

Paul Mascarene was certain that though Nova Scotia's "climate is cold and very Variable even in ye Southernmost part of this Country, and is subject to long and severe Winters, the soil, notwithstanding this, may be easily made to produce all the supplys of life for the Inhabitants."¹³¹ Connecticut improver Jared Eliot insisted that "counteracting th[e] natural defect" of New England soil and topography, "renders ye exertions & ingenuity of the cultivator infinitely more important."¹³² For inspiration, northern Americans could look to the success of environmental engineering in northern Europe. Melons grew to "a great size" in Arkhangelsk and the botanical garden of Catherine the Great in St. Petersburg flourished under a "wintry sky."¹³³ Scottish improvers had heroically ventured plantations in the rugged Highlands (even if their principal triumphs with rhubarb and larch were dubiously lucrative).¹³⁴ Sweden was especially admired by the NSSPA, whose members marveled at how Sweden,

a country which we would think scarcely habitable, or worth cultivation, abounds not only in the necessaries, but in all the conveniences and comforts of life. Sweden is one of the most northern and barren countries in Europe. Stockholm, the capital, is nearly in the latitude of 60 degrees—almost one thousand miles to the north of Halifax. The whole kingdom is overspread with rocky mountains and lakes, having little land capable of culture, and is subject to all severities of so high a Latitude. But Sweden

¹³¹ Paul Mascarene, Description of Nova Scotia, 1720/21, MG1, v. 1520, Folder P, Mascarene (Engineer), NSARM.

¹³² John Lowell to MSPA, June 7, 1813, MHS: Ms. N-517: MSPA Papers, Box 19, Drawer D: Folder 1.

¹³³ Jared Eliot, *Essays Upon Field Husbandry in New England and Other Places, 1748-64* ed. Harry Carman, et al. (New York: Columbia University Press, 1934), 15; Peck, "Introductory Botanical Lecture,"; and Peck to Lydia Peck, April 1806, WDP, Box 2: Folder 1805-07. On natural history and improvement in Russia, see Willard Sutherland, *Taming the Wild Field: Colonization and Empire on the Russian Steppe* (Ithaca: Cornell University Press, 2006), especially 55-96

¹³⁴ On rhubarb and larch projects in the Highlands, see Jonsson, *The Enlightenment in the Highlands*, 246-290.

has been fortunate in producing a number of eminent men, who made great improvements in Natural History—particularly in Agriculture.¹³⁵

Samuel Williams, writing to Banks from northern Vermont, felt sure that severe winters would soon be a thing of the past. His “experiments and observations” of the ground temperatures from southern Connecticut to the Quebec border indicated “the very rapid alteration ... taking place in the climate of the country ... I am convinced that the heat of the earth has been gradually increasing.”¹³⁶ Signs that planting improvement was further tempering the northern climate were visible elsewhere—on his western tour of Nova Scotia, Titus Smith was encouraged to find “plants which grow in the Southern States.”¹³⁷

¹³⁵ *Letters and Papers on Agriculture: Extracted from the Correspondence of a Society Instituted at Halifax for Promoting Agriculture in the Province of Nova Scotia* (Halifax: John Howe, 1789), 5-6. On natural history and acclimatization in early modern Sweden, see Lisbet Koerner, *Linnaeus: Nature and Nation* (Cambridge: Harvard University Press, 1999).

¹³⁶ Williams to Banks, September 16, 1789, BL Add. Mss. 8097.358.

¹³⁷ Titus Smith, *Survey of the Eastern and Northern Parts of the Province in the Years 1801 & 1802*.

Chapter 5 Planting Improvement

How did scientific agrarians intend to plant improvement in northern America? In the eighteenth through early nineteenth centuries, northern elites pursued three main strategies for regional improvement: economic development, social engineering, and landscape gentrification. Scientific agrarians promoted commercial improvement and agricultural production for long-distance trade through economic botany, import substitution, and specialization. They cast settler recruitment and the employment of ‘surplus laborers’—criminals, freed slaves, women, children, and old people—on small northern farms, as moral uplift schemes for simultaneously improving environments and people. And they tried to correct the region’s natural deficiencies and modernize its settler landscapes through small-scale experimentation, cultivating botanical gardens, acclimatizing exotic species, and building climate-controlled environments.

For improvers, scientific agriculture and natural history were not merely recreational pursuits, avocational interests detached from broader social meanings. Experiments with field rotations, the introduction of new crops or livestock breeds, and land development schemes would transform northern environments and create an improved agrarian economy, changes that were expected to have implications not just for the climate and the productivity of soils and plants, but for the benefit of society as a whole. Yet when many of their more ambitious schemes failed, northern improvers

found comfort in the gentrification of their own properties, the smaller arenas in which they practiced scientific agriculture and planted private landscapes of progress.

Economic improvement

In a basic sense, scientific agrarians were capitalists promoting rural economic development. Mostly, this meant ventures in land speculation and development. As I discussed in the previous chapter, the tours of the White Mountains were preliminary to projects for planting improvement. For example, Joseph Whipple went on the 1784 survey because he was eager to document the extent of promising intervale lands. He knew that few lenders in Massachusetts were willing to risk their money on the mountainous “Outlands” of New Hampshire but, as an improver, he was a more confident investor.¹ In 1773 Whipple had assessed the valleys surrounding the Saco River and, with the encouragement of a prominent Boston improver, bought seventy lots in the township of Dartmouth, which he leased to tenant farmers. The following year as he built his own Dartmouth estate on a tract near the Israel River, he convinced provincial governor John Wentworth to finance the Shelburne Road, one of the earliest roads cut through the White Mountains (its head builder was Captain John Evans). But evidently settlers had not been lured by these initial improvements since, when Whipple toured the Whites with Evans, Belknap, and Cutler in 1784, they found the road “had not been

¹ December 3, 1773, John Lowell to Joseph Whipple, SL40, Spence-Lowell Collection, Huntington Library Manuscript Collection.

traveled for some years, and is grown up with bushes and filled with wind-falls, the bridges broke, and the mires deep.”² The trajectory of Whipple’s efforts to plant improvement in his New Hampshire properties—his initial energy in surveying the outlands and making development plans, their slow realization, hiatus, or failure—reflect a pattern of northern improving projects (including Whipple’s greater focus on his urban home landscape).

Improvers also promoted schemes for economic diversification and domestic manufactures. Even before the non-importation movements of the 1770s in the Thirteen Colonies, northerners looked for ways to encourage the production of crops that would draw profit for local elites and thereby expand the colonial economy. In Nova Scotia, improvers were especially interested in economic botany as a strategy for helping the province provision itself and prove that it would not be a constant drain on the British empire. As one so-called Agricola remarked in 1752:

The spirit now starting among us to clear and cultivate the lands will I hope be cherish’d: it is certainly of lasting importance to us. We can now behold (‘tis true) a large and pompous town, but, until we can see the plains and country round about it covered with grass or grain new difficulties will every day arise and the expensive method of our present supply of provisions will reduce the inhabitants (many of them) to a state of insolvency.³

Agricultural improvement for provincial subsistence was a persistent concern after the American Revolution and through the nineteenth century, as local elites decried the

² Whipple himself lived mainly in Portsmouth. Dartmouth is now the town of Jefferson, New Hampshire. Lawson, *Passaconaway’s Realm*, 53-54; Jeremy Belknap, *Journal of a Tour to the White Mountains in July, 1784* (Boston: Massachusetts Historical Society, 1876), 12.

³ May 30, 1752, *Halifax Gazette*.

continued reliance of the province on imperial subsidies, imported food, and illegal trade with New England.

From the mid-eighteenth century and through the War of 1812, Nova Scotia improvers repeatedly proposed to address provincial dependency through import substitution, encouraging the cultivation of the most reasonable staple crops fit for the climate, mainly hemp, flax, and potatoes. From the imperial point of view, promoting hemp and flax production (as well as timber harvests) in its North American colonies was especially attractive after the American Revolution, when British merchants and the Navy were cut off from provisions and raw materials from the United States to supply Caribbean plantations. In the 1780s, British officials increasingly pursued economic policy through projects to promote agricultural improvement and economic botany, organized through Kew Gardens, the East India Company, the Board of Trade, and the other disparate bodies through which the empire was conducted.⁴

Because none of these projects were centralized in one agency it is difficult to know exactly where British administrators placed the most priority, but it is reasonable to assume that British North America loomed small. As earlier in the empire's history, the main initiatives came from interested parties, mainly grantees of property within the colonies and local elites. In the case of Nova Scotia, the main organizing body was the agricultural improvement society, the NSSPA, which in the late 1780s and '90s renewed calls to grow hemp, flax, and other articles to supply the Royal Navy and Atlantic trade. Sir John Wentworth and other local elites argued that improving commercial agriculture would demonstrate that Nova Scotia was "a valuable appendage to the parent state, and a

⁴ Drayton, *Nature's Government*, 115-120.

sure source of permanent supplies to our West India Islands.”⁵ In 1803, Wentworth and Sir Joseph Banks lobbied the British Board of Agriculture to supplement premiums already offered within the colony to support hemp production.⁶

In a regional view, Nova Scotia improvers also worked to commodify gypsum, of which there were “inexhaustible veins in the Island of Cape Breton and different parts of the Province.” Newly arrived Loyalists in 1784-85 almost immediately seized on gypsum as an item that was both an aid to improving fine estates as well enriching soils (“in use for Statuary and as the best cement in all kinds of Masonry, as also for Manure”), and more importantly, would “become the source of great Wealth,” for local merchants.⁷ Mostly exported from France (hence, also known as plaster of Paris), provincial improvers hoped to capture the American market. The *Nova Scotia Magazine* reprinted articles on the efficacy of gypsum as a soil amendment from the *Christian’s, Scholar’s and Farmer’s Magazine*, *Massachusetts Magazine*, and *American Magazine*, the last which reported experiments conducted between 1784 and 1788 suggesting that “there is no difference between American and European gypsum,” and that “too much pains [sic] cannot be taken to engage our farmers generally in the use of these valuable manures.”⁸

By 1794, Nova Scotia was supplying the fertilizer to northeastern American farms; in 1798 one large proprietor in New Brunswick shipped 2,000 tons of the stuff to

⁵ February 19, 1805, SR RASE BIII: 1802-1803, MERL; “Plan of a Society for Promoting Agriculture in the Province of Nova Scotia”; “A New Method of Cultivating and Preparing Hemp ... Printed by order of the Lords of the Committee of Council of Trade and Foreign Plantations,” April 1790, *Nova Scotia Magazine*.

⁶ June 7, 1803; February 21, 1804; March 2, 1804; February 19, 1805, SR RASE BIV: 1803-1806, MERL.

⁷ William Shaw to Edward Winslow, February 1, 1785, Box 1898, C.B. Ferguson Papers, MG1, NSARM.

⁸ December 1789, February 1790, May 1790, *Nova Scotia Magazine*.

the United States and claimed that demand for it there was “constantly increasing.”⁹ Although northern farmers had mixed results with it, several Connecticut improvers who had been experimenting with “the plaister” since the late eighteenth century, declared it “the cheapest and best manure” they had encountered.¹⁰ It is not clear precisely how effective this improvement campaign was for the provincial economy in the short run, but through the mid-nineteenth century, Nova Scotia exported 60,000 tons annually.¹¹

Some northern improvers argued that producing hemp and other staples in colonial New England or Nova Scotia would threaten their favor in the empire, since other colonies were better equipped to raise these crops. Instead, northern farmers should exploit their small farms for cultivating specialty crops, especially luxuries associated with Mediterranean or otherwise warmer climates, like saffron, silk, and grapes.¹²

In some cases, these schemes were proposed by metropolitan improvers, like the London Society for the Encouragement of Arts, Manufactures, and Commerce (LSEAMC). Jared Eliot, writing during the Seven Years War, took his cue from that society, when he suggested that farmers try silkworm husbandry. Though he worried that few would be enticed to “leave the old beaten paths,” he argued that planting mulberry

⁹ R.H. Gardiner to BV, March 10, 1805, Folder: Correspondence, January-July 1805, Carton 2: SH 116DN, 1805-1812, Vaughan Family Papers, Correspondence, 1773-1812, MHS; William Strickland, *Journal of a Tour in the United States of America, 1794-1795*, J. E. Strickland, ed. (New York: New York Historical Society, 1971), 112; March 5, 1799, *The Royal Gazette and the Nova-Scotia Advertiser*.

¹⁰ *Transactions of the Society for Promoting Agriculture in the State of Connecticut* (New Haven: William W. Morse, 1802), 4-9.

¹¹ For statistical estimates of gypsum exports and the problems in quantifying pre-Confederation trade, see Julian Gwyn, *Excessive Expectations: Maritime Commerce and the Economic Development of Nova Scotia* (Montreal: McGill-Queen's University Press, 1998), 34, 65-66.

¹² On saffron: [Fragment of a letter to] Mr. James Clarke, Secretary of the Society for Promoting Agriculture, Folder 5, item 27, Titus Smith Papers, MG1 Vol. 1664B, NSARM.

trees should be seen not as a risk, but as a long-term investment.¹³ Eliot promoted silkworm husbandry specifically in Connecticut. In mercantilist terms, the colony needed to specialize its agricultural production in a way so as to avoid challenging British farmers or manufacturers, Newfoundland, Rhode Island, or Massachusetts merchants in the Atlantic fisheries, and southern planters for cash crops. In ecological terms, mulberry trees would provide the benefits of shade, firewood, and even better habitat for growing grass: Eliot asserted that somehow both the southern colonies and Cape Breton “yield more grass than ours.” He reasoned that planting more trees would result in a greater accumulation of dew, and allow soils to retain more moisture.¹⁴

In several editions of his almanac, Nathaniel Ames seemed to act on local initiative when he insisted that gentlemen farmers in southern New England should experiment with silk husbandry to provide raw material to England. In 1769, he announced to his readers that some unnamed Boston gentleman had promised cash prizes, ranging from one hundred to ten dollars, to landowners in the area who would raise the most mulberry trees. Ames rebutted objections that silk worms preferred “hot climates,” pointing out that:

raw Silk is plentifully raised in much more Northern Climates than this, we have a most promising prospect of one Day turning the constant course of prodigious Sums of Money from Spain, France and Italy into America, and no doubt we shall be encouraged by our Mother Country, notwithstanding her present Severity.

While in “hot countries” the worms would develop on the trees in the open air, the main adjustment northern growers would have to make would be to bring the cocoons inside to

¹³ Jared Eliot, *Essays Upon Field-Husbandry in New England and Other Places, 1748-62* ed. Harry Carman, et al. (New York: Columbia University Press, 1934), 127-129.

¹⁴ Eliot, *Essays Upon Field-Husbandry in New England*, 134-5, 143.

develop among plucked mulberry leaves. “Choose a warm room for their nursery,” Ames advised.¹⁵ Benjamin Waterhouse included a unit on the silkworm as part of his natural history course. Once he explained the worm’s “natural progress in the open air of the warm and serene climates of some parts of Asia,” he proceeded to the artificial methods of raising them in “the rough and unsteady” environment of northern North America.¹⁶

In the late eighteenth century, John Lettsom urged the MSPA to continue promoting sericulture in Massachusetts and Maine (though apparently, he did not want to publicize his sponsorship). Reprising the premiums for planting mulberry trees offered by the LSEAMC to American colonies before the Revolution, Lettsom offered to finance grants administered through the MSPA “to Him who shall in a given Time have ye most white mulberry Trees growing in a Nursery, or to Him who shall have ye most set out & flourishing or growing.” He was especially interested in encouraging “those who begin settlements in new plantations” and believed that mulberry would grow in the same conditions as apple trees, which clearly thrived in New England (though he worried that southern New England offered a better climate than northern). To add force to his argument, he pointed to the success of Prussian silk exports, a young industry that was the direct result of pressure from that country’s agricultural society.¹⁷

Even without the encouragement of foreign patrons, northerners were planting mulberry trees. In 1790 an American newspaper reported that sixty families in New

¹⁵ Nathaniel Ames, *An Astronomical Diary, or An Almanack ... Calculated for the Meridian of Boston in New-England* (Boston, 1769).

¹⁶ Benjamin Waterhouse “Lecture: The Silkworm” December 4, 1810 HMS c16.4.

¹⁷ J.C. [Lettsom?] to Oliver Smith, November 18, 1793, Box 11: MSPA, MHS. This letter was marked “not to be published.”

Haven had raised 442,000 silk worms.¹⁸ In Massachusetts, local elites distributed white mulberry seeds “sufficient to produce Eighty Thousand trees,” which seemed to be “taking effect in some places.”¹⁹

Despite these efforts, planting economic improvement through sericulture ultimately failed in early New England and the northern climate was only partly to blame. As Lettsom’s awareness of the Prussian silk industry suggests, similar projects for encouraging domestic manufactures based on exotic plants, seemed to improvers elsewhere to offer a promising method of regional economic diversification. Linnaeus experimented unsuccessfully with mulberry plantations in Sweden.²⁰ In southern North America, capturing consumer demand for Asian and Mediterranean products like silk and wine figured in the Crown’s early seventeenth century encouragements to Virginians to plant mulberry trees, projectors’ utopian visions in the 1730s for a slaveless, horticultural colony in Georgia, and later eighteenth century southern improvers’ proposals to encourage cottage industries among small farmers, especially in the Lower South. Yet even in the warmer climates of the South, these schemes largely failed: silk never became a significant American export.²¹

In the North, moreover, no single crop—staple or luxury—dominated the rural landscape or regional agricultural exports. Farms in New England and Nova Scotia were limited in size, not diversity. Smaller-scale farmers in the North tended broadcast seed

¹⁸ “American Produce,” September 1, 1790, *Columbian Centinel*.

¹⁹ James Winthrop to MSPA, June 26, 1793, Box 2, Folder: 11, MSPA, MHS.

²⁰ Koerner, *Linnaeus: Nature and Nation*, 149.

²¹ On the repeated attempts to promote hemp and silk as specialty crops in New England and their failure, see Percy W. Bidwell and John I. Falconer, *The History of Agriculture in the Northern United States, 1620-1860* (Washington, D.C.: The Carnegie Institution of Washinton, 1925), 100-101, 193. For the history of silk in the colonial South, see Chaplin, *Anxious Pursuit*, 158-165.

and intercrop seedlings, which produced a variety of plants within a single plot and a visual jumble contrary to the doctrine of commercial improvement. As John MacDonald noted of Acadian tenant farms on DesBarres's property in Minudie, Nova Scotia:

In these plots may be seen some ridges of potatoes, some of barley, poor pease & oats, which is a very unfarmerlike disposition of ground, as every plot ought to be prepared throughout for one & the same species of crop.²²

But even where he saw fields that conformed to his expectations for good husbandry—uniformly planted tracts, neatly separated from each other and from pastures, and covered in luxuriant growth—his account described the widespread regional practice of mixed husbandry and intensive cultivation. The field divisions in Minudie, DesBarres's other neighboring properties, and MacDonald's tracts on Prince Edward Island were divided among many tenants, some held land in common, and field divisions for various crops ranged from one-quarter acre to four acres. Comparing the northern and southern United States, Benjamin Waterhouse explained to a correspondent, that the agricultural landscape was "different at the southward," where the practiced monoculture, raising "a few articles to a great extent." Southern plantations plainly "exceed[ed] any in the Northern for expensive agriculture."

The modest scale of operations on northern farms was the result, Waterhouse conceded, of "local circumstances and hard necessity." But what northern planters lacked in the profit potential of their small farms, they made up for in the "variety in agriculture and horticulture that we have." As a self-respecting northern gentleman, he

²² Series 2: Tatamagouche and Minudie Estates, J.F.W. DesBarres Papers, 1762-1894, MG23-F1, National Archives of Canada.

believed that in the South, there was “less system than there is among us Yankees.”²³ Northern improvers could not rival southern planters in commercial ventures, but their botanical diversity, ‘system,’ and temperate climate promised other benefits.

Improving others

Many of the northern elites engaged in scientific husbandry and agricultural societies were government officials or the principle organizers of voluntary charitable associations focused on poor relief or reform. Whatever their age, gender, ethnicity, or race, agricultural laborers, tenants, or gardeners were essential to planting improvement insofar as they could carry out recommended agricultural practices, bring profit to their employers, and embody the virtues of progress. A more industrious approach to farming—increasing arable acreage, putting up outbuildings, specializing in new crops, and intensifying production—would necessitate a larger labor force and thereby employ “Millions of Hands,” of poor or underemployed dependents “That all fit Matter shall be improved to its best Purposes.”²⁴

Such considerations informed the justifications of employing surplus labor in northern improving projects like the promotion of silkworm husbandry in New England. In addition to all the “collateral considerations” Jared Eliot listed for why Connecticut

²³ “Oxen,” [n.d.] Benjamin Waterhouse Papers (H MS c16.4), Harvard Medical Library in the Francis A. Countway Library of Medicine (BW-HMS c16.4).

²⁴ Nathaniel Ames, *An Astronomical Diary, or An Almanack ... Calculated for the Meridian of Boston in New-England* (Boston, 1758).

was specifically suited to silk production, he added that it would create new job opportunities. By employing the surplus labor of presumably indigent “women, children, cripples and aged persons”—the last as overseers—raising worms and spinning silk would be a “great advantage to the poor.”²⁵ In Europe, it was “well known” that these tasks were “principally performed by women & children, after the Trees are planted.”²⁶ But in the northern colonies, especially where settlement was sparse as in the British towns of early Nova Scotia, new immigrants from Scotland noted with surprise that there were “more women weavers than any other.”²⁷

New Haven boosters in the late eighteenth century derived “much satisfaction,” from witnessing “several young ladies” in the town who were kept busy in caring for cocoons and spinning. One woman “Miss Betsey Sherman, actually raised this season twelve thousand—and that one young lady, from 1200 cacoons [sic] or silk bails, reeled eight ounces of the best of Silk.”²⁸ These small triumphs seemed to encourage improvers that they had achieved some results, however much they fell short of their most grandiose visions.

Just as a range of people who ranked below genteel improvers could be swept into projects for planting improvement, so did improvers’ broader efforts to change the northern environment hold the potential to improve these lower sorts. Enlightenment intellectuals believed that effecting changes in the physical environment was essential groundwork for civilizing the people inhabiting them. Planting improvement and social

²⁵ Eliot, *Essays Upon Field-Husbandry in New England*, 135-137.

²⁶ J.C. [Lettsom?] to Oliver Smith, November 18, 1793, Box 11: MSPA, MHS.

²⁷ Luke Harrison to William Harrison, January 1, 1803, Harrison Family Papers, MG1 vol. 47, no. 189, NSARM.

²⁸ “American Produce,” September 1, 1790, *Columbian Centinel*.

engineering were mutually reinforcing objectives or, at least, improvers believed that signs of progress perceptible in landscapes should be reflected in people, and vice versa.

Attracting the right kind of settler to purchase or work on northern properties was thought more likely to advance the broad aims of agricultural colonization. Incentives offered to Protestant migrants for recolonizing Acadia as a British plantation in the eighteenth century reflected this ideological aspect of colonial improvement. Such policies assumed that Protestant colonists would be faithful British subjects, but also the most reliable improving farmers. Other settlers, like the remaining Acadians or non-Protestant small farmers and tenants in the area, “were not settlers in terms of the grants.”²⁹ In other words, those settlers who had not acquired lands in Nova Scotia through official grant, had no legal entitlement to them. The policy of granting British North American lands only to Protestant grantees meant that regardless of whatever agricultural improvements other farmers effected, officially they were not improving settlers.

After the Treaty of Utrecht in 1713, the British empire was flush with vast territories to distribute, sell, and resettle. Codifying the prevailing British sentiment of anti-Catholicism, British metropolitan politicians, colonial officials, and land agents recruited coreligionists from the British Isles or continental Europe (the latter, so-called Foreign Protestants), with subsidies for transportation, land, and supplies. In Nova Scotia, after the Acadian deportations in 1755, the majority of immigrants to the area were either New England Congregationalists (the Planters) and Anglicans, Huguenots, or

²⁹ [DesBarres’s draft history of the controversy in PEI], v. 14, Series 5: Additional correspondence and papers, 1762-1894, J.F.W. DesBarres Papers, 1762-1894, MG23-F5, National Archives of Canada.

Presbyterians from Yorkshire, Scotland, Ireland, the German states, Switzerland, and the Netherlands.³⁰ However, in the event, only some Protestant grantees turned out to be capable farmers. Assessing the work of Planters and most other pre-Revolutionary migrants to Nova Scotia, northern elites concluded that “nothing of any consequence in husbandry could be expected” from them.³¹

By the late eighteenth century, colonial elites frustrated with the uneven success of sectarian recruitment policies began to propose alternative schemes to insure that improvement was planted in Nova Scotia, many of them predicated on ideas about the nature of the colony’s climate or its civilizing influence. In part, northern elites felt they could blame the harshness of the climate, or bad publicity about it, for the lack of improvement in the colony. They were anxious that the best settlers simply could not be lured to live in such a cold place as Nova Scotia. As Joseph DesBarres understood the patterns of migration to British America in the course of the land grab since the mid-eighteenth century, those who could, would choose to go to more southerly locations. “Many arrived” in the eastern seaports of America “from Europe, who almost invariably found their way from thence to the present American States, from whence none would go to settle Nova Scotia, more than they would go to Siberia.”³²

³⁰ On the recruitment of Protestant settlers to Nova Scotia, see Bailyn, *Voyagers to the West*, 362-4; Brendan O’Grady, *Exiles and Islanders: The Irish Settlers of Prince Edward Island* (Ithaca: McGill-Queen’s University Press, 2004).

³¹ Isaac Deschamps, “Observations on the Progress of Agriculture in Nova Scotia and New Brunswick with Notices of Acadian Manners and Customs ...” (1782), RG 1, vol. 284, NSARM.

³² [DesBarres’s draft history of the controversy in PEI], v. 14, Series 5: Additional correspondence and papers, 1762-1894, J.F.W. DesBarres Papers, 1762-1894, MG23-F5, National Archives of Canada.

Other local elites seemed to agree, and advocated a different strategy. Isaac Deschamps, a Swiss Protestant, provincial official, and one of the few settlers in the first post-expulsion wave to become a large proprietor, suggested that the provincial land grant policy should shift from Protestants to settlers from northern climates. Deschamps pointed to the climatic similitude between northern Europe and Nova Scotia to explain the peculiar ability of German Protestants, who had settled grants in the Atlantic coast town of Lunenburg, where they “left nothing undone to forward their prosperity.” He reasoned that they were able to plant improvement and cultivate their lands with “great Perfection” because they were “men inur’d to hard Labour and cold climate.” Therefore, he urged officials and land agents to focus their recruitment efforts on “the northern Inhabitants of Europe,” who, regardless of their other characteristics:

would prefer this Country to any other in America being nearly the same Climate as their own and dreading any climate warmer, those are the people we should introduce to make this a flourishing country they being inur’d not only to a cold climate but to every other labour this country wants to make it flourish. Whereas people born in a warmer climate will not think themselves happy in a cold one.³³

This argument was an old one: Samuel Vetch had called on it just after the passage of the Treaty of Utrecht to sanction the takeover of Acadia, reasoning that British-bred black cattle were more suitable to the region’s ruggedness than were livestock imported by Acadians, or implicitly, than the French habitants themselves:

The agreeableness of the Soil & Climate to those Creatures being the same as they were bred in which will mightly contribute both to their

³³ Isaac Deschamps, “Observations on the Progress of Agriculture in Nova Scotia and New Brunswick with Notices of Acadian Manners and Customs ...” (1782), RG 1, vol. 284, NSARM.

healthfulness and fruitfulness, which could not be in Several Years
Expected from those transported from france.³⁴

The thrust of the claim—that creatures already acclimatized to the northern environment were more economical for ecological imperialism—should not have been especially compelling to improvers with a scientific bent. In any case, when Deschamps offered a version of it for official consideration in 1782 neither was he apparently bothered by the fact that other emigrants from cold, northern regions of Europe had not performed as well as the Germans.

Another way of towing this line of reasoning was to use climatic incompatibility to explain the failure to plant improvement. For example, DesBarres believed that the so-called Black Loyalists who streamed into the colony immediately after the American Revolution had settled in Nova Scotia only as a desperate and temporary resort. Black Loyalists were African-American veterans of the Revolution who fought for the British and were granted land in Preston and Birchtown, Nova Scotia in 1783, a conspicuous group among the larger contingent of Americans who migrated north after the Treaty of Paris. Unlike white Americans, black veterans inspired little confidence among imperial planners or local elites and only a fraction of the three thousand sent to freedom in Nova Scotia were granted land. Still, it was colonial officials in Nova Scotia who had done the most to persuade the Crown to resettle large numbers of Loyalists—black and white—within its remaining territories in North America. Though sources on the migration of black veterans are scant, historians have argued that their early settlements followed the conventional patterns of agricultural colonization and leaders, like David George, a New

³⁴ 'Letter concerning Acadie and Nova Scotia,' Samuel Vetch to the Lords of Trade, November 24, 1714, MG1, v. 1520, Folder J, NSARM,[copy of PRO CO 217/2, WA 53].

Light minister who organized a congregation in Birchtown, and, among other among other benevolent activities, distributed seed and offered farming advice.

But in 1785, British engineer Captain William Booth observed that the Black Loyalists were “no farmers and very indifferent gardeners,” unlike the ideal settler who would be “able to work the Farmer’s Plough and Harrow.”³⁵ In addition, small size of the holdings allotted to the former slaves, between 10 and 30 acres situated in the virtually sterile soils of the southern Nova Scotia coast, reflected their low esteem among the province’s elites. James Hamilton, one of the more substantial land owners along Cape Negro River—to the southwest of areas of Black settlement—told surveyor Titus Smith that “we should not find a foot of land between his House & Argyle, that the greatest part of the Land towards Barrington & Argyle was covered with Rocks & the Remainder like the Land near his House which is a poor Land covered in general with Pine.”³⁶ Booth described the Black Loyalist settlement in Birchtown as a “valley with much stones and a little swampy.” The archaeological record confirms that Black Loyalists’ farms were among the poorest in the province and in 1791, over one thousand families petitioned the Crown for permission to cross the Atlantic to help establish the new British African colony of Sierra Leone.³⁷

³⁵ Graham R. Hodges, ed. *The Black Loyalist Directory*, quote on

³⁶ July 30-31, 1801, Titus Smith Papers RG1, vol. 380A, NSARM.

³⁷ Carmelita Robertson, “Curatorial Report 91. Black Loyalists of Nova Scotia: Tracing the History of Tracadie Loyalists, 1776-1787,” (Halifax: Nova Scotia Museum, 2000); and Laird Niven, “Curatorial Report 93. Was This the Home of Stephen Blucke? The Excavation of AkDi-23, Birchtown, Shelburne County,” (Halifax: Nova Scotia Museum, 2000). On the Black Loyalists, see Silvia Frey, *Water from the Rock: Black Resistance in a Revolutionary Age* (Princeton: Princeton University Press, 1991); See also, James S. G. Walker, *The Black Loyalist: The Search for a Promised Land in Nova Scotia and Sierra Leone, 1783-1870* (Toronto: University of Toronto Press, 1992); and Simon Schama,

DesBarres had been equally skeptical about the commitment of the more “substantial kind” of settler from New England, namely, the “wealthy Nantucket and Newport whaling families” had experienced the local weather, they were “unwilling to subject themselves to this harsh prospect” and promptly emigrated.³⁸ Yet this argument rested on the specious presumption that the New England climate was notably milder than that of Atlantic Nova Scotia. Since DesBarres made it in the context of a long train of petitions to the Board of Trade and the Admiralty to redress his personal financial problems, its sincerity is questionable. It seems just as likely he could not concede the consequences of his extended absenteeism—as a colonial official with numerous appointments and one of the largest landowners in the region who had left the care of his thousands of acres (and numerous children) in the care of an abandoned mistress, he had fallen short of his duties. It was more expedient, in this case, to place the blame on the poverty of the colony’s nature and the apathy of its inhabitants.³⁹

Just as agricultural reformers were not troubled by contradiction in their rhetorical strategies, neither were they inhibited by transparently self-serving or directly oppositional rationales. While Nova Scotia elites pointed to the disadvantages of the northern climate as an *ex post facto* justification for their failure to plant improvement by attracting respectable settlers to the province, they emphasized the advantages of the climate to rationalize schemes for settling groups they held in low esteem. If white,

Rough Crossings: Britain, The Slaves, and the American Revolution (London: BBC Books, 2005).

³⁸ Cape Breton Governor’s Accounts, 1784-1801, J.F.W. DesBarres Fonds, Series 3, 1774-1807 (MG 23, F1-3), Library and Archives Canada.

³⁹ On Mary Cannon, DesBarres’ land manager in the Annapolis Valley and mother of several of his children, see Lois Kernaghan, “A Man and His Mistress: J.F.W. DesBarres and Mary Cannon,” *Acadiensis* 11: 1 (1981–82), 23–42. Another woman looked after his lands in Sydney, on Cape Breton.

anglophone Protestants would have improved the northern environment, the cold temperate environment's supposedly moderating force would improve lesser sorts of settlers. One Nova Scotia naturalist cited the convenient theory, for example, that challenging environments were invigorating, while hospitable climates and bountiful landscapes were demoralizing:

wherever there is an unusually large district of very fertile land the inhabitants are unhealthy and liable to degenerate and become a weak timid race, who require a constant supply of men from other countries to support their population. While the inhabitants of a poorer soil who are compelled to use greater exertion to procure a subsistence have more strength and energy.

Nova Scotia's brisk winters offered "a very healthy climate to the temperate," and a bracing environment for the "intemperate": "that this country is in some degree indebted to the barrens for the salubrity of its atmosphere there can be no doubt." In this way, the writer recast the seeming disadvantages of the region's nature as positives, even if their benefits were apparent only to those with a scientific approach to the world who, like himself, could "see things as they really are."⁴⁰

Colonial administrators exploited such speculations about the degenerative and remedial effects of hot and cold climates in formulating settlement policies that doubled as social reforms. Rather than proposing that Nova Scotia become a penal colony, however, provincial elites used climatic theories to respond to the arrival of newcomers who were otherwise difficult to frame as desirable settlers, especially the American Loyalists—both free and unfree—who arrived in Nova Scotia at the end of the

⁴⁰ [Unidentified, n.d.] Folder 5, item 28, Titus Smith Papers, MG1 vol. 1664A-B, NSARM.

eighteenth-century. The curative properties of the northern environment were deployed by officials who handled the deportation of Jamaican Maroons to Nova Scotia in 1796.

With the defeat of a contingent of Trelawney Maroons in Jamaica in the spring of 1796, island planters and metropolitan officials considered a variety of possibilities for resettling over 550 Maroons in other parts of the empire, including Sierra Leone and the Bahamas. Sending them to Nova Scotia was intended as a temporary measure, in part, for fear that black people accustomed to warmer climates would not survive in the North and, on the other hand, as a useful stopover which might effectively quell their rebellious spirit (though the majority of the deportees were old men, women, and children). As Lieutenant-Governor John Wentworth suggested, the move to a temperate climate might literally cool their fiery disposition. If they stayed and became inured to the winters, Wentworth argued that he could place the Maroons as workers “on little farms, with the means of culture & raising stock,” which would guarantee “the progress of their improvement” and provide a cheap source of labor for white landowners.⁴¹ But the Maroons were not amenable to Wentworth’s plan nor to the prospect of living where they could not grow the tropical crops they were accustomed to eating. In 1793, the majority joined the Black Loyalists in Sierra Leone.⁴²

In the eyes of men like Wentworth, employing the indigent on northern farms could ease their dependence on the public purse, advance the demographic imperatives of settler colonization, and at the same time benefit the workers themselves, by teaching them the rudiments of good husbandry. Such presumptuous charitable endeavors were in

⁴¹ Sir John Wentworth to Duke of Portland, April 21, 1797, RG 1, v. 52, no. 41,d NSARM; John N. Grant, *The Maroons in Nova Scotia* (Halifax: Formac, 2002).

⁴² Harvey A. Whitfield, *Blacks on the Border: The Black Refugees in British North America, 1815-1860* (Burlington: University of Vermont Press, 2006), 22-23.

lieu of more profitable investments and underpinned projects for reforming settlers who were at least willing to stay permanently in the North. In 1749, for example, historian William Douglass suggested that the northern colonies should look to missionary schools established by the Society for the Propagation of the Gospel in Ireland, which leased farmland “for the Improvement of the Boys in Husbandry, and for the Profit of the School.” Douglass thought Americans could reform Indians and “poor Negros” using this same approach, putting students to work on small farms adjacent to the school.⁴³ In both Ireland and America, eighteenth-century elites were marrying the aims of empire with those of philanthropy, treating colonial planning as a project of moral uplift—whatever its probability of success.

Microclimates and microcosms

Whether in Kingston, Jamaica or Kingston, Rhode Island, Massachusetts, or Nova Scotia, with modest adjustments, scientific agriculture was supposedly practicable anywhere. By applying themselves to science, northerners believed they could both identify and remedy the exceptional disadvantages of their cold temperate situation. For many farmers, regional conditions such as extreme seasonal temperatures, stony soils, and the considerable variation of soil and land quality, encouraged adaptations to English

⁴³ William Douglass, MD, *A Summary Historical and Political, Of the First Planting, Progressive Improvements, and Present State of the British Settlements in North America* 2 v. (Boston: Rogers and Fowle, 1749), 134.

practices. Farmers in the northern colonies sowed their spring crops later and their winter cover crops earlier, built root cellars, and found ways to preserve enough hay for livestock to last through winter.⁴⁴

In Acadia, beginning in the mid-seventeenth century, farmers adapted French diking methods to the tidal conditions of the Bay of Fundy using *aboiteau*—distinctive hinged valves that regulated water flow—to cultivate marshlands on which their livestock grazed throughout the year. British landlords in the eighteenth century sometimes openly admired these Acadian techniques—which apparently New England migrants did not wholly understand—and in the 1770s and ‘80s, allowed Acadians to return to their former farms as tenants, in part, to revive the *aboiteau*.⁴⁵ An improving landlord hired to survey absentee provincial official and great proprietor J.F.W. DesBarres’ lands in the Annapolis Valley and Tatamagouche was “utterly astonished” at the complexity of Acadian marshlands, joking in his report to DesBarres (a Woolwich-trained naval engineer), that “here would have been some exercise for your engineering genius of far greater essential benefit to the nation and to yourself than all the Batteries you and all Engineers in the Service ever constructed.”⁴⁶ Describing the produce of the marshlands,

⁴⁴ On colonial American adaptations of English husbandry in southern New England, see Brian Donahue, *The Great Meadow: Farmers and the Land in Colonial Concord* (New Haven: Yale University Press, 2004).

⁴⁵ Maritime historians have debated whether or not disdain for the Planters was a product of class conflict or their actual ability to work the dikes. For the argument that New Englanders who migrated after 1755 reasonably adopted Acadian techniques, see Graeme Wynn, “Late Eighteenth-Century Agriculture on the Bay of Fundy Marshlands,” in *Atlantic Canada Before Confederation: The Acadiensis Reader* vol. 1, ed. Philip Buckner and David Frank (Fredericton: Acadiensis Press, 1985), 44-53; and John Mack Faragher, *A Great and Noble Scheme: The Tragic Story of the Expulsion of the French Acadians from their American Homeland* (New York: Norton, 2005), 48-50.

⁴⁶ Series 2: Tatamagouche and Minudie Estates, J.F.W. DesBarres Papers, 1762-1894, MG23-F1, National Archives of Canada.

MacDonald remarked: “Had there been a wind the waving of such a forrest of grass, if I may use the expression, would appear beautiful to a stranger.” DesBarres called these marshes the Elysian Fields.⁴⁷

Some observers thus comprehended that all northern farmers were forced to make allowances for regional conditions and were thereby, in economic terms, planting improvement. Especially in newer settlements, surveyors sometimes relented from their usual rhetoric of failure when they saw any sign of healthy crops or livestock, perceiving these as signs of progress. The news that “one Seed only” of grain had produced forty seven plants was headline news in Nova Scotia—all those who had “been to see it, declare[d] it to be as large and good as any they ha[d] ever seen.”⁴⁸ A traveler to Nova Scotia from Rhode Island in the fall of 1774, was heartened to find that, other than poor Indian corn, Halifax gardens showed the range of arable agriculture, noting “very good crops of wheat, rye, or oats, and very good clover and rye-grass hay ... their potatoes are very good, and all kinds of pulse and roots thrive well. Fruits are but scarce yet, as not many orchards are come to perfection but those that are planted seem to thrive.”⁴⁹ Ten years later, a visitor to the town noted approvingly, that the “Cattle were the largest I have seen in this Country, being as big as those of England.”⁵⁰

In their own properties, however, the stakes involved in environmental engineering were different for elites than for subsistence or commercial farmers. For

⁴⁷ Series 2: Tatamagouche and Minudie Estates, J.F.W. DesBarres Papers, 1762-1894, MG23-F1, National Archives of Canada.

⁴⁸ July 25, 1752, *Halifax Gazette*.

⁴⁹ [Unknown author] “Journey from Rhode Island to Nova Scotia, September 1774,” MG 1 Box 1898, Typescripts, Folder 10, number 4, NSARM.

⁵⁰ August 26, 1785, “Journal of a tour with General Campbell in July & August 1785,” Lieutenant William Booth Papers, MG1 vol. 144, NSARM.

gentlemen farmers, a properly improved landscape was not merely productive according to the latest—especially English—agricultural methods, but was a showcase of their wealth, scientific interests, and cosmopolitanism. The Rhode Island man touring Nova Scotia in 1774 was particularly impressed by Charlottetown, on Prince Edward Island, where he “viewed the governor’s field of experiment; in this little field he has very fine crops of wheat, clover, turnip, pease beans, cabbages, carrots, potatoes, &c.,” and judged from the management of this garden laboratory that “no soil appears finer for cultivation than this island.”⁵¹

Particularly because Prince Edward Island was divided into large tracts granted to substantial landlords and its soils were the richest in the province, by the 1790s, improvers believed that the island would soon look like the older British settlements of Nova Scotia, where finer estates, like one advertised by a naval officer in Halifax, included an “excellent house in good repair ... with all the out-houses, consisting of a good chaise house and stables, green-house, and several other conveniences ... one of the best Gardens in the Province with a great variety of Fruit-Trees, and good Asparagus Beds.”⁵² Although Halifax was “a very sterile spot,” it was the military and administration capital of the province—colonial officials, large proprietors, and investors tacitly understood that if the grounds surrounding its more prominent buildings and

⁵¹ [Unknown author] “Journey from Rhode Island to Nova Scotia, September 1774,” MG 1 Box 1898, Typescripts, Folder 10, number 4, NSARM.

⁵² January 6, 1795, *The Royal Gazette and the Nova-Scotia Advertiser*. On the history of improvement in Prince Edward Island, see Rusty Bitterman, *Rural Protest on Prince Edward Island: From British Colonization to the Escheat Movement* (Toronto: University of Toronto Press, 2006).

houses were austere, they would convey poverty.⁵³ Improvers were determined to advertise the natural wealth of the province and made sure that their properties were abundantly decorated with grass, flowers, and other greenery, no matter what the environmental conditions. To show that they had planted improvement, large proprietors' estates had to display architectural details, exotic plants, and gastronomic luxuries that conformed to higher standards than the farmsteads of ordinary colonists. In Cape Breton, despite its meager agricultural capability, local elites hoped to replicate genteel standards of improved landscape and estate design. In 1785 a visiting naval engineer found Louisbourg in "a dismal appearance." Neither was he impressed by the "half finished Hut" in Sydney in which Joseph DesBarres, then governor of Cape Breton, was living. But DesBarres told him that the situation was "merely Temporary," and "that when the Ground shall be cleared, he means to build a good House in one of the principal streets." The engineer agreed that "when covered with Houses, and Inhabitants," Cape Breton would then "certainly, form a beautiful appearance."⁵⁴

Investing in climate-control technologies helped northern improvers create local landscapes of improvement that resembled, at least in some ways meaningful to them, the country seats of landed elites in England or the grand mansions of large planters in the South and Caribbean. Northern improvers invested in the latest, sometimes costly technologies to enable them to experiment with exotic, warmer-climate crops that were untenable for ordinary farmers. In his first few seasons in Maine, the Vaughan family

⁵³ 'George Deschamps and G.H. Monk proposal for purchase of Lord William Campbell's land in Windsor,' May 17, 1783, Series 5: Additional correspondence and papers, 1762-1894, J.F.W. DesBarres Papers, 1762-1894, MG23-F1, National Archives of Canada.

⁵⁴ August 1-12, 1785, "Journal of a tour with General Campbell in July & August 1785," Lieutenant William Booth Papers, MG1 vol. 144, NSARM.

built a greenhouse and piazzas to shelter their more delicate perennials from hard frost. With Manasseh Cutler, Jeremy Belknap, and other northern improvers, Benjamin Vaughan also discussed the feasibility of using “hot-beds” to plant vineyards in Maine, as well as a method that involved burying the vines in wintertime. “Some in the New England states,” he wrote to John Lowell, “have buried their Trans-Atlantic vines under litter or boards, or both; but a burial in a simple trench of earth, appears sufficient at Astrachan & other places in Siberia.”⁵⁵

Besides the artificial pond stocked with salmon, trout, and goldfish, flower borders, oval plantings of ornamental trees and shrubs, and unusual imported varieties of cherry, quince, pear, and apple trees growing on Peter Chardon Brooks’ Medford, Massachusetts estate, he also built a personal nursery and numerous cold frames (which he called ‘hot-frames’), to raise tropical flora.⁵⁶ Orchardists in Nova Scotia were encouraged to invest in thermal lamps. George III’s son Edward (Duke of Kent) sent his gardener to build a hothouse nursery in Halifax to serve as a “depot” for cultivating indigenous plants and nurturing Caribbean species until they could be shipped safely to Kew. And at Harvard, William Peck installed a newly-patented English hothouse design that apparently required less fuel because, as he explained, it circulated “atmospheric air into the upper part of the house through certain tubes.”⁵⁷

⁵⁵ BV to Judge Lowell, March 19, 1800, Carton 22: SH 116Y1, Folder: Misc. Agricultural Papers, Vaughan Family Papers, MHS.

⁵⁶ March-October 1811, Farm Journals, 1808-1848, Peter Chardon Brooks Papers, Ms N-2049, MHS.

⁵⁷ William Aiton to Joseph Banks, [October 4, 1803], BL Addl. Mss. 33982.264-265; “On the Utility of Frost Conductors,” *Nova Scotia Magazine*, June 1790; WDP to Theodore Lyman, London August 16, 1805, Box 2, Folder—Papers 1805-07, HUG 1677, WDP Papers, Harvard University Archives.

Before the mid-nineteenth century, Harvard's garden at its Botanic Institution was the most ambitious, if short-lived, organization for showcasing northern improvers commitment to botany and scientific agriculture. First imagined by Benjamin Waterhouse in the mid-1780s, the garden began as a small enclosure of "indigenous plants from [local] woods and fields." The hothouses for tropical and other exotic plants would have to "await a future period of wealth and luxury," English patron John Lettsom advised him, especially since Waterhouse was unable to attract sufficient investment from the college or the local public.⁵⁸

By the turn of the century, the MSPA took up Waterhouse's idea to establish a scientific garden (though the Society largely excluded him from its execution). In 1801, the Society raised over \$30,000 to begin planting on a six square-mile tract in Maine granted by the state legislature, but for some reason only a minimal fraction of the budget was allocated for the garden in Cambridge.⁵⁹ With private gifts—especially Andrew Craigie's four-acre yard in back of his summer cottage near the college—the grounds in Cambridge amounted to nine acres and were ready for a fall planting in 1808.⁶⁰ Admission was open only to subscribers or by annual or "occasional" ticket and the Institute would sell seeds, corms, plants, soil amendments, and gardening equipment to the public, funds in addition to private donations which the MSPA hoped would cover the

⁵⁸ Cash, *Dr. Benjamin Waterhouse*, 89.

⁵⁹ 'Resolve granting a Township of Land to the Massachusetts Agricultural Society,' March 4, 1809, Box 13, Folder 30, MSPA Papers, MHS; Cash, *Dr. Benjamin Waterhouse*, 274-279.

⁶⁰ May 24, 1805, Wastebooks, vol. 17, Peter Chardon Brooks Papers, Ms N-2049, MSPA; November 19, 1807, D.A. Tyng to WDP, WDP Papers, Harvard University Archives; John Lowell, Committee report, September 24, 1808, Box 13, Folder 30, MSPA Papers, MHS.

maintenance and expansion of the garden as well the salaries of the professor and his gardening staff.⁶¹

The MSPA conceived elaborate purposes for the Institution and its educational, ornamental, and commercial gardens. For students of natural history, there would be a demonstration garden planted with indigenous, naturalized, and exotic species, with marginal areas reserved as a laboratory for botanical and entomological experiments. Besides research, teaching, and supervising the garden, the responsibilities of the professor included providing guided tours and lectures on all aspects of natural history to subscribers upon request, managing and enlarging the college's mineralogical collection, and networking with American and foreign colleagues. Most of all, the MSPA wanted the Botanic Institute to inspire public assent to the Society's broader mission, that of spreading interest in the enlightened sciences of natural history and agricultural improvement among northern landowners. The Visiting Committee would ensure that the professorship supported this goal and that the naturalist hired would be "most useful in promoting [the] interests of the University, the arts and the agriculture of the State."⁶²

The Visiting Committee hired amateur entomologist William Dandridge Peck, in part, because his reputation was impeccable, they knew him through personal connections, and he was a Federalist, like most of the MSPA leadership. He was a far less obtrusive personality than Waterhouse, who was inarguably better qualified.⁶³

⁶¹ "Plan for a Professorship of Botany," February 1805, Box 13, Folder 30, MSPA Papers, MHS.

⁶² "Plan for a Professorship of Botany," February 1805; and "Vote of the President and Fellows of Harvard College, Nov. 15, 1808," Box 13, Folder 30, MSPA Papers, MHS.

⁶³ On the MSPA's quarrels with Waterhouse and preference for Peck, see Cash, *Dr. Benjamin Waterhouse*, 276-77, 281-283.

Peck's appointment was justified as well, through the recognition the MSPA had given him in 1796 for his illustrations and observations of the slug- or cankerworms that infested the region's orchards.

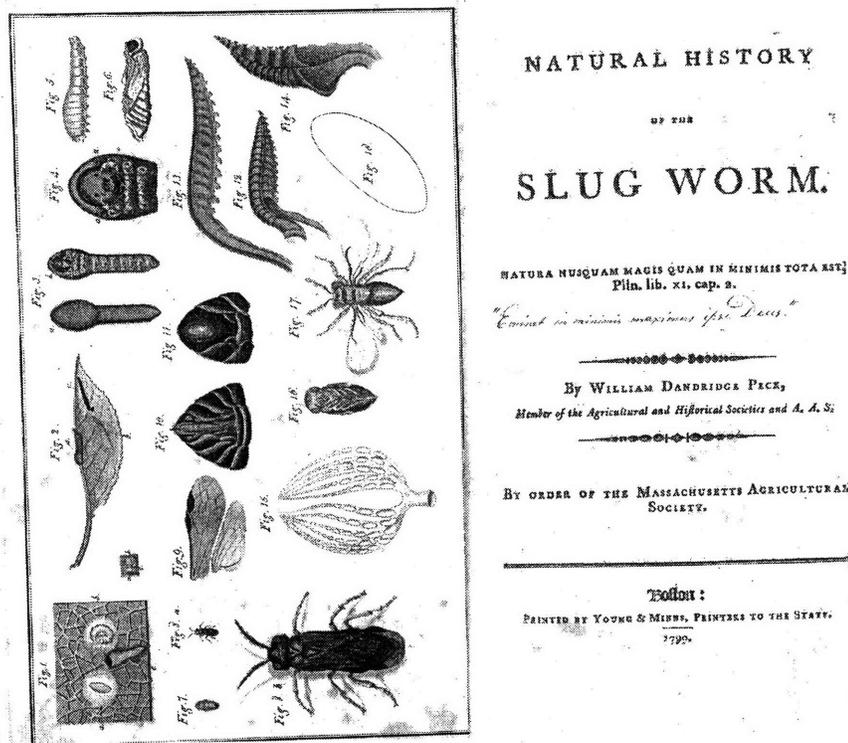


Figure 3. The MSPA awarded Peck its first premium for this work.⁶⁴

⁶⁴ William Dandridge Peck, *The Natural History of the Slug Worm* (Boston: Young and Minns, 1799). His observations were first published as "The Natural History of the Cankerworm," *MSPA, Rules and Regulations* (Boston, 1796), 35-45. On Peck's relationship to the community of agricultural improvers in the Boston area, see Thornton, *Cultivating Gentlemen*, 62-64.

On some counts, their efforts were a remarkable success. Peck's tour through Europe, and especially Britain, France, and Scandinavia, had been fruitful: besides establishing multiple contacts with naturalists and agricultural improvers, he gathered seeds, specimens, and ideas for garden layouts from royal, public, and private estates; hired consulting landscape artists and gardeners; and purchased books for the college natural history library. In the first year of planting, workers harvested and sold hay from the fields intended for the botanical garden. By 1810-1811, they finished a residence for Peck, adjacent to the garden, planted "indigenous forest trees and shrubs," erected a greenhouse and hothouse filled with 350 "exotick plants" (mainly "contributed by friends of the institution who possessed greenhouses in the vicinity"), and established a glacis, a sloping earthworks, at the bottom of which was a small marsh for boggy plants. The catalogue of the garden, published in 1818, listed well over one thousand trees, shrubs, and culinary, medicinal, ornamental, and poisonous vines, herbs, fruits, vegetables, and flowers, including imported varieties from the Caribbean, Africa, Europe, and Asia.⁶⁵ In contrast to the Duke of Kent's abortive plans to integrate Halifax into the growing network of imperial botanical gardens, by the second decade of the nineteenth century, the MSPA had created a world-class institution.

Financing all the functions and employees of the Botanic Institution had been a problem from its inception and worsened over time—a situation John Lowell referred to metaphorically in claiming that "the soil of the Garden is ungratefull, cold, & extremely

⁶⁵ "Report of the committee on ye Garden, July 30, 1808"; "Report of the committee on the Garden, July 29, 1809"; "Report of the committee on the Garden, March 31, 1810"; "Report of the committee on the Garden, June 30, 1810"; "Report of the committee on the Garden, July 27, 1811," Box 13, Folder 30, MSPA, MHS; William D. Peck, *A Catalogue of American and Foreign Plants, Cultivated in the Botanic Garden, Cambridge, Massachusetts* (Cambridge: Hilliard and Metcalf, 1818), quote on *iii*.

unfavourable for experiments. Its cultivation is unusually laborious.”⁶⁶ The bad financial situation was widely known—Benjamin Vaughan learned of it, for example, through a Boston and Kennebec Valley improver, who reported that the botanical garden “had obtained the grant of land; but not the money.”⁶⁷ Lack of funding or materials had plagued naturalist-improvers in the North more generally, who despaired that their botanical and agricultural research was marred “for want of some of the latest botanical Publications.”⁶⁸ In 1817, Peck was complaining privately to correspondents that “the Botanic Garden here progresses very slowly for want of more ample funds.”⁶⁹ By the end of the growing season in 1822, the Visiting Committee reported that its budget to pay the salary of the Professor of Natural History was exhausted. The position was eliminated and the garden was put in the care of a ‘curator.’⁷⁰

The MSPA’s venture in institutionalizing natural history and scientific agriculture at Harvard turned out, like most other projects for planting northern improvement, to be a lost cause. Nevertheless, MSPA members had partly fulfilled their mission to plant improvement under the auspices of Harvard’s botanical garden. As they stated at the outset of the project, the garden was supposed to provide concrete evidence of the “firmness and perseverance” of local improvers (especially as similar attempts, they

⁶⁶ “Report on the state of the fund for the professorship, J. Lowell, 1806, Box 13, Folder 30, MSPA, MHS.

⁶⁷ R.H. Gardiner to BV, March 10, 1805, Folder: Correspondence, January-July 1805, Carton 2: SH 116DN, 1805-1812, Vaughan Family Papers, Correspondence, 1773-1812, MHS.

⁶⁸ Aaron Dexter to MC, June 20, 1785 in Cutler and Cutler, *Life, Journals and Correspondence*, 115-116.

⁶⁹ WDP to Rev. Mr. Kirby, April 22, 1817, Box 2, Folder: Papers, 1815-19, WDP Papers, Harvard University Archives.

⁷⁰ Josiah Quincy, *The History of Harvard University* (Cambridge: John Owen, 1840), v. 2: 330, 385-386.

alleged, had “failed in every other section of the United States”).⁷¹ If there was less resolve either within the University, the state government, or the community at large to support the academic sciences, there was growing investment among “opulent merchants” to experiment with plants from India, China, Africa and other tropical climates in private greenhouses and hobby farms, which the Harvard garden continued to supply.⁷²

In this sense, the promotion of professional research was not the point of sponsoring the garden or the professorship. Eighteenth-century agricultural improvement and the imperial sciences of natural history more generally, as historian Chris Bayly has pointed out, “did not always have a direct practical purpose.” Instead, the natural sciences were “declaratory,” asserting the “power, knowledge, and enlightenment of a particular nation, state, or ruling group.”⁷³ Planting improvement meant putting enlightenment natural history to use, but the line between theory and application, rhetoric and practice was indistinct.

Northern naturalists-improvers were all too aware of their limited resources, both in terms of the region’s natural advantages and local interest in science. The paradox of northern improvement was that it was often a deliberately faulty practice: Perhaps elites failed in promoting a scientific approach to improvement as a way of guarding the distance between themselves and the mass of rural North Americans.

⁷¹ “Report on the state of the fund for the professorship, J. Lowell, 1806, Box 13, Folder 30, MSPA, MHS.

⁷² WDP to Rev. Mr. Kirby, April 22, 1817, Box 2, Folder: Papers, 1815-19, WDP Papers, Harvard University Archives; Thornton, *Cultivating Gentlemen*, 90-91.

⁷³ C.A. Bayly, *The Birth of the Modern World, 1780-1914: Global Connections and Comparisons* (Malden: Blackwell, 2004), 111.

Ultimately, what really mattered to improvers in New England and Nova Scotia was that they were helping to further gentrify local landscapes—at whatever scale was feasible. They were concerned with the aesthetics of progress, and many of their schemes were not hard-nosed policy proposals but gestures of gentility and cosmopolitanism. Planting improvement indicated, at least, their own commitment to modernity.

Chapter 6
Conclusion:
The Face of Nature/ The Aesthetics of Science

In Nathaniel Ames's almanac for 1758, New England farmers read that they were planting the "Future State of North America":

The Curious have observ'd, that the Progress of Humane Literature (like the Sun) is from the East to the West; thus has it travelled thro' *Asia* and *Europe*, and now is arrived at the Eastern Shore of *America*. .. Arts and Sciences will change the Face of Nature in their Tour from hence over the Appalachian Mountains to the Western Ocean...the Residence of wild Beasts will be broken up, and their obscene Howl cease for ever.¹

In the twenty-first century, conservation ecologists and environmentalists perceive diminishing indigenous species and biodiversity as major crises and indicative of modern society's troubled relationship to the natural world. Rapid economic development and the health of local or global climates and environments are now often assumed to be contradictory pursuits. By contrast, early modern naturalist-improvers assumed these goals were complementary. When Samuel Morse described the "face" of the northern countryside at the turn of the eighteenth century, he allowed that improvement had produced "a richer, though less romantic view," than the wild landscape, but he found the prospect encouraging:

the vallies, by industrious husbandmen, have been cleared of their natural growth; and the fruit of their labour appears in loaded orchards, extensive meadows, covered with large herds of sheep and neat cattle, and rich fields of flax, corn, and the various kinds of grain.²

¹ Ames, *An Astronomical Diary, or An Almanack* (Boston, 1758).

² Morse, *American Geography*, 140-141.

Likewise, John MacDonald, speaking of the marshlands on Joseph DeBarres's most improved property in the Annapolis Valley, remarked: "Had there been a wind the waving of such a forrest of grass, if I may use the expression, would appear beautiful to a stranger." DesBarres called these marshes the Elysian Fields.³ These 'richer views' of nature marked improvers' achievement.

The dearth of exotic species and the predictability of nature in colonized regions in northern North America held positive connotations because they were indices of an anglicized landscape of cultivation and the tempered climate that was correlated with it. Improvement not only legitimated conquest, improved landscapes ultimately naturalized British settler colonialism. The domesticated scene of a classic 'new England' landscape—small farms and gardens, fenced pastures, and Colonial architecture—was an imperial aesthetic ideal constructed by improving settlers in the eighteenth century. Northern small farms were not economic powerhouses: they were hallmarks of a putatively scientific, progressive imperial vision.

In the eighteenth century, those who self-consciously called themselves improvers believed that their work was scientific: scientific rhetoric inflected their communications on agriculture and scientific methodology was a requirement, they believed, for environmental improvement. Ordinary farmers continued to espouse the notion of improvement, but did not necessarily embrace this elaboration on what it meant to successfully, correctly develop real estate. Farmers in the Northeast who were increasingly industrious, consumed larger amounts of imported goods and fell further into

³ Series 2: Tatamagouche and Minudie Estates, J.F.W. DesBarres Papers, 1762-1894, MG23-F1, National Archives of Canada.

debt, as a result, organized numerous rural protests throughout the region, from Shays' Rebellion in late eighteenth-century western Massachusetts to the Escheat Movement in 1830s Prince Edward Island. Disagreement about what constituted proper land use fundamentally informed these conflicts about rights to landownership. Therefore, the relationship between ordinary and improving farmers was problematic, not because small landholders were necessarily careless farmers (as improvers generically described them), but because most farmers were wary of investing in costly 'scientific' improvements for fear of sinking into greater dependency. Indeed, investment in scientific improvement may have been seen as unnecessary or even foolish for those who were not interested in networking, in establishing or maintaining a polite or modern identity that linked them to other improvers throughout the British Empire and the European intellectual world.

Scientific improvers' interest in describing, and ultimately surmounting the limits of local climate, flora, and fauna was, again, to establish their expertise through this special claim to knowledge through experience. Only a specific kind of experience of place really counted as scientific knowledge: the experience of gentlemen who were conversant with and connected to the global community of science. Only they could translate their vision into the proper scientific rhetoric for consumption by like-minded cosmopolitans. The irony of the history of improvement in New England and Nova Scotia is that there was not as much scope for practicing or imposing their reform program as in colonial situations where local elites or imperial agents could exert greater control over a dispossessed, landless, or bonded agricultural labor force as in the slave South and West Indies, or in India. Instead, northern improvers fixed their attention on improving the 'disadvantages of a northern climate'—in environmental engineering, and

in adapting improvement advice to smaller scale enterprises. Northern North American improvers were ultimately more committed to networking gentility and realizing the gentrification of the landscape through science than they were to reforming the local agrarian economy.

Scientific agriculture in its more specialist guise came soon after the last generation of early modern improvers passed. The increasing formation and populist appeal of agricultural societies beginning in the second quarter of the nineteenth century was only indirectly related to the imperial notion of improvement which continued to inform settler colonialism in overseas empires into the twentieth century. Agricultural societies in Britain, Canada, and the United States whose scope was national were more effective and their cast more similar to modern scientific agriculture, in part, because they undertook projects delimited by professionalized practice. By the mid-nineteenth century, New England, and Boston in particular, had become the center of scientific activity in North America, particularly in natural history. When modern naturalists or scientific agrarians undertook to study the region's topography or improve its soils or livestock, they were not also attempting to secure territorial rights for the Crown or manage the resettlement of migrants from overseas, nor did they have the power to do so.

Yet their predecessors' endeavors in scientific agriculture and improvement were the foundation of nineteenth century understandings of progress, particularly a progress visible in landscape changes. Studying agricultural improvement has allowed me to explore questions about the intersection of intellectual and social history, and is a framework crucial for understanding the history of colonization and the legacies of European imperialism—both in North America and throughout the world—in which the

role of expertise and the imperatives of modernization continue to underlie prevailing ideas about proper land use and the naturalized rights of settlers to their lands.

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