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George Colpitts, *Pemmican Empire: Food, Trade, and the Last Bison Hunts in the North American Plains, 1780–1882* (Cambridge: Cambridge University Press, 2014). ISBN: 9781107044906

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Introduction by Christopher F. Jones, Arizona State University

In the popular imagination, eighteenth century fur traders are often imagined as burly men with strapping muscles. Yet as **George Colpitts** vividly describes, the energetic demands of crossing Canada's vast landscapes to reach fur country left their bodies sapped and depleted. Burning thousands of calories a day paddling canoes and crossing portages, fur traders could lose twenty pounds or more in the course of a season's exertions. Their emaciated bodies revealed clearly that the westward expansion of European settlers could not be achieved with securing an adequate source of sustenance. Empire, in short, required food. In Canada's eighteenth and nineteenth century fur trade and territorial conquest, this need was met by pemmican: a mixture of dried meat and fat from bison sometimes supplemented with dried berries. The **Pemmican Empire** that emerged, Colpitts demonstrates, had enormous consequences for European expansion, indigenous groups, and the environments of western Canada.

For thousands of years, indigenous populations had supported themselves by producing pemmican. In a cool region producing minimal food, it offered at least two highly desirable traits: pemmican was incredibly energy-dense—containing as much as 3,500 calories per pound—and it could be stored indefinitely in the cool temperatures of the northern plains. Yet for native populations such as the Cree, Crow, or Blackfoot, pemmican was never reducible to its energetic content: it represented an important part of social and cultural life. Moreover, it served as an integral part of exchange relationships both within and between populations. The common custom of freely giving away pemmican to those in need served to create connections between various groups and to provide a degree of reciprocal food security in an unforgiving landscape.

The trade in pemmican, as with most aspects of life, changed enormously with the introduction of fur traders of European descent. Eventually coming under the control of the Hudson Bay Company, the pemmican market transitioned from a moral economy into a financial set of exchanges governed from London. The scale of bison hunts expanded enormously and pemmican began to be produced under factory-like conditions. This energetic abundance helped enable white settlers to control a new region while also encouraging the overhunting of bison populations. This compelling book, therefore, offers fresh perspectives on food, empire, and ecology.

Claire Campbell opens the roundtable, reflecting on the numerous connections between past and present in the study of food and energy. Author of *Shaped by the West Wind* and multiple edited works, her research has examined various aspects of Canadian environmental history.¹ Her current project involves integrating environmental history into sites of historic preservation.

¹ Claire Campbell, *Shaped by the West Wind: Nature and History in Georgian Bay* (University of British Columbia Press, 2005).

An environmental historian who has studied the decline American bison populations, among many other topics, **Andrew Isenberg** acknowledges in his review that he brings strong opinions to the topic.² He disagrees with some of the arguments in *Pemmican Empire*, and in his author response, Colpitts expresses his own reservations about Isenberg's challenges. The opportunity to discuss different interpretations of important historical processes is one of the great features of this roundtable format, and both Isenberg and Colpitts offer—if the pun can be excused—substantial food for thought.

A distinguished scholar of Canadian rural and environmental history, **Ruth Sandwell's** review helps place *Pemmican Empire* in the historiographies of energy and the fur trade. Author of numerous books and articles, she has been at the center of a remarkable and exciting surge in Canadian energy history over the last several years, including editing a forthcoming volume surveying the topic.³

Last but certainly not least, **Thomas Finger** raises important questions about empire as an analytical category. A historian of the transatlantic wheat trade, he shares with Colpitts an interest in food as both an energy source and as fuel for the expansion of European power. His research reveals a dynamic interplay between British capital, the financing of American railroads, flows of wheat, and the bodies of industrial workers.⁴

Before turning to the first set of comments, I would like to pause here and thank all the roundtable participants for taking part. In addition, I would like to remind readers that as an open-access forum, *H-Environment Roundtable Reviews* is available to scholars and non-scholars alike, around the world, free of charge. Please circulate.

² Andrew Isenberg, *The Destruction of the Bison: An Environmental History, 1750-1920* (Cambridge University Press, 2000). See also, Andrew Isenberg, ed. *The Oxford Handbook of Environmental History* (Oxford University Press, 2014).

³ Ruth Sandwell, *Powering Up Canada: A Social History of Power, Fuel and Energy from 1600* (Montreal and Kingston: McGill Queen's University Press, 2016);

⁴ See, for instance: Thomas Finger et al, "The Nature of Power," *Technology & Culture* 52 (2011): 246-59.

Comments by Claire Campbell, Bucknell University

It is not every book that has me reading aloud from the dining room table.

“Apparently trade pemmican tasted like candle wax and bed feathers.”
(My husband: “Mmmmm. Candle wax and bed feathers.”)

“Wow. The usual daily ration for Rupert’s Land was eight to twelve pounds of meat a day ...”
 (“Now we’re talking!”)

“... but in the winter of 1813, settlers were given just six pints of oatmeal.”
 (“Mmmmm. Oatmeal.”)

I began reading *Pemmican Empire* while finishing my “indulgence” read of the summer: Barbara Kingsolver’s 2007 *Animal, Vegetable, Miracle: A Year of Food Life*. One is the story of a family who tries to eat only locally grown food for a year, much of it from their own land in southern Virginia. The other is a story of how corporate expansion two hundred years ago transformed a regional food into an industrial one, catapulting peoples and ecosystems into turmoil in the process. The contrast – and the connection – was stark. Kingsolver and her family were trying to counter, or at least step outside, the institutional and ideological framework that Colpitts describes coming into being.

Like many of us, I suspect, I think about food a bit more these days, as a small intervention I can make towards more sustainable practices. Buy local, buy organic, buy seasonal. Go to the farmers’ market; ask for more local produce at the grocery store. But *Pemmican Empire* blows the story wide open, across miles and time and peoples. It’s the story of a food source that was at once local and global, indigenous and colonized, gifted and capitalized, sustaining and unbalanced. And it shows us how food is deeply interwoven with the history of the North American west, its indigenous peoples, and, most disconcertingly, what Hudson Bay Company governor George Simpson called “the whole machine” (190) of corporate colonialism.

When I taught Environment, Sustainability, and Society at Dalhousie University, we decided that food was a good theme for the first-year class. Everybody has to eat, after all, and stopping to consider where that apple comes from – why New Zealand instead of Starrs Point, Nova Scotia? – is an accessible way into complex, global, “wicked” environmental problems. (As well as quirky trivia for reading aloud at the dining table.) This is something that *Pemmican Empire* does particularly well: move between scales of the immediate and the continental, the tangible and the abstract. So at the start we learn what exactly pemmican is. I blush to admit that from childhood canoe lore I had a vague idea of some kind of combination of buffalo meat and berries, but in fact, the critical qualities of the best, traditional or “sweet,” pemmican is the combination of fats and marrows from numerous organs and body

parts, how they work in complement, and how they translate into caloric energy suited to the particular demands of human energy needed to transport goods across the continent. A single animal was thus processed into commodity, which fueled, literally, the extensive and expansive “sinews of colonial power” (3).

This is something else that *Pemmican Empire* does so well: remind us that food energy is an engine of history, propelling the narrative, joltingly, forward. The fur trade relied on the mechanical energy of human arms and legs. Paddling and portaging canoes furiously upriver and uphill from Hudson Bay or Lake Superior, across the rocky Canadian Shield, left men exhausted and woefully undernourished on a diet of corn, biscuit and lard (“Mmmmm! Biscuit and lard!”). They had gone as far as their diet would let them; in other words, they had reached the geographical extent of one kind of food regime. But as traders stumbled out onto the plains, they encountered new trading practices in food sharing, a new food source in bison meats and fats, and a new supply system in winter pemmican making. This, as they say, was a whole new ball game. The energy-dense pemmican and its seasonal preparation suited perfectly an industry that needed to travel thousands of kilometres in a short summer season. As Colpitts writes, “There is no coincidence that the most violent, competitive period of the Northwest fur trade, approximately from 1780 to 1821, coincided with the release of comparatively vast amounts of this food energy” (57). (I did wonder: did the caloric energy fully cover nutritional health? You know what they say about a balanced diet...)

There are a number of leaps or turns in western history, especially settler history, that emphasize human ingenuity or effort: David Thompson crossing the Rocky Mountains, the arrival of the Red River settlers, or the merger of the Northwest Company and the Hudson Bay Company. But in this version it is food energy, its availability and its production, that both enables human action and commandeers it. As the companies push over the Athabasca watershed to the Pacific coast; as they recruit Ojibwa, then Cree, Assiniboine, and Blackfoot peoples into a summer hunt, completely inverting climactic and cultural norms; as the Métis emerge as a group defined in large part by their mastery of the market hunt; as new agents of colonialism, scientists and explorers and missionaries and settlers, pile onto the plains – all of these developments relate to, or depend on, the provision of an appropriate food source. Because, after all, everyone has to eat.

The provisions trade enabled other kinds of insatiable consumptions as well, based on a series of complementary, relative geographies. The bison of the plains and parkland fed brigades headed to the rich fur territories of the Athabasca district. American traders on the Upper Missouri in search of buffalo robes learned that the trade always began with meat, whether in gift or exchange. The “odd agricultural outpost of empire” at Red River (194) that eventually became a toehold for grain farming spent several decades centered on the buffalo hunt. The clearest sense of a discrete pemmican era, though, comes at its close, supplanted by a new energy regime: the railway.

In addition to an historical time, *Pemmican Empire* is very much about an historical space. After all, “empire” suggests territory as much as temporality. Colpitts argues the pemmican empire was a bioregion, defined by certain ecological features of the northern Great Plains that supported both bison populations and their hunt. The “edge” environment between plains and parkland to the north – so well described by Merle Massie’s *Forest, Prairie, Edge: Place History in Saskatchewan* (2014) – gave bison and their pursuers shelter and additional resources. But Colpitts’ particular interest is climate. The “climactic fault line” (59) sharpened the differences between winter (for fattening bison and herding them into pounds) and summer; and kept summers a bit cooler (giving more time for processing meat before it spoiled, although this still happened in mind-boggling amounts). The northern reaches of the trade also shrank the season of travel, pressuring the canoe brigades to paddle harder and faster in only a few months. Yet Colpitts refers to several years of “ideal conditions” during the pemmican wars (101-105), and as we begin to explore [historic climate](#) data, I wonder how the course of empire overlays longer climactic histories, as in the Little Ice Age and other fluctuations.

But the pemmican bioregion was not a purely physical space: it was shaped by the intersection of food supply and cultural practices, and accordingly, changed over time as human interests and agendas shifted and supplanted each other. Among the seminomadic peoples of the subarctic, and the Chipewyan, Cree, and Beaver facing the “comparative uncertainty” of hunting in the parkland edge (83), fur traders encountered a practice of food sharing that they would use to enormous benefit. What had been a pragmatic and relatively balanced practice of gifting to ensure survival – giving away surplus in moments of abundance, thereby indebting the recipient to aid you in future – became for Europeans a means of acquiring enormous surpluses for export. It was, as Colpitts points out, an inversion of the logic of native food systems (96). And it was the formula for industrial food in a global market: local product displaced from site and community of origin, produced for distant audiences and external profits.

As European mouths increased (apparently Highlanders had especially large appetites, 130 – hey! I resemble that remark!), the landscape was restructured to support these new demands. Colpitts notes the difference between the adaptable, negotiated food exchanges of Cree and Assiniboine and the factory system of depot and export; between indigenous movement and “posts, each fixed unnaturally in the landscape” (a great phrase), which could consume a thousand pounds of bison meat a day as early as the 1790s (108). Networks of trading posts now acquired, stored, and shipped pemmican as a commodity. The power of the Hudson Bay Company after 1821 came not from its monopoly, Colpitts argues, but its monopsony (or single-purchaser) buying power across the entire Rupert’s Land. It could buy in whatever sector was flush, keeping prices low, and then warehouse supplies at “pemmican hangers” (131) like Jack River/Norway House, shipping elsewhere as needed. *This* was its empire. The other lesson here is the effect on the food itself: sweet, gifted pemmican was replaced by waxy, unpalatable trade pemmican lacking

the proper fats, cheapened and diluted in mass production. The analogy with modern systems of mass cultivation, distribution, and marketing is inescapable.

More maps would help readers follow the numerous lines of hunt, trade, and conflict, and locate key landmarks across the west. For there were, even within this empire, alternative territories and rival geographies. Cree, Blackfoot, and Assiniboine negotiated complex and highly coordinated alliances for hunting and treaty. The Métis headed south and west from Red River, establishing longer hunting routes, *hivernant* wintering camps, through and into Sioux and other lands. It would be these shifting geographies that broke apart the Company empire (245).

Among its legacies, though, is the spatial and ideological framework of industrial food production. *Pemmican Empire* opens with the question: what happens when the food source becomes indistinguishable from the food product, when we forget that the pemmican came from a living organism (4)? Watching this story unfold left me with that feeling of dread, when you *know* how the story is going to turn out ... but there is also the historian's thrill at finding the origins and roots of the world we know. I live in East Buffalo Township; Buffalo Road links my town and the next; the mascot of my university is a bison. But there are, of course, no buffalo here. The living creature is now an abstraction, as it was when subsumed into a bag or block of pemmican. I've been thinking about the historical processes by which we detach from environmental realities for a new class I'm teaching on western landscapes and ranching, and the juxtaposition between the romantic image of the cowboy as a "gentleman of nature," and ... hamburger. (Mmmmm!)

There is also the troubling paradox of competition in the midst of plenty, and what it says about our historical inability to manage a commons. The usual thinking is that competition intensifies as supplies become scarce. But the "pemmican wars" were fought over *surplus*, as the Hudson Bay Company and Northwest Company each tried to acquire more and more supplies in their efforts to outrace the other into the Athabasca and Pacific districts. As Colpitts writes, "There really was no upper maximum to what they would purchase in order to undermine their rivals or to create capacity to energize far-flung and commercial expansion whether in the north, the northwest coast, or beyond" (141). Thus even when *able* to manage supply in a relatively coherent manner (as during the era of monopoly/monopsony), traders chose to *increase* consumption in hopes of *future* gain (152). What does this say about the sustainability of capital logic?

The pemmican trade consumed bison by the million, with huge wastes, debts, and dependencies. (How ironic that hunting expeditions grew so large that they had to carry tens of thousands of pounds of food ... while in search of a different kind of food.) We get only a glimpse of the massive amount of labour daily required by, primarily, aboriginal women. How odd, then, that this huge, corporeal, fundamental element of western history is almost completely absent from its public history. I certainly can't recall a fur trade post (of which there are many in provincial, state, and national historic sites systems) that foregrounds the bison hunt or pemmican

production. Perhaps it is the gruesomeness of large-scale slaughter: impossible to replicate, of course, but also at odds with our environmental and historical preferences. We do not wish to think of the golden prairie dotted with “veritable abattoirs, smelly, fly-besotted, and spilled over with fat and blood” (60), just as we do not wish to confront the ugliness of most industrial consequence.

I would like to know more about what George considers the lessons from this environmental past. Was there a moment when the pemmican trade was sustainable between European and indigenous peoples? Could the HBC have done something differently, during the stability of “the pemmican peace”? Likewise, he makes reference to Métis communities reverting to food sharing in times of scarcity (177). Were there paths not taken (or forgotten by most) on the prairie? And what does story say about economic diversification? He notes that Company efforts to introduce small manufacturing in Red River foundered, as hunters were drawn away by the “almost overshadowing bison presence to the west” (198). Is this a cautionary tale for resource communities: that reinvention is frequently impossible? I think of decades of attempts to greenhouse tourism in Cape Breton, which nevertheless may reopen a [coal mine](#) in 2015. Or Pennsylvania, deep in the grooves of coal, now chasing after natural gas. We wear grooves deeply and quickly. What works to graft new growth in old places?

True, the response I got most frequently these past few weeks was, “You’re reading about *what?*” And yes, you will learn plenty about bison fat. But as in most good history, the particular is a conduit to larger questions. Thinking of food as energy, food as process, and food as power gives me pause as I stand in the grocery store thinking about my own “food life.” *Pemmican Empire* is a wonderfully sweeping story that fixes a sharper lens on the North America that we inhabit today. And that, I think, is the mark of a good environmental history.

Comments by Andrew Isenberg, Temple University

In March 2000, when my first book, *The Destruction of the Bison: An Environmental History, 1750-1920*, was published by Cambridge University Press in its Studies in Environment and History series, transnational history was relatively new—not in its infancy, perhaps, but still in its toddlerhood. Only a few months before, in an important essay in the December 1999 issue of the *Journal of American History*, David Thelen had called for American historians to incorporate transnational perspectives into their work.⁵ Environmental historians, recognizing that microbes, climate, and fauna, among other things, transcend international boundaries, proved eager to adopt transnational perspectives. Alas, I had sent my manuscript off to Cambridge long before Thelen's essay appeared. Fortunately I had intuited enough of the new transnational approach to incorporate some of that perspective into my study of the bison.⁶ Still, my attention to the transnational aspect of the bison's story was incomplete, especially in the later chapters. If I were to rewrite the book today, or even if I had published it not in 2000 but in 2001, I would have taken a more explicitly transnational perspective on the subject.⁷

Another year to incorporate transnational perspectives surely would have deterred critiques of the book such as the one made by the environmental historian J.R. McNeill, who pointed out in a 2003 state-of-the-field essay that "Isenberg considers the Canadian contingent of the North American bison herd most cursorily." He compared *Destruction of the Bison* together with William Cronon's *Nature's Metropolis* to "some American TV weather maps, where everything, including advancing thunderstorms and high pressure cells, stops at the border."⁸ (I took solace at least in having my work paired with Cronon's Bancroft Prize-winning book, even for criticism.) Cambridge's Studies in Environment and History series has recently issued another environmental history of the bison by the University of Calgary historian George Colpitts, *Pemmican Empire: Food, Trade, and the Last Bison Hunts in the North American Plains, 1780-1882* (New York: Cambridge University Press, 2015). If McNeill, who became one of the editors of the Cambridge series in 2001, hoped that Colpitts would incorporate all of the North American plains into his analysis (rather than just into his title), however, he must be disappointed. In the face of the wide acceptance of the importance of transnational perspectives to environmental history in the last fifteen years, *Pemmican Empire* is determinedly parochial in its focus on the bison in what is now western Canada.

⁵ David Thelen, "The Nation and Beyond: Transnational Perspectives on United States History," *Journal of American History*, 86, (December 1999), 965-975.

⁶ Andrew C. Isenberg, *The Destruction of the Bison: An Environmental History, 1750-1920* (New York: Cambridge University Press, 2000), 13, 61, 141-142, 164-165, 182.

⁷ I took an explicitly transnational approach to grasslands in a recent essay: "Seas of Grass: Grasslands in World Environmental History," in Isenberg, ed., *The Oxford Handbook of Environmental History* (New York: Oxford University Press, 2014), 133-153.

⁸ J.R. McNeill, "Observations on the Nature and Culture of Environmental History," *History and Theory*, 42 (December 2003), 17-18, n.47

I mention that I am the author of an environmental history of the bison because it is only fair, when reviewing another book on the same topic, to make clear that I have strong views, in print, on the subject. I bring up my regret about not taking a more explicitly transnational approach to the topic because encountering new methodologies and, if we find them useful tools of historical analysis, rethinking the past through these new lenses, is central to the mission of academic historians. And I note McNeill's quite correct critique of my book because, of course, no work of history is perfect. Not least of all, I raise the absence of a transnational perspective in Colpitts's *Pemmican Empire* because it is indicative of the narrowness of his study as a whole.

Colpitts's blinkers are not just geographical but analytical and historiographical. His analysis is doggedly economic. "This environmental history examines the nature of the pemmican trade," he writes. "This book attempts to provide an understanding of how and why pemmican became a driving energy source in the British western territories, and the nature of a society that developed around the trading, use, and distribution of bison fats and meats." And, "from the 1780s onwards, it was the growing commercial demands for pemmican that became consequential to the bison's long-term and soon unsustainable human use." (2-3, 6) We learn a great deal about the technical aspects of the preparation of pemmican in this book, including such details as the ideal ambient temperature for making pemmican (warm enough for the fat to be viscous but not so warm that the meat becomes rancid). It is only toward the middle of the book and for a few brief paragraphs that Colpitts notes that much of this preparation was the work of women. (77-78, 81-82) He makes no effort, however, to analyze the place of women within native societies, or what their labor meant to their societies, or how the increasing demands of trade affected the status of women in bison-hunting societies (all subjects that feature largely in *Destruction of the Bison* and in the work of the anthropologist Alan Klein).⁹

Indeed, there is virtually no analysis of native cultures in *Pemmican Empire*: we learn almost nothing about what the bison meant to natives, other than that it was a food source. Not only does Colpitts have little to say about native cultures, but he ascribes little agency to natives. The pemmican empire was, in Colpitts's study, the creation of European fur traders. Natives produced pemmican in exchange for European goods, but they merely reacted, as consumers, to the entreaties of fur traders. Eschewing much of the work of historians (such as, notably, Richard White, in *Middle Ground*) who tried to understand native commerce with Europeans within native cultural contexts, Colpitts opts for the outdated idea that natives were forced into trade.¹⁰ European trade companies, Colpitts writes about the pemmican trade

⁹ Isenberg, *Destruction of the Bison*, 97-103; Alan Klein, "The Political-Economy of Gender: A 19th-Century Plains Indian Case Study," in Patricia Albers and Beatrice Medicine, eds., *The Hidden Half: Studies of Plains Indian Women* (New York: University Press of America, 1983), 143-173; Klein, "The Plains Truth: The Impact of Colonialism on Indian Women," *Dialectical Anthropology*, 7 (1983), 299-313.

¹⁰ Richard White, *The Middle Ground: Indians, Empires, and Republics in the Great Lakes Region, 1650-1815* (New York: Cambridge University Press, 1991).

after 1815, “tried to bully their way farther into fur territories, used discounted prices to strong-arm Native hunters trading furs and food, and, in fragile subarctic environments, paid hunters to create buffer zones between themselves and competitors.” (101) Colpitts’s emphasis on the agency of European traders, which renders the natives as largely passive trade partners, is in part evidentiary: much of his documents are from the Hudson’s Bay Company Archives.

Had Colpitts taken a more careful account of the historiography of the bison, his study might have reflected a greater awareness of gender, native agency, culture, and, not least of all, the environment itself. Yet Colpitts’s attention to important work in environmental history is glancing: he ignores or misreads much of the work on the bison. “The near-extirmination of the animal,” he writes in his Introduction, “is usually explained in reference to the skin and robe trade in the United States, where unrestrained competition set Indian and American hunters against the herds, especially after the 1850s.” (5) That assessment says more about Colpitts’s almost exclusive interest in trade than in the historiography of the bison. Indeed, it is hard to imagine a less accurate summary of the work of the environmental historians who studied the bison in the 1990s than this one. One of the intriguing problems that Dan Flores, James Sherow, Elliott West, Richard White, and I (among others) wrestled with in our work on the bison was the shared sense that market hunting alone was an insufficient explanation for the rapid collapse of the bison population. The numbers simply didn’t add up: the relatively few market hunters, both native and non-native, could not have been responsible for the deaths of so many bison over such a broad area. Moreover the decline of the bison population was underway well before the ascendancy of the market. We thus investigated how other factors including a dynamic climate, grassland ecology, wolf predation, bovine disease, habitat degradation, and the competition of other grazing animals were intertwined with hunting in the near-extinction of the bison.¹¹ Incorporating these ecological factors into the understanding of the fate of the bison reflected environmental history’s conviction that the environment is an agent and presence in history, and not merely a passive object of human exploitation.

In *Pemmican Empire*, however, the bison is just that: an object of market exploitation. Colpitts might have taken a cue from other environmental histories of the bison and considered how environmental factors contributed to the near-extinction of the bison in what is now western Canada. He writes in his Introduction that “environmental factors such as drought, rising plains and Métis hunting

¹¹ Dan Flores, “Bison Ecology and Bison Diplomacy: The Southern Plains from 1800 to 1850,” *Journal of American History*, 78 (September 1991), 465-485; James E. Sherow, “Workings of the Geodialectic: High Plains Indians and Their Horses in the Region of the Arkansas River Valley, 1800-1870,” *Environmental History Review*, 16 (Summer 1992), 61-84; Richard White, “Animals and Enterprise,” in *The Oxford History of the American West*, ed. Clyde A. Milner II, et al. (New York: Oxford University Press, 1994), 247-249; Elliott West, *The Way to the West: Essays on the Central Plains* (Albuquerque: University of New Mexico Press, 1995), 51-83; Isenberg, “Social and Environmental Causes and Consequences of the Destruction of the Bison,” *Revue Française d’Études Américaines*, 70 (Octobre 1996), 15-27.

populations, and, possibly, introduced bovine diseases, joined with the growing maul of food market hunting to end the buffalo era.” (6) Yet in the body of the book, we read little of any factors other than market hunting. Colpitts does not question what he calls the “generally accepted” idea that “the pemmican food trade supporting the northern fur companies was responsible for most of the annihilation of the ‘Canadian’ bison herds north of the Missouri.” (2) Yet at the same time he does not demonstrate that the pemmican trade could have made much of an impact on the bison population. He asserts that “the quantity of bison flesh consumed, bagged, and shipped out of the Winnipeg Steppe, even by 1798, surpassed a million pounds annually.” (60) That seems like a lot, until one thinks about how many actual bison that figure represents. Just one bison provided enough meat to fill one ninety-pound *taureau* of pemmican. A million pounds of pemmican thus represented only just over 11,000 bison. For comparison’s sake, the roughly 60,000 nomads of the plains in the mid-nineteenth century killed about 400,000 bison per year for subsistence alone. Wolves probably killed between one and two million every year.¹² In the big picture, 11,000 bison slaughtered every year to feed the sparse population of Hudson’s Bay and North West Company fur traders was an insignificant factor in the near-extinction of the species.

Despite the sweeping title of the book, this is not a big-picture study. Colpitts cites the influential environmental historian Arthur McEvoy several times in *Pemmican Empire*, but in his reading of McEvoy he missed one of the central lessons of his work. “Ecology, production, and cognition, evolve in tandem, each partly according to its own logic and partly in response to changes in the other two. To externalize any of the three elements,” McEvoy wrote, “is to miss the crucial fact that human life and thought are embedded in each other and together in the nonhuman world.”¹³ In its disregard for McEvoy’s call for an integrative approach to environmental history that sees ecology, economy, and culture as inter-embedded; in its disinterest in transnational history or ethnohistory or gender history; in its slighting of native agency; in its almost singular focus on the economic exploitation of resources, *Pemmican Empire* largely ignores many of the most innovative approaches to environmental history and the native-European encounter in the last thirty years.

¹² See Isenberg, *Destruction of the Bison*, 83-84.

¹³ Arthur F. McEvoy, “Toward an Interactive Theory of Nature and Culture: Ecology, Production, and Cognition in the California Fishing Industry,” in Donald Worster, ed., *The Ends of the Earth: Perspectives on Modern Environmental History* (New York: Cambridge University Press, 1988), 229.

Comments by Ruth Sandwell, University of Toronto

George Colpitts' *Pemmican Empire: Food, Trade and the Last Bison Hunts in the North American Plains, 1780-1882* makes a welcome and original contribution to North American history. The book examines a particular moment in northern plains' and indeed Canadian history: the dramatic rise and then fall of the trade in bison products that marked the end of the fur trade era, the beginnings of European agricultural settlement, and the near extinction of the massive bison herds and the human populations they supported. The book adds tremendously to our understanding of various strands and themes in the continent's history, increasing our knowledge of the plains' environment and the day to day working of the fur trade companies, and giving new insights into the various and changing human societies living, hunting, trading and traveling through the region. But Colpitts' most interesting and original contribution is arguably provided by the lens through which these various themes and events are brought into focus: the lens of energy, and more specifically, the centrality of food energy in an industry rooted in the organic energy regime. This review will begin by situating Colpitts' study more generally within (a very quick overview of) the long historiographical traditions of fur trade history in Canada. It will go on to highlight three particular ways in which the 'energy lens' deepens and broadens our understanding of this era, alerting us to the rich promise of energy history more generally.

Most Canadian school children know that the trade in furs in northern North America was an important part of the country's history. Images of burly voyageurs paddling their canoes or bateaux furiously on raging rivers or carrying hundred-pound packs over mosquito-infested rocky muskeg to trade with brave and wild First Nations are features in most Canadian elementary social studies textbooks. And indeed, the Canadian beaver (whose fur made the best top hats for fashionable eighteenth and early nineteenth century Europeans) is still commemorated on the country's five-cent coin. But aside from having an awareness of the glamour of the itinerant traders and perhaps the exotic intercultural trade with First Nations and Métis, most Canadians would be hard-pressed to articulate just how, exactly, the Canadian fur trade shaped or even fit into the history of the country. Fur trade history still sits at the very beginning of Canada's collective historical memory, focused as it on what used to be called the European conquest of North America, acting as a prelude to the real (i.e. European, agricultural and industrial) story of Canada's progress from colony to nation.

This narrative has long received a more serious gloss from Canadian professional historians, however, who have demonstrated the fur trade's important economic and political role as an early part of the massive international migration out of Europe that John Weaver has termed "the great land rush."¹⁴ From the sixteenth century, European explorers moved into the continent up the Saint Lawrence

¹⁴ John Weaver, *The Great Land Rush and the Making of the Modern World, 1650-1900* (Montreal and Kingston: McGill-Queen's University Press, 2003).

searching for gold, silver, a northwest passage to Asia, religious converts and agricultural lands on which to establish neo-Europes. They quickly discovered that the cold climates and thin, rocky, water-logged, often frozen and insect-infested lands of Canada's largest landmass, the Canadian Shield, did not offer the same opportunities for settlement as did the lands 'opening up' for agricultural settlement to the south of the Shield. And at that time they did not find its silver and gold reserves either, which were less accessible than those in Central America. But the same environment that made agriculture nearly impossible nurtured instead a range of mammals with particularly thick furs, and human populations not only highly skilled in trapping and skinning these animals, but interested in trading their furs for other services and commodities.

Mid-twentieth century historian Harold Innis was one of the first to integrate the fur trade into foundational themes in Canadian economic history, and one that emphasized the importance of environment. He found in the fur trade an early, but not exceptional, example of the country's distinctive reliance on the export of staples—natural resources—as the foundation of economic growth.¹⁵ Early staples included fish (off the Grand Banks of Newfoundland), then furs, then timber and wheat, and later oil and gas, all harvested locally and sold, usually unprocessed, into international markets. He argued that these exports provided the initial economic stimulus that eventually allowed more complex regional and local markets to develop within Canada, and continued to provide a strong economic foundation. Later generations of historians questioned the pivotal role he gave to export markets, arguing that local and regional markets were as important as international in stimulating economic growth after the initial stimulus.¹⁶ But no one today (particularly when the recent fall in oil prices has put the country's economy into a tailspin) can dispute the key role that the extraction of primary products has long had on the Canadian economy.

But by the 1970s and '80s, historians were already much less interested in patterns of economic growth in modernizing Canada than they were in the social, cultural and political implications of European-Indigenous contact itself, particularly in the First Nations peoples whose role in the trade and in Canadian history generally had, they argued, been unfairly marginalized. In 1977, Sylvia van Kirk published her seminal article "Women in Between: Indian Women in Fur Trade Society in Western Canada," followed a few years later by *Many Tender Ties*. She argued that while historians had previously focused almost exclusively on the activities of the fur trade companies and their French and English (male) employees and managers, the

¹⁵ Harold Innis, *The Fur Trade in Canada* (Yale University Press: 1930; University of Toronto Press, 1999); Cole Harris, "The Spaces of Early Canada," *Canadian Historical Review*, Vol 91, no. 4, December 2010, 725-759.

¹⁶ see particularly Douglas McCalla, "The Wheat Staple and Upper Canadian Development" the Canadian Historical Association Historical *Papers* 1978. For an overview of the debate over the staples thesis, see R.W. Sandwell, "Rural Reconstruction: Towards a New Synthesis in Canadian History," *Histoire Sociale/Social History*, 27, 53 (May 1994):1-32 and *How Agriculture Made Canada: Farming in the Nineteenth Century* (Montreal and Kingston: McGill-Queen's University Press, 2012)

fur trade could not be fully understood without understanding the central role that native women played in the trade. Not only did women nurture and support European traders who found it difficult to travel over or survive in unfamiliar northern landscapes, but women facilitated the all-important trade relations that were, she argued, negotiated through complex kinship networks, including country marriages.¹⁷

Robin Fisher's 1977 *Contact and Conflict* explored other aspects of First Nations' active role and agency in the fur trade. He argued that Europeans' near-total reliance on Native skilled labour for both hunting and "processing" furs gave First Nations a very strong position at the bargaining table, distinguishing Canadian trade relations sharply from those south of the border.¹⁸ Fisher and van Kirk were among the first as well to periodize the fur trade, arguing that First Nations' relative power in their trade with Europeans declined over time. European participation in the fur trade changed trading alliances, and the resulting wars were intensified when guns and horses were added to the mix. European diseases took a terrible toll, and dramatic population losses changed the nature of Indigenous society, contributing another factor in the changing balances of power in the 'new' world. Overhunting led to decreasing supplies of furs as First Nations became increasingly dependent on trade, and at the same time that their access to traditional foods was increasingly compromised by the advance of European settlement and the establishment of agricultural lands. A wealth of studies into First Nations history in the last twenty-five years has added tremendously to our understanding of the ways in which the fur trade and Indigenous history were vitally intertwined.¹⁹ As Sarah Carter, R. Cole Harris, Arthur J. Ray, and James Daschuk have forcefully argued, an important part of that story was starvation. First Nations' declining access to food could, by the late nineteenth century, be counted as a widespread tragic consequence of European occupation of northern North America.

George Colpitts' *Pemmican Empire: Food, Trade and the Last Bison Hunts in the North American Plains, 1780-1882*, picks up a number of these themes, and makes a welcome addition to a growing literature on the fur trade, on Native Non-native relations, and environmental history in northern North America. Many historians

¹⁷ Sylvia van Kirk, "Women in Between: Indian Women in Fur Trade Society in Western Canada" Canadian Historical Association *Historical Papers*, 1977; van Kirk, *Many Tender Ties: Women in Fur Trade Society 1690-1870* (Winnipeg: Watson and Dwyer, 1980)

¹⁸ Robin Fisher, *Contact and Conflict: Indian-European Relations in British Columbia, 1774-1890* (Vancouver: UBC Press, 1977, 1992). For an overview of the important role that First Nations continued to play in the emerging economies of nineteenth and twentieth century Canada, see John Lutz, *Makuk: New History of Aboriginal-White Relations* (Vancouver: UBC Press, 2008).

¹⁹ Sarah Carter, *Lost Harvests: Prairie Indian Reserve Farmers and Government Policy* (Montreal and Kingston McGill Queens University Press, 1990); Arthur J. Ray, *Indians in the Fur Trade: Their Role as Trappers, Hunters, and Middlemen in the Lands Southwest of Hudson Bay, 1660-1870* (Toronto: University of Toronto Press, 1998); R. Cole Harris, *Making Native Space: Colonialism, Resistance and Reserves in British Columbia* (Vancouver: UBC Press, 2002); James Daschuk, *Clearing the Plains: Disease, Politics of Starvation, and the Loss of Aboriginal Life* (Regina: University of Regina Press, 2013).

have recently been drawing heavily on various manifestations of oppressive colonial relations, particularly legal, cultural and economic ones, to explain the devastation of Plains peoples that followed in the wake of bison's near extinction in the second half of the nineteenth century. Colpitts looks instead to changes in energy use; this is, in effect, an energy history set in the organic energy regime of the fur trade. His focus is on the food that fuelled the endosomatic (human powered) pre-fossil fuel economies of First Nations, Métis and European fur traders in this era. Placing energy at the centre of the narrative casts the actors—company men, native women, Plains tribes, the bison and the Plains environment—in a new light, deepening our understanding of people's changing relationship with each other and the environment in the process.

In the preindustrial regime, Colpitts explains, endosomatic energy was the norm, accounting for as much as 80% of all the mechanical energy transforming the environment (30). What was distinctive about the early fur trade, he argues, was that it necessarily took place in the vast area of the Canadian Shield that was not only remote from European markets, but it was a trade acted out in an environment best defined as having a very low-carrying capacity in terms of supporting human, and indeed mammalian, life. It was, therefore, "a logistic nightmare" (26) for Europeans to provide the food needed to provision the labourers whose muscle power paddled and portaged the canoes and bateaux, often thousands of miles, to trade furs from deep within the continent and transport them to the international transportation links on Hudson Bay and the St. Lawrence River. For before the 1790s, fur trade employees had relied on a traditional European working-man's diet of beef and corn to fuel their trade, most of it imported in 50 gallon barrels from overseas. Not only was this food expensive, heavy and cumbersome to transport across the Shield, but, as Colpitts explains in interesting physiological detail, this diet simply didn't work very well as a fuel given the extreme conditions of physical exertion under which the voyageurs labored. Their energy needs were, quite simply, not being met. By the time fur brigades reached the Prairie steppe, "commercial enterprise had reached the limits of an insufficient corn-based diet" (21). Contrary to the image of swashbuckling voyageurs, by the time they had crossed the inhospitable Shield, the men were starving and could go no further.

Colpitts argues that it was the European discovery of and trade in pemmican, a vital source of food for the Plains people, that allowed fur trade companies to finally break through that Winnipeg barrier and extend their trade into the vast area of rich furs far to the northwest. "This food did not merely have a different taste," he explains, but "from a metabolic point of view, pemmican offered fantastic new orders of food energy, and propelled commercial expansion at a far higher pace than corn-based diets had previously" (21). Made of a mixture of dried and pounded buffalo meat, melted buffalo fat and sometimes dried berries, pemmican quickly became the food product of choice. An excellent source of food energy for the work of First Nations and fur traders alike in the northern environment, it was (not surprisingly) particularly well-suited to production in sub-Arctic Canada as well. First Nations men were skilled at hunting buffalo from the huge herds roaming the

plains, and First Nations women were highly skilled in pemmican production, drying meats, preparing fats, and making the sacks within which it could be transported and stored almost indefinitely. Cooler summer temperatures in the region meant that fats did not turn rancid and unusable during the processing period, as they tended to do further south. By the early nineteenth century, First Nations production of pemmican to fuel the trade had reached industrial levels. Colpitts provides abundant evidence to support his argument that the fur trade became, in important respects, a trade in the food energy driving it, and fur trade posts became pemmican manufacturing centres. Colpitts includes some fascinating details about pemmican's role in supporting not only the fur trade but Arctic exploration as well, including in the ill-fated Franklin Expedition. I would be interested in learning more about pemmican's role in this other arm of imperial expansion, the search for the Northwest Passage.

In addition to providing persuasive evidence of the nature and pivotal role of the pemmican provisioning trade in the rapid expansion of the early nineteenth century fur trade, Colpitts also gives us considerable insight into the ways in which the fur trade worked as part of the complex cultures of food sharing that characterized the northern Plains peoples. Colpitts argues that Plains people were not, as some have suggested, defined by the superabundance of their food source, the bison; instead, he draws on anthropological evidence to suggest that their political economy was underscored by periods of food shortage and even starvation. The "greater uncertainty of winter hunting" not only made plains peoples hunting generalists, relying on elk and moose, but it also "made them consummate traders, alert to the possibilities and benefits of food trading for their long-term survival." (74) It was not the market for European furs, he argues, but traditions of food sharing that motivated their trade with the newcomers. Not that the European newcomers necessarily understood the conditions of trade, at least at first. Traditions of food sharing meant that those with food shared what they had freely and equally with those they encountered; the generosity of the first Plains peoples in sharing food and giving other gifts to senior company officials astonished the fur trade men. Fur traders did not immediately get the idea of the kinds of trade-offs that they would be required to make in return. For example, in the early stages of the pemmican empire, the Cordoniers Ojibwa, going to the war with the Mandans in 1798, "left their children and women with James Sutherland, now master of Brandon House, 'a heavy burden,' he fretted." Even after the men returned at the end of the season to join the women and children, Sutherland reported that they were "lying here still a lazy sett will not hunt and says we have a right to maintain them." (78). As Colpitts sums up, "what these bands practiced was not a form of tit-for-tat bartering for food, but a cycling of gift and counter gifts" within some clear cultural parameters to which fur traders were obliged to adapt. (80) Women's role in pemmican production, as well as their role in cementing other social and sexual aspects of trade, helps to explain the large number of women and children at the fur trade posts in the nineteenth century. While Colpitts does a very good job of explaining the key role that women played in supporting individual men and trade relations, I would like to hear more from him about the role of women within Plains cultures more generally. In light of

the importance given to the changing role and status of women in the fur trade by historians from Sylvia van Kirk to Sarah Carter,²⁰ I am particularly curious to hear more about the role of gender in those devastating years of the bison' decline.

Pemmican Empire convincingly argues that pemmican drove the expansion of the fur trade empire, showing us how Plains peoples' food sharing culture shaped and directed the trade, and the extent to which European posts benefitted from an "ecology favoring food sharing." (94) Colpitts' focus on food energy also allows us to understand the dramatic changes in the Plains' nineteenth century economy and ecology in a different way. As the a factory system of pemmican production was adopted by Plains peoples, and a monopolistic market system of food exchange eventually imposed, the fragile balances that comprised Plains ecologies and cultures were eventually destroyed. The intensification of pemmican production at first contributed significantly to the ethnogenesis of the Métis people, and the high prices that pemmican demanded began the process of integrating First Nations and Métis alike into market relations. Highly competitive fur trade companies were eager to lay in as much pemmican as possible. Looking to a time when possible shortages might push up the price they needed to pay for pemmican, companies urged First Nations and Métis into the production of huge surpluses of the super-food energy, surpluses that were "squirreled away" in ice and meat sheds, "shuttling quantities in season to depots and finally exporting it out of the region altogether" (94). "There is no coincidence," Colpitts argues, that this new and powerful form of food energy ushered in the most violent and competitive period in fur trade between 1780 and 1821, as pemmican, "allowed companies to deliver more goods to Native people, more alcohol and guns." Because fur trade companies were competing with each other, they could "incite more violence, overtrapping and overhunting" (57). As Colpitts puts it, "with pemmican power they tried to bully their way farther into fur territories, used discounted prices to strong-arm Native hunters trading furs and food, and, in fragile sub-arctic environments paid hunters to create buffer zones between themselves and their competitors" (101). Increased warfare, game and fur 'deserts,' accompanied the rapid expansion of the buffalo hunt, which began to last longer and occur over a bigger area, ranging farther from home in what were essentially large and well-armed hunting armies. "Warfare, increased hunting, and new levels of competition between hunters, then, remade the native world. A market economy lay siege to a now much smaller bio-region" (193-4).

After the amalgamation of fur trade companies in 1821, the Hudson's Bay Company enjoyed 'monopsony' or single-purchaser power. By 1826 it had full control over pemmican prices, which fell to a quarter of what they had been two decades before.

²⁰ Most recently, Sarah Carter, *The Importance of Being Monogamous: Marriage and Nationbuilding in Western Canada to 1915* (Edmonton: Athabasca University Press and the University of Alberta Press, 2008).

No longer able to negotiate the terms of trade, Plains people faced the “double edges of a fearsome sword: suppressed and unmoving provisions prices on the one side and a growing need for European goods, especially guns, ammunition and other weaponry now that the plains country was thoroughly violent in warfare” (151). With the price of pemmican falling, by 1838 the Company’s pemmican surpluses amounted to some 73,000 lbs. The price of a sack of pemmican (requiring “the meat of three buffaloes and the fat of six” 186) fell to 6 cents by 1861. Plains’ peoples only recourse was to hunt more bison. Métis hunters organized their “first large scale and highly destructive summer hunting,” where the slaughtering of pregnant bison combined with more wasteful industrialized production techniques to cause a rapid decline in the bison population, which in turn urged hunters to slaughter more bison in order to obtain the increased amounts of pemmican they now needed to trade (152). By the mid-nineteenth century, the Hudson’s Bay Company began to force the Cree and Assiniboine hunters out of the trade, in favor of the ever-more efficient Métis hunting parties.

Looking for other markets, buffalo hunters turned to the buffalo robe trade to supplement their support, until prices fell in that industry as well. Markets for bison wool, tallow and the delicacy bison tongue created yet more wasteful slaughtering. Although urged to rely more heavily on the civilizing agricultural foods, Plains people were discouraged by the environmental conditions of the southern Plains, where frequent flooding, extreme and unpredictable weather, and crops susceptible to early frosts limited the appeal of agriculture. Plains people continued to be overwhelmingly dependent on meat for their diets. As food supplies dwindled along with the declining trade, Plains people began to starve.

As Colpitts concludes, the Hudson’s Bay Company benefitted greatly from the food-sharing cultures of the buffalo commons: “the British enjoyed cheap and... seemingly inexhaustible food source to underwrite commercial expansion, improved transportation and the beginnings of colonization.” (189) The transformation of the buffalo commons into a marketplace where buffalo products could be freely acquired was, however, devastating for the buffalo and the human cultures it had sustained for millennia, as well as to the fur trade itself. With the plains cleared of the bison herds that were anyway incompatible with agricultural settlement, and with the Plains ecology and peoples no longer relevant to the already declining fur trade, the Hudson’s Bay Company sold their vast territories to the new country of Canada in 1871. Colpitts’ argument is convincing: “in the case of the northern latitudes of the Great Plains, Western Canadian history was shaped by the arguably unique relationship of Native people with newcomers around food” (262). I hope that this study, which so persuasively argues the centrality of food energy to human history more generally, will inspire historians of other eras and places to contemplate the role of food energy in the other massive transitions of the nineteenth and twentieth centuries.

Comments by Thomas Finger, Northern Arizona University

There is much pemmican in George Colpitts' *Pemmican Empire*, but little in the way of Empire. In many ways, this is a good thing. Environmental history, economic history, and North American history have all revolved for many years around the command economies of European imperialism. Considerably less well known, however, are the dietary regimes that supported economic expansion by powering brain and muscle work of laborers the world over. *Pemmican Empire* offers an accessible and powerful reminder that food matters in history. Colpitts takes readers on a journey into the world of pemmican production - the fats, the hunting, the trading - because without this caloric base, European traders could simply not have journeyed so deep into the North American continent to trade. As Colpitts highlight, the dietary and economic regimes underpinned a "little e" empire in the vast Canadian Shield: a new set of market relationships that ultimately resulted in the gradual loss of resources and land by indigenous peoples. There is, however, a "Big E" empire that often remains behind the scenes in the narrative: the British Empire. Colpitts focuses much of his attention on the "little e" empire: an internal, informal set of relationships akin to how Donald Worster framed the concept of empire in his influential *Rivers of Empire*.²¹ While reading this tight and readable account of the pemmican bioregion, one that is an excellent companion to the already-robust literature on bison hunting, I found myself often returning to the question of internal vs. external, asking myself repeatedly, "how does the pemmican empire stretch all the way back to London and into the British imperial state?"²²

Pemmican Empire's focus on food reminds us that colonialism was and is powered by food landscapes, that food was often a central medium on the commoditization of indigenous land.²³ It argues that climatic conditions shaped two indigenous food systems across the American plains: one centered on dried jerky to the warmer south and one centered on pemmican in the cooler north.²⁴ In the north, climate and indigenous subsistence practices came into contact with European search of profits

²¹ Donald Worster, *Rivers of Empire: Water, Aridity, and the Growth of the American West* (New York: Pantheon Books, 1985).

²² Dan Flores, "Bison Ecology and Bison Diplomacy: The Southern Plains from 1800 to 1850," *The Journal of American History* 78, no. 2 (September 1, 1991): 465-85.; E. West, *The Contested Plains: Indians, Goldseekers, and the Rush to Colorado* (Lawrence: University of Kansas Press, 1998); and Andrew C Isenberg, *The Destruction of the Bison: An Environmental History, 1750-1920* (New York: Cambridge University Press, 2000) are the seminal works on the subject.

²³ Calvin Martin, "The European Impact on the Culture of a Northeastern Algonquin Tribe: An Ecological Interpretation," *William and Mary Quarterly* 31, no. 1 (January 1974): 3-26; Arthur F McEvoy, *The Fisherman's Problem: Ecology and Law in the California Fisheries, 1850-1980* (Cambridge: Cambridge University Press, 1986); J.C. Miller, *Way of Death: Merchant Capitalism and the Angolan Slave Trade, 1730-1830* (Madison: The University of Wisconsin Press, 1988); Richard White, *The Roots of Dependency: Subsistence, Environment, and Social Change among the Choctaws, Pawnees, and Navajos* (Lincoln, NE: University of Nebraska Press, 1988).

²⁴ George Colpitts, *Pemmican Empire: Food, Trade, and the Last Bison Hunts in the North American Plains, 1780-1882* (New York: Cambridge University Press, 2015), 8.

in a fur trade increasingly dominated by consideration of travel distance. Two European companies - the Hudson's Bay Company (HBC) and the Northwest Company (NWC) - had to engineer a food system to support the extension of fur trading along trade routes that often left traders on the verge of malnourishment. Soon, the HBC in particular found the answer in a "high calorie regime based on bison flesh."²⁵ According to Colpitts, "pemmican allowed companies to deliver more goods to Native people, more alcohol, more guns, and, because they were competing with each other, incite more violence, overtrapping and overhunting around nations inland. The shift into this new energy source, then, not only tripped off further commercial expansion, but also changed ways of life forming around a new endosomatic energy regime."²⁶ Tapping into indigenous supply networks, HBC trade began to transform them to conform more to the supply needs of particular trading houses rather than the seasonal pulse of fat availability. By the middle of the nineteenth century, the HBC operated a monopsony, controlling price and supply through its status as single buyer. Soon, overhunting driven by competition among hunters for company trade left bison herds destroyed. The bison frontier collapsed and, by the 1870s, an entirely new food regime organized around railroad depots and wheat rather than trading houses and pemmican sprang up in the region.²⁷

The greatest contribution of *Pemmican Empire* is to remind scholars and students at all levels that food availability was a first-order problem in the eighteenth and nineteenth centuries. Food shortages wracked frontiers and imperial cores all over the globe well into the nineteenth century (and, indeed, to this day).²⁸ In this analysis, Colpitts joins a budding group of scholars that are assessing the energetic and nutritional components of western expansion. Many of these scholars look at feeding the European, specifically British, core.²⁹ *Pemmican Empire* focuses on nutritional changes at the periphery of European power. It is hard to imagine a

²⁵ Ibid., 21.

²⁶ Ibid., 57.

²⁷ Hiram M Drache, *The Day of the Bonanza: A History of Bonanza Farming in the Red River Valley of the North* (Fargo, North Dakota Institute for Regional Studies, 1964); Sterling Evans, *Bound in Twine: The History and Ecology of the Henequen-Wheat Complex for Mexico and the American and Canadian Plains, 1880-1950*, (College Station: Texas A&M University Press, 2007); Colpitts, *Pemmican Empire*, 260.

²⁸ Mike Davis, *Late Victorian Holocausts: El Niño Famines and the Making of the Third World* (London; New York: Verso, 2001); Charlotte Boyce, "Representing the 'Hungry Forties' in Images and Verse: The Politics of Hunger in Early-Victorian Illustrated Periodicals," *Victorian Literature and Culture* 40 (2012): 421-49; Courtney Fullilove, "The Price of Bread," *Radical History Review*, no. 118 (Winter 2014): 15-41.

²⁹ D.J. Oddy, "Food in Nineteenth Century England: Nutrition in the First Urban Society," *The Proceedings of the Nutrition Society* 29, no. 1 (1970): 150-57; Roger Scola, Alan Armstrong, and Pauline Scola, *Feeding the Victorian City: The Food Supply of Manchester, 1770-1870* (Manchester, UK: Manchester University Press, 1992); M. Ejrnaes, K.G. Persson, and S. Rich, "Feeding the British: Convergence and Market Efficiency in the Nineteenth-Century Grain Trade," *Economic History Review* 61, no. S1 (2008): 140-71; Craig Muldrew, *Food, Energy, and the Creation of Industriousness: Work and Material Culture in Agrarian England, 1550-1780* (Cambridge: Cambridge University Press, 2011); Chris Otter, "The British Nutrition Transition and Its Histories," *History Compass* 10, no. 11 (2012): 812-25.

robust beaver trade in the Canadian interior without the food to fuel the physical movement of traders across the low biotic carrying capacity of the Canadian Shield.³⁰ As Colpitts notes, it was alcohol and animal fat that provided the energy necessary for movement and, thus, trade. While pemmican and alcohol were no doubt central to the diets of traders, I wondered while reading if the author could tell us a little more about the role of forage and other foods obtained through trade.³¹ What is clear, however, is that heightened instances of starvation and hunger recorded in traders' journals speak to a larger barrier to European economic expansion.³²

Colpitts provides evidence for a strong link between company need and indigenous hunting. As company traders procured more food from indigenous hunters, the European ledger-style economy melded with traditions of food sharing and hunting that dispersed meat across the region. Soon, food began flowing directly towards company houses instead of cycling through the region in reciprocal trade.³³ Those houses enjoying pemmican surplus became the lynchpin of the HBC's plan to expand its trading operations. They became the centers of a new ecology of marketized food sharing, hybridized economies "supported by vast amounts of female labor" and dedicated to processing the carcass in ways that would satisfy company need for storage and travel.³⁴ Colpitts deftly traces how macroeconomic considerations of market, labor, and supply translate down all the way through indigenous societies into the very fat of the bison itself: market pemmican favored core fats which were less sweet than those favored in indigenous practices but were harder and preserved longer.³⁵ Colpitts thus displays what I think to be one of the most important aspects of historical food studies: the ability to traverse multiple scales by following the production, transmission, and expenditure of energy within and between bodies. Pemmican drove muscle power in individuals at the same time those individuals participated in the expansion of a large-scale economic systems and the reworking of food sharing customs. Along the same lines, when bodies were not powered with sufficient energy, labor suffered, customs deteriorated, and the profitability of entire economic systems was called into question.

I found myself most excited when following how Colpitts combined nutritional and sports science with archival evidence of food shortage to make a convincing case for food supply problems in the late eighteenth century fur trade.³⁶ The expansion of trade in the Canadian Shield was dependent on maintaining a balance between food intake and manual labor. As his use of science makes clear, it is not just the quantity of food that dictates the boundaries of trade, but also its internal composition and its use by the human body. Traders needed a packet of energy that burned quickly but

³⁰ Colpitts, *Pemmican Empire*, 22.

³¹ *Ibid.*, 35.

³² *Ibid.*, 42.

³³ *Ibid.*, 48–52.

³⁴ *Ibid.*, 8, 52, 88, 94.

³⁵ *Ibid.*, 12.

³⁶ *Ibid.*, 35–48.

also helped with energy reserves, that could withstand environmental conditions and remain nutritious, and that could not only replenish the body's energy but power the maintenance of muscles made sore from lactate acid, the chemical residue of work.³⁷

I do wish, however, that the multi-scaled importance of food was emphasized better by following the chain of decision-making and investment that linked the bison frontier to the centers of power in the British Empire. Returning to the question of internal vs. external dynamics, I often found myself wondering how much of the market for pemmican was determined locally and how much globally. Throughout we are confronted with pemmican's importance to the fur trade, but the dearth of any analysis on larger food markets make it seem like the pemmican wasn't an empire as much as a specialized sector of the fur trade. Readers are left with hints of the "HBC London committee" and their survey of the food situation in western Canada, but with no sense of what decisions that committee made or how those decisions translated into company policy at the house level.³⁸ This sense of context for imperial decision-making is made all the more important with the evidence scattered throughout the text that imperial economic policy mattered. During the early 1830s, the HBC implemented price quotas, "as it was doing elsewhere."³⁹ It is unclear why, exactly, this policy was implemented other than the hard economic logic of imbalance between supply and demand. But other company decisions in the book are less easily explained in this way. The NWC, for instance, chose to adopt a policy based on horse mobility rather than the HBC's reliance on canoes and human muscle.⁴⁰ Clearly, the desire of both the HBC and NWC was to expand their market in regions where food was not a given. But why did one company choose to rely almost exclusively on pemmican and the other on horse-power? What are the implications of this decision not only in the lives of the humans and animals propelling trade but also in the shape of the companies, and how they chose to expand their business? The reader is also given very little background as to why the NWC and HBC were forcibly joined by the British government in 1821.⁴¹ It is an important event, one that ushers in monopsony, but in the narrative it remains underdeveloped. Finally, Colpitts notes that a dramatic expansion in the pemmican trade coincided with food crises in Europe due to the French Wars (1792-1815), but this was only to save on purchases of flour.⁴² There were food crises all over the British Empire at this time, including England itself.⁴³ How does paying attention to the local pemmican market inform our understanding of the British imperial food market, and vice versa?

³⁷ Ibid., 37.

³⁸ Ibid., 24.

³⁹ Ibid., 179.

⁴⁰ Ibid., 103.

⁴¹ Colpitts, *Pemmican Empire*, 49.

⁴² Ibid., 97.

⁴³ William Freeman Galpin, *The Grain Supply of England During the Napoleonic Period*, University of Michigan Publications, (New York: Macmillan & Co., 1925); J.D. Post, *The Last Great Subsistence Crisis in the Western World* (Baltimore: The Johns Hopkins University Press, 1977); Roger A. E. Wells, *Wretched Faces: Famine in Wartime England, 1793-1803* (Gloucester, UK: Sutton, 1988).

Could the author talk about why he chose to focus primarily on the informal, internal pemmican empire instead of the formal, external British Empire? What can be gained by talking about informal empire when there is a formal Empire setting policy? Colpitts defines the pemmican empire as “a vast internal system.”⁴⁴ He asserts that the food trade of HBC was a tentacle of British power and colonization. Intuitively the reader grasps this is correct, but the narrative doesn’t really follow this thread. In many instances, Colpitts hints at the larger imperial significance of the pemmican region, but these connections remains largely undeveloped. Colpitts writes “the pemmican trade developing in the eastern sections of the British plains helped drive the fur trade’s own spectacular spatial and capitalized expansion into the western tracts.”⁴⁵ But how were the plains particularly British? Other traces of Empire are scattered throughout the text. On page 194, Colpitts provides a tantalizing hint at great imperial designs for pemmican: a photo of a pemmican tin carried by the doomed expedition of Sir John Franklin to discover the North-West Passage. This picture, like the rest of the book, however, only gestures to the British imperial project. Colpitts notes that the Royal Navy’s renewed commitment to exploration made pemmican “an amalgam of empire” as an energy source powering naval expeditions but then quickly moves on to how this new demand contributed to a series of commercial wars amid dwindling bison herds.⁴⁶ On page 263, Colpitts concludes that the British buffalo frontier, “after 1821 remained harnessed to the credit, management, and markets of the London metropolis.”⁴⁷ But it is hard to put down this book without feeling this point has been asserted rather than demonstrated. The reader just doesn’t have an adequate sense of the histories of the Hudson’s Bay Company, the Northwest Company, or how those two companies fit into the British Empire. In *Pemmican Empire*, the reader is confronted with two companies whose decisions do much to shape the internal dynamics of the pemmican empire, but these companies are only selectively placed within British and wider North American history. Because Colpitts does not systematically follow his markets or empires outside of the pemmican region, the multi-scaled importance of these hybrid food networks remains local or regional in scope.

Colpitts has provided much food for thought and has raised important new questions about food, markets, and empire. Certainly, he has provided environmental historians with a new model to understand the process of informal empire across European commodity frontiers. He is absolutely correct in putting food at the center of this story. His narrative has provided environmental historians with a way to grapple with the question of internal vs. external forces. In this light, I’m left with one final question for Colpitts and, indeed, the field at large. How would this story have looked different if Colpitts never rolled the complex decision chain that created the pemmican region into the terms “market” or “empire,” but instead

⁴⁴ Colpitts, *Pemmican Empire*, 2.

⁴⁵ *Ibid.*, 113.

⁴⁶ *Ibid.*, 189–194.

⁴⁷ *Ibid.*, 263.

described the specific policies and relationships that shaped the pemmican empire? It is these policies that allowed the HBC and the NWC to, in Colpitts' words, "advance the 'sinews' of British power and future colonization."⁴⁸ I just wish I had a better sense about how those sinews actually connected to the bones and muscles of British imperial power.

⁴⁸ Ibid., 262.

Response by George Colpitts, University of Calgary

I am grateful that my book, *Pemmican Empire*, was offered this roundtable discussion. I begin my response to readers with a story not included in the book, told by former Hudson's Bay Company (HBC) trader, Isaac Cowie.

In 1868, Cowie accompanied a large indigenous hunting party from his Qu'Appelle post to the Cypress Hills regions in the southwest of present day Saskatchewan. After Blackfoot enemies had killed a portion of the contingent, Pee-wa-kay-win-in, a Cree who had lost two sons in the violence, arrived in mourning to demand gifts from Cowie. After the trader complied, the Cree demanded yet more gifts.

Through a Métis interpreter, Pee-wa-kay-win-in pointed out that "in order to feed the few white people in the world, whom the Indians vastly exceed in numbers, the allied tribes in camp had been compelled to follow the buffalo here far inside the hunting grounds of the Blackfeet and their allies."

Cowie responded as a trader would: although he was sorry for the man's loss, "I thought the supplies I had brought to sell to them, not to give away, were fair exchange for the provision we might buy and for which they required to follow the buffalo to feed themselves, anyhow."

That angered Pee-wa-kay-win: "What would become of the Great White Queen and her people if we did not send them our pemmican? Of course, they would all starve to death."

Cowie retorted that "he was quite mistaken, that Queen Victoria had probably never seen pemmican, no more than most of her numberless people."

That did not assuage the Cree from further challenging the trader: "We are the most numerous people on earth. Why, in all this big camp of three hundred and fifty tents, you are the only European, and we never see, even at the forts, more than five or six of you."

Cowie only extricated himself from the matter by employing his company's bureaucratic power: Pee-wa-kay-win, it turned out, "belonged" to the HBC's Touchwood Hills post, and not Cowie's at Qu'Appelle, and that "he must make his complaints" to the master there and not to him, who could "only exchange goods for anything he sold me."⁴⁹

Both interlocutors were viewing the pemmican trade in different ways. The European saw it attached to traditional aboriginal hunting efforts, from which traders took a part with traded commodities; the Cree saw the pemmican trade

⁴⁹ Isaac Cowie, *The Company of Adventurers: A Narrative of Seven Years in the Service of the Hudson's Bay Company during 1867-1874* (Toronto: William Briggs, 1913), 301.

moving hunters into new territories and exposing them to risks to support numerically inferior Europeans in the world entire; most importantly, Pee-wa-kay-win-in saw the pemmican trade wrapping Europeans in obligations that connected, ultimately, his own people to Queen Victoria herself.

Both were correct. The “empire” I describe forming in the British West around pemmican was market-driven but inextricably linked to aboriginal forms of reciprocity and the obligations accrued in food exchanges. Pee-wa-kay-win-in knew that traders were insignificant in terms of their numbers and their formal power. At the same time, these networks of forts and the few number of Europeans involved with them connected indigenous ways and a plains environment to a systematic network of British trade and communications.

Thomas Finger has raised a critical question about the formality of this pemmican empire. I wish I had an answer as to how the pemmican trade directly related to the big “E” empire of British commerce and imperialism. Certainly the company’s food systems, and therefore energy security, allowed the HBC to flex power in respect to its commercial rivals on the Missouri, within Rocky Mountain trapping grounds, and in the Columbia district; by the late 1840s, the company was contending with American robe traders within its own territories. Pemmican was certainly a means to the company’s geographic expansion. However, imperial power expressed itself here in the form of an informal empire. Almost counterintuitively, that very informality likely explains how the HBC has become the oldest surviving business company in the world.⁵⁰ After its organization in 1670, the company was for centuries centrally directed from its London office. Fortuitously for historians, this was a company organized in the “factor” tradition, itself quite unique in North American fur trade history. Since its London office purchased goods with cash and factored them to employees – unlike typical credited enterprises going far back in North America’s colonial period – its directors demanded exquisite daily journal reporting and strict accounting from employees. If its vast record of journal reporting, census-making, mapping and accounting allowed the HBC to “simplify” its environment and make both it and its aboriginal people more manageable as a result -- akin to James Scott’s understandings of state simplification -- the HBC obviously wielded some form of power.⁵¹

Then again, this metropolitan-directed business animated at best an informal empire. Especially after 1821, the central office devolved management decisions to an inland governor and regional councils. This devolution in turn affected how this company actually occupied its space: the company by the 1860s had its London directors using hierarchies of accounting to assess the whole and provide oversight,

⁵⁰ Gary Spraakman, “Management Accounting at the Hudson’s Bay Company: From Quill Pen to Digitization,” *Studies in the Development of Accounting Thought*, Vol. 15 (Bingley: Emerald Group Publishing Limited, 1915), 1. Gary Spraakman and Alison Wilkie, “The development of management accounting at the Hudson’s Bay Company, 1670-1820,” *Accounting History* 5:1 (2000): 59-84.

⁵¹ James C. Scott, *Seeing like a State: How Certain Schemes to Improve the Human Condition have Failed* (New Haven: Yale University Press, 1998), 2-4.

while it attended to its larger geo-political concerns;⁵² district managers and traders below them ran their regions: as one trader, also not mentioned in the book, described the situation, the company worked mechanistically as a “wheel within a wheel”: the centre provided capital stock, the other wheel was “employed to carry out the actual workings of the business.”⁵³ This doesn’t dismiss Finger’s valid question. However, the very basis of imperial power in the nineteenth century, at least in this case, wasn’t found in the hard power assets metropolitan centres could bring to bear on it, but how such small numbers of traders that Pee-wa-kay-win-in saw on the ground could operate within the periphery itself. These traders, after all, had journals, Indian debt books, and a significant and effective communication system. Their journals alone, as Cowie in another setting suggested, provided “a mine of most useful information” to gain insight “of the character and capabilities of the [Native] people.” Along with Indian Debt books, such journals gave Cowie quite a bit of power. He could and did deal with some indigenous hunters and not with others.⁵⁴ To respond to Finger, then, the big “E” empire of the HBC was likely more consequential in the ways that its lower hierarchies harnessed soft power journal writing and accounting practices, how it organized its communication between its widely scattered post system and how it made legible in qualitative and quantitative terms, the environment and people in its territories. Pemmican circulated within this informal empire in decisions made in regions and within districts, or even in the discretionary actions of individuals at post.

Claire Campbell has correctly identified the leading theme of *Pemmican Empire*: it is a food history. Food matters. She has also caught one of the great ironies playing out in the HBC’s better control of the market for pemmican after 1821: companies joining together for greater efficiencies and to lower the cost of provisioning ended up not meeting simply their needs. With greater efficiencies and cheaper pemmican prices the company made ever-larger purchases. In energy economics, the “rebound effect” is well known: consumers having more fuel efficient engines buy larger cars and use more gas;⁵⁵ the recent glut pricing at the pumps has seen consumers not only burning more fuel but more expensive higher octane fuels in their automobiles.⁵⁶ Similar to how nineteenth century coal-burning industries, enjoying greater efficiency from their fuel but burning more of it, did, the HBC ended up using far more pemmican, even as it increased the efficiencies of its transport system, switching from canoes to York boats, for instance, and increasing their size and delivery within well-timed brigades. The hardwiring of this commercial system in pemmican energy perhaps helps answer some of Campbell’s questions about

⁵² Gary Spraakman, “The impact of institutions on management accounting changes at the Hudson’s Bay Company, 1670-2005,” *Journal of Accounting & Organizational Change* 2:2 (2006): 101-122.

⁵³ Robinson, H.M. *The great fur land, or, sketches of life in the Hudson’s Bay territory, 1879*. New York: G.P. Putnam’s Sons, 1879, 57.

⁵⁴ Cowie, *The company of adventurers*, 229.

⁵⁵ Richard York, “Ecological Paradoxes: William Stanley Jevons and the Paperless Office,” *Human Ecology Review* 13:2 (2006), 143-145.

⁵⁶ Binyamin Applebaum, “When Gas Becomes Cheaper, Consumers Buy More Expensive Gas,” *New York Times*, 9 October 2015.

possible economic diversification. The problem of ongoing dependence on bison fat as an energy source tied the hands of fur trading companies needing it; as well, northern latitude climate made it available in abundance; climate also led to such paradoxes as the growing Red River settlement: ostensibly based on agriculture, its grown returns remained so uncertain that its progressive nineteenth century development was skewed by an ongoing dependence on pemmican right to the end of the bison era.

In her review, Ruth Sandwell has appreciated the energy history within the pemmican story. She correctly identifies a need in the book to learn more of women. The book attempts to highlight women as central to these pemmican processes and what became factory production. In fact, without that contribution, it is hard to conceive food depots successfully warehousing the supplies they did. I have tried to make that contribution evident: the higher proportion of women at these posts than in fur trading regions; their centrality, with children, to the very social circumstances of posts that reaffirmed reciprocity between Europeans and hunting people. More work can certainly be done to trace what I have offered here. Probably most intriguing are the changing circumstances facing women as pemmican-producers. In declining environments, I point out, women were often assigned as labour to posts in exchange for the discretionary surpluses available to bands in pemmican. But, again, their story is not easy to generalize. My analysis of Willaim McKay's 1868 "character book" at Fort Ellice reveals both men and women returning to Fort Ellice with surpluses from very distant bison hunts even as their home territories were in environmental decline.

In light of the focus I do give to indigenous women in my book, Isenberg's criticism to the contrary is thus rather puzzling. Taken as a whole, Isenberg seems to suggest that there is one way to tell the bison's story, and that being in a "transnational" history. That I fail to deliver it, without duly discussing the fine work of White and West (as well as Pekka Hämäläinen, whom Isenberg is not mentioning)⁵⁷, is an odd criticism. My book is clear in adopting a "bioregional" approach to better understand the northern areas of the plains, that of the British west, and does not claim to be a transnational history at all. Within this region, the market mattered. A lot. The company's monopsony power, achieved in 1821, allowed the company greater sway to purchase from some hunters and not to purchase from others. It allowed the company to determine price and quotas over the extent of its plains territories. In the book, I draw attention to the Cree Mis-tick-oos (or Short Stick) who would not have been the only indigenous person to be well aware of the power of this form of market. He complained at Qu'Appelle that before 1821, hunters got "good pay" for their pemmican, but afterwards "had not fared half so well." That they "received bad pay for their provisions, and were growing poorer, weaker, and more miserable year by year," (p.188) speaks to the reality of the type of market on the British plains that mattered a great deal to indigenous people.

⁵⁷ Pekka Hämäläinen, *The Comanche Empire* (New Haven: Yale University Press, 2008).

I nowhere suggest that this market, however, was determinant. I take great pains, oddly missed in Isenberg's reading, to highlight the limits of the market in these circumstances. My book, for instance, offers a new interpretation for the reasons why Nakoda and Cree traded pemmican to Europeans in the first place, less for trade goods and more to continue indigenous traditions in food reciprocity and the obligations it heaped on European parties. The market, too, was blunted among plains bison people. In my quantitative analysis, I point out that among these people the market was integrated into traditional fall and winter pounding. How, then, did Isenberg miss my concluding statement that "only a quasi-market orientation occurred among Cree, Assinboine, and Blackfoot for most of their historical contact with Europeans," and that until the end of the bison era, "they continued to negotiate their wants and needs with the market by integrating their food trades inside their traditional seasonal rounds"? (p. 264). The market, then, was accepted on Blackfoot terms and not imposed upon them. The greatest brake on market trading was the nature of the exchange itself. Again, I argue that this food trade gave considerable autonomy to plains hunters. They could, as I point out, eat, instead of trade, the product of their hunt (p. 263). That issue alone meant that these "meadow" people were characteristically disparaged by traders in comparison to fur trapping hunters. They needed very little from Europeans and retained considerable independence. But to dismiss at the same time the significance of this kind of market in British territories after 1821 would dismiss, too, the complex history of indigenous people in this area. Short Stick's complaints were real, and I, in fact, duly demonstrate Cree agency, not its absence, in respect to the circumstances in which they found themselves.

Isenberg seems most frustrated by my attention to economic analysis of this region, its focus on *pemmican, pemmican, and pemmican*, and its "parochial" interest in a northern space of the plains. I can only encourage him to take greater interest in plains history above the 49th parallel. Certainly the paper record from this region from the eighteenth through nineteenth centuries offers a significant window into environmental history: the HBC archives (in Winnipeg), alone, preserves records from some 118 plains and parklands posts from these centuries, many with uninterrupted daily journal entries for decades. The correspondence and reports ("inward") to London, the company's district and inspector reports, its maps and other records, and its detailed accounts, makes the British territories one of the most fully documented of bison landscapes. No other region of the plains offers better quantitative analysis (and hopefully to come, historical GIS work) and no serious bison historian should neglect this essential perspective in environmental history. I appreciate Campbell's observation that "the particular is a conduit to larger questions." Only through quantitative analysis can we perceive how the HBC generated far more bison product than it actually needed and used it to leverage indigenous hunting in depleted game areas. Only through these accounts can we understand how some indigenous hunters gained freedom from the company and, in company "character" books – essentially Indian credit books – continued to enjoy independence and (similarly to present-day credit card companies), gain untrustworthy ratings because they could walk away from their debts. Certainly my

analysis offers a way to better understand depleted environments, where debt books reveal “good hunters” becoming dependent on traders’ surplus pemmican. And, only through economic analysis and detailed attention to trade journals can we reconstruct how groups in areas losing bison and launching farther-afield hunts could retain freedom from the company. Indeed, it was in the kinds of camps Pee-wa-kay-win was referring to -- now producing marketable pemmican in enemy territories – where important multicultural assemblies shaped indigenous strategies for treaties after the end of the bison era. This bioregion deserves more attention on its own terms; the bison as an animal offers many stories to tell. I have only attempted to tell one of them that was thoroughly shaped by market forces, climate and indigenous-newcomer interactions.

I want to end this response by thanking once more my readers for their comments in this roundtable. I appreciated them all taking time to read the book and offer their learned responses.

About the Contributors

Claire Campbell is an associate professor in History at Bucknell University. Recent work includes editing *A Century of Parks Canada, 1911-2011* and *Land and Sea: Environmental History in Atlantic Canada*. She is now completing a new manuscript, titled *What Once Were You? Historic Landscapes in Canada*, that argues for environmental history at historic sites.

George Colpitts teaches environmental history at the University of Calgary. In addition to *Pemmican Empire*, he is author of several books including *North America's Indian Trade in European Commerce and Imagination: 1580-1850* (Brill, 2014). In 2010 one of his articles won *Great Plains Quarterly's* Frederick C. Luebke Award for outstanding regional scholarship. An article appearing in *Western Historical Quarterly* was awarded the 2012 American Society for Ethnohistory's Robert F. Heizer Prize.

Thomas Finger is Assistant Professor in the History Department at Northern Arizona University. His research focuses on environmental, economic and energy histories of food and water systems. His current book project—*Harvesting Power: American Wheat, British Capital, and the Rise of a Global Food System, 1776-1918*—examines how American wheat exports became the major tentacle in a global system designed to power European industrialization with cheap food from around the world.

Andrew Isenberg is Professor of History at Temple University and the editor of the *Oxford Handbook of Environmental History* (Oxford, 2014). He is also the author of several other works including *The Destruction of the Bison* (Cambridge, 2000) and *Mining California* (Hill and Wang, 2005).

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