The “Age of Agricultural Ignorance”: Trends and Concerns for Agriculture Knee-Deep into the Twenty-First Century

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The phrase in the title is not mine. I am borrowing it here from syndicated columnist and cowboy poet Baxter Black, who borrowed the title of one of his own columns “Growth of Agricultural Ignorance” from the editor of the Delmarva Farmer (a weekly agricultural publication serving the Delaware, Maryland, and Virginia region).¹ In many ways I agree with the term, and believe it is accurate in part to describe American society in the late twentieth century and into the twenty-first. Thus, I would like to take this opportunity to discuss some trends in American agriculture, and for that matter, agricultural history, and some concerns that I have about them. Not all the trends are bad, of course, and perhaps in some ways, at least, American society is less agriculturally ignorant than Black and others suggest.

The idea of a national agricultural ignorance is based on several key arguments. First is the fact that so many children growing up on farms began choosing to leave an agricultural career and lifestyle by the middle and end of the twentieth century, often with the encouragement of their families. Immigrant farm laborers likewise urged their children to leave the transient lifestyle of manual labor to focus on education and less physically demanding occupations. Thus, each generation, transient or otherwise, was drawn to professions that required less hard physical labor, so that the percentage of the American population engaged in agriculture dropped from 25 percent in 1933 to less than 2 percent by 2015. But perhaps more important is to consider that via modern and industrial agriculture this 2 percent is doing the job of feeding the rest of the nation, that is, three hundred twenty million people a day, and providing over $45 billion worth of agricultural exports a year to many parts

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of the world. “It’s an amazing accomplishment,” Black argued, “that is now taken for granted.” In fact, the United States is the third largest agricultural producer in the world, after China and India, and ranks as the world’s largest agricultural exporter.² That, then, is part of this national agricultural ignorance—that many Americans are unaware of these facts.

The second underlying contribution to the Age of Agricultural Ignorance, Black argued, is an “expanding ignorance of science,” with fewer and fewer students engaged in science- and agriculture-based subjects. The point is that farmers and those growing up on farms learn science naturally, with a hands-on sense of labor and nature.³ This is no new point. In his book Field Life, historian Jeremy Vetter cites how famed nineteenth-century naturalist C. Hart Merriam in requesting field assistants said he would “rather have the farmer’s boy who knows the plants and animals of his own home than the highest graduate in biology of our leading universities,” and how scientific journals in the early twentieth century often referred to the knowledge derived in the American West from farmers and ranchers.⁴

The larger argument here, perhaps, regards the impact of the rise of urbanization as people began to leave rural areas with fewer dedicated to agriculture. For North America, around 1920 marks the time when both the United States and Canada (1921) became statistically more urban than rural at between 50 and 51 percent of the population. The urbanization climb has been steady ever since, in the United States up to 80.7 percent urban by the 2010 census, and in Canada 81 percent by 2011. Regionally, the West leads the United States as the most urban part of the country, at 89.9 percent (with the Northeast following at 85 percent, the Midwest at 75.9 percent, and the South at 75.8 percent). Western states like California (95.2 percent urban), Nevada (94.2 percent), Utah (90.6 percent), Hawai‘i (91.9 percent), Arizona (89.8 percent), and Colorado (86.2 percent) show that despite long rural distances between cities, westerners tend to live in the urban areas. In the Northeast, New Jersey—the “Garden State”—has a 94.2 percent urban rate, followed by Massachusetts (92 percent), Rhode Island (90.7 percent), Connecticut (88 percent), and New York (87.9 percent).⁵ The world as a whole, however, has remained rural much longer, not becoming percentage-wise more urban until 2007.⁶

Baxter Black pointed to this very phenomenon as part of the origin of the Age of Agricultural Ignorance. “Urbanization inexorably isolates people from the land,” he asserted, and draws them away from the natural processes of food production. To illustrate his point, he waxed nostalgic about calving on
his ranch in Arizona:

I have calved a lot of heifers in my life … thousands. All of us who have that type of experience know that after the sweat and strain, the slick and sticky, the hope and pull, the grunt and sigh, when the wet little creature plops on the ground, sometimes there is a moment where time stands still. A second, or two, or five, we stare, our world suspended, waiting for a sign. Then the new baby sniffs, or blinks, or sneezes, or wiggles an ear, and at that moment, it feels as though a burden has been lifted from our shoulders. We did it. We did it again. Just regular common people like us, engaged in that age-old profession of stockman, have participated in a miracle—life being passed from one generation to the next. It is no small thing to be a part of, and every time it happens, it renews us. The miracle never diminishes…. [And] as fewer and fewer humans participate in this ancient experience it is our loss.7

This personal separation from nature and agriculture and the urban-rural divide are perhaps at the heart of why farming seems to be ignored in mainstream American media and politics, despite its importance in feeding the country and providing billions in export dollars. Thus, are the media and politicians in large part to blame for the development of an Age of Agricultural Ignorance? In “State of the Plate,” muckraking Texan journalist and former Texas Commissioner of Agriculture Jim Hightower followed such trends and offered some valuable insights for answering that question:

Remember last year’s [2016] presidential debates? Trump and Clinton talked about the needs of hard-hit working class families, veterans, coal miners, and others. But—helloworld—where were the farmers? Indeed, where were the multitude of producers—farmworkers, ranchers, ranch hands, fishing crews, seafood workers, et al.—who toil on the lands and waters of this country to bring food to our tables? All went unmentioned, even though economic and emotional depression is spreading through their communities, thanks to bankruptcy-level prices paid by corporate middlemen. In the past three years, farm income has declined steadily, plummeting 12% in just the last year alone. But—poof?—these crucial—but–endangered food producers were totally disappeared by the political cognoscenti.8

To Hightower, others, and me this is a disturbing trend in American politics, and it is not so new. Farmers and agriculture in general (minus the political hot potato of immigrant farm laborers, although that debate rages more about immigration in general and not so much about food production) have been absent from presidential debates now for the past few election cycles.
It took an American professor in Norway, A. Hope Jahren, to sift through debate transcripts to report in a *New York Times* op-ed piece that “farm policy hasn’t come up even once in a presidential debate for the past 16 years,” despite how the monetary value of agriculture is nearly eight times greater than that of coal mining—an industry that Hillary Clinton and Donald Trump robustly pursued in their 2016 presidential campaigns.9 Think about that period of time: that would include the debates between Bush-Kerry, Obama-McCain, Obama-Romney, and Trump-Clinton. And added Hightower, “Not a single one of them—and none of the high-profile TV sparklies assigned by the corporate networks to ask about vital national issues—mentioned the people we count on to produce our food.”10

But of course, it was not always that way. Farming and agriculture were mainstays of the American political scene for over a hundred years, with presidential candidates bending over backward to woo farmers, and with the development of farm movements that were highly politicized like the Grange movement in the Midwest, the Non-partisan League in the Northern Plains, the Green Corn Rebellion in Oklahoma, and socialist and populist farmers’ movements throughout the American South and West. Even in the 1960 televised debate between John Kennedy and Richard Nixon, the network moderator, Charles Warren of Mutual News, opened the debate by asking the presidential aspirants, “It’s a fact, I think, that presidential candidates traditionally make promises to farmers. Why this constant courting of the farmers?” Well, as Jahren surmised, “the courtship is clearly over. How did we get from there to here?”11

Jahren, who grew up in the rural Midwest—southern Minnesota—had a good handle on how to answer her own question. “Today, there are basically two types of farms in America: giant corporate farms that tend to express their political preferences through lobbying, and smaller-yielding, largely family-run farms, many of whom are operated by owners who take on a second job.” On the political level, then, “The farmer vote that was courted for more than a century was a ballot cast by an American who farmed, and by farming supported a household. That farmer is no more.”12 I will return to the topic of corporate versus family farms below, but Jahren’s and Hightower’s analysis here begins to explain the rise of the Age of Agricultural Ignorance in the realm of politics.

The malady has also adversely affected academia, especially in the humanities where agriculture as an important topic for history, geography, political science, and other disciplines has been bypassed for more trendy concerns. For
instance, I was once laughed out of my department chair’s office after requesting to offer a course on agricultural history: “Oh no, who would want to take that?” Sara Gregg, a historian at the University of Kansas, has also written of this dilemma within the academy: “The central place of agriculture in American development is indisputable. … [But] many historians have ignored the natural and economic impacts of agriculture in their analysis of the modern nation.” It is telling that she was especially addressing this concern to fellow environmental historians. Certainly, that subdiscipline began with many historians seeing important connections between agriculture and environment, but the trend since then has been to go in many other directions—none of which is necessarily bad, but as Gregg points out, farming is too often ignored in larger studies about modernity.

As on the American political scene, this ignorance or avoidance of agriculture in academia is nothing new. To attempt filling that void, historian John Schlebecker authored an important book on American agricultural history in the 1970s entitled Whereby We Thrive drawing for his title on the words of renowned nineteenth-century Provençal naturalist, entomologist, and philosopher Jean Henri Fabre who once argued, “History celebrates the battlefields whereon we meet our death, but scorns to speak of the plowed fields whereby we thrive. It knows the names of the king’s bastards but cannot tell us the origin of wheat. This is the way of human folly.” Other scholars, philosophers, and social critics from past centuries in Europe and the United States understood the importance of agriculture and agricultural labor for state building and for the long-range survival of powerful nations. John Locke in seventeenth-century England argued for the right to property to inspire production and advocated the principle of “natural law”—a theory of land ownership in which property would come about by the exertion of labor on natural resources that became the genesis of the homestead principle. Such thoughts influenced Thomas Jefferson, of course, with his emphasis on how an “empire of liberty” would be possible via the development of an “agrarian republic.” His role in the creation of the Northwest Ordinance of 1787, which created the grid-pattern township system to survey and parcel the land of the American frontier, laid the foundation for Abraham Lincoln’s 1862 Homestead Act that embodied the Lockean principle of property and the Jeffersonian ideal of agrarianism. Near the same time in Europe, Karl Marx argued that the “bounty of the land”—no matter how fertile or vast, could only be unlocked by labor. His ideology of the modes of production certainly rested on the strong tenet of how nations had to harness labor to the land.
And finally, in Russia, Leo Tolstoy complained that, “City folks, for the most part, consider field work to be below them. Nevertheless, the great majority of the people in the world are farmers and it is they who assure the existence of the rest of the people.” He suggested that in his day, “The human species is almost entirely composed of farmers” and that “therefore being the most moral, healthful, happy, and necessary of occupations, farming is also the most noble of professions and the only one in reality that provides us with the independence of those who forget this.” Those thoughts are standard to anthropologists’ understanding of what connotes “civilization,” especially how agricultural production and the development of surplus goods provided the time for others in societies across the world to develop the sciences, religions, arts, philosophy, and sports. For Tolstoy, it was more of a matter of wanting and needing to understand farming and agricultural labor, often postponing his writing to work in the fields and keeping a scythe near his desk. He strove to relate to the Russian peasantry, even putting on hold for a year the writing of *Anna Karenina* (1877) while he worked on famine relief in the countryside. Such field work caused him to ponder the meaning of life, how to live simply, and how we should all show empathy with those around us and on whom we depend for sustenance.\(^{17}\)

It is heartening to me that we in the field of agricultural history also have yearned to understand these basic connections between farming and society in general. In this new year (2019) we will be celebrating the centennial anniversary of the Agricultural History Society, commemorating that the organization is one of the longest-lasting associations within the discipline of history—a tribute indeed to the importance of agriculture in society and honoring our work to dispel the Age of Agricultural Ignorance. And a rundown of the history of the discipline shows that we have not been averse to changes in focus to help us interpret the intersections of agriculture and society. We can recall that in the organization's first few decades the majority of works in our field centered on agricultural economics and farming technology. By the middle of the twentieth century we began to look more at agricultural labor and rural life—a topic that opened all kinds of doors into the social history of farming and food. Toward the end of the century, reflecting the greater discipline of history in general, we appropriately started to delve more into the roles of race, class, and gender in agricultural history. And finally, by the turn of the twenty-first century we were seeking to show connections with urban history, environmental history, and transnational history.\(^{18}\) The theme of the 2018 Agricultural History Society conference, “Tropicana: Commodities
across Borders,” represented this new-found interest in transnational agriculture extremely well, and there was a great variety of panels and papers presented on the topic from many parts of the world.

It is this transnational turn that I personally find very compelling and important, especially as the discipline of agricultural history continues to reach out to more scholars in a variety of disciplines and continues to address international agricultural concerns and connections. As I have written elsewhere, “The history of rural America has been one forever connected to places far from rural America. From dependence on foreign markets for importing labor and inputs, to dependence on foreign markets to which to export American agricultural products, the international context of agriculture has important and formative effects on the experience of rurality in the United States.”

These transnational connections began with the development of plantation agriculture in the American South where, like in Brazil and the Caribbean, the production of sugar, and later tobacco and cotton, demanded a labor force that could not be filled by European settlers in the New World, and where indigenous peoples successfully revolted against slavery or were too few in numbers for an adequate labor regime. The African slave trade that ensued, along with the international markets for American-grown commodities, illustrate well how the American colonies’ economic history from the start was dependent on transnational connections. This of course is nothing new in American historiography, especially as the subfield of Atlantic World history evolved in the late twentieth century.

But beyond histories of the slave trade, important studies that looked more carefully at the commodities themselves and at the agricultural, social, and cultural connections of slavery started to emerge. Consider, for example, Sydney Mintz’s seminal 1985 book *Sweetness and Power*, which traced the transformation of sugar as a luxury commodity for wealthy Europeans to an everyday staple and an essential working-class fuel-food ingredient for the Industrial Revolution. Mintz explored how commodity histories have larger stories to tell with far-reaching international dimensions. Sugar itself is perhaps the quintessential exemplar of transnational agricultural development, originating in Southeast Asia in the fourth century BCE, then moving into China, Arabia, Persia, and the Mediterranean throughout the Middle Ages. What Mintz discusses as a sugar revolution, really took off by the 1540s when it became an important colonial commodity in Madeira and São Tomé for the Portuguese and in the Canaries for the Spanish. It followed close on the heels of New World colonization, serving as a great trade commodity for the
Portuguese in coastal Brazil by the 1530s, in the Dutch West Indies a century later, for the British in Barbados and the French in Haiti by 1640, and for the Spanish in Cuba by the 1750s. And while the Cuban sugar industry evolved later than elsewhere in the region, it took off there with incredible speed, with nearly 1,500 mills processing sugar on the island in the mid-nineteenth century and providing a third of the world’s sugar supply by 1898. By the early twentieth century, sugar production represented 92 percent of Cuba’s economy. By then, the Cuban growers were competing with other sugar-producing regions around the world, including Malaya, Taiwan, the Philippines, Queensland (Australia), Hawai’i, Colombia, and Java.22

Java—the island from where we get that nickname for coffee—serves as another reminder of the transnational nature of world commodities and with a similar development trajectory as sugar. As its Latin name purports, *Coffea arabica* was first cultivated in the Arabian Peninsula (or some suggest, the horn of Africa) and moved swiftly like, and with, sugar around the world as a fuel for the Industrial Revolution in Europe. Entire national economies, like those in Brazil, Colombia, Costa Rica, and El Salvador became dependent over time on coffee production and export and suffered from the whims of international markets and international diseases that strike coffee plantations, as is so often the case for “commodity hells.” Stuart McCook, for instance, has tracked the history of coffee rust, a disease as transnational as coffee itself.23 And in terms of labor, in Brazil, the coffee industry in the country’s southeast interior was at first dependent on African slaves. That changed with abolition in the 1880s, and new waves of immigrants from Germany, Japan, and elsewhere internationalized Brazilian coffee even more.

The study of slavery itself has taken some important turns toward agricultural history in recent years. New histories are showing that in the American South slaves introduced new cultural connections, especially foodways, from Africa on which southerners soon became dependent. In their book, *In the Shadow of Slavery: Africa’s Botanical Legacy in the Atlantic World*, Judith Carney and Richard Rosomoff offered compelling evidence on how slaves “Africanized” the food and health systems on plantations by introducing food, medicinal, and spiritual plants. Their knowledge of rice-paddy farming became essential for food production, especially in South Carolina, and other plants or seeds that Africans creatively smuggled with them on the slave ships produced fiber for clothing and cordage and garden plot crops for daily nutrition. Thus, the transnational foodways from enslaved Africans made significant contributions to the agricultural and economic development of the American
South in the colonial and early national periods.  

This Africa-America connection, however, became a two-way street. By the beginning of the twentieth century, descendants of slaves began to bring facets of the southern cotton plantation complex to West Africa to advance economic development there. From the Tuskegee Institute in Alabama, Booker T. Washington organized an expedition to the German colony of Togo to introduce cotton production, using German colonizers, Togolese laborers, Polish immigrants, and Tuskegee representatives to establish cotton as a cash crop for local use and export. Historian Andrew Zimmerman chronicled this transnational story in his book *Alabama to Africa: Booker T. Washington, the German Empire, and the Globalization of the New South*. It illustrated the rising economic power of a globalizing American South and how it could help shape and develop other areas of the world, as well as the triangular connections between Europe, Africa, and North America in very different ways than the slave trade represented centuries before. Equally important on this same topic is the multi-authored book *Plantation Kingdom: The American South and Its Global Commodities* which examined sugar, cotton, rice, and tobacco and how those commodities helped to forge an international southern economy. But, as the authors of this book importantly note, due to slavery and heavy dependence on foreign markets, the South represented a “commodity hell,” an apt economic and social description carried into the twentieth century when overproduction and gluts characterized the region without much agricultural diversification.

The transnational history of cotton deserves our attention in this light. Before the abolition of slavery, cotton continued the Africa-to-the-Americas forced labor regime and continued the multi-continental trade patterns that had begun with New World sugar production. Likewise, demand for fiber in eighteenth- and nineteenth-century England’s robust textile industry not only spawned increased cotton production in the American South, but also in other parts of the world, especially India, and led to further increases when the US Civil War disrupted production in the South. Then, investors in the United Kingdom looked to increase production in India and Egypt as well as in Latin America, especially Brazil and Nicaragua, where cotton for many decades flourished and greatly impacted local and regional economies and environments. When cotton returned on a more stable basis to the South, its constant enemy—the boll weevil, with its own transnational history originating in Mexico and moving into Texas and then the Deep South, as James Giesen has shown in *Boll Weevil Blues*—shifted cotton production westward,
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into Mississippi, Arkansas, eastern Texas, Oklahoma, and eventually to the Texas Panhandle, New Mexico, Arizona, and California.27

As a transplanted Oklahoman, I am especially intrigued by the transnational cotton industry that led to the creation of my adopted home state—a fact most people in Oklahoma assuredly would be surprised to learn as it is not clearly presented in state history textbooks. But when high British demand allowed for prices of raw cotton to double in the year 1815 (from 15 cents a pound to 30 cents in less than a year), hundreds of thousands of Americans from elsewhere in the growing United States raced to the Deep South to start growing cotton on any land they could get their hands on. From 1810 to 1820 cotton production in the region increased tenfold, and by 1820 the South had surpassed India as the world’s leading cotton producer. Meanwhile, in the ten-year period from 1827 to 1837 the number of banks in the United States doubled (from 333 to 729), which exponentially increased the availability of credit for new farmers in the South to put land into cotton production and to purchase slaves. The only thing in the way of such growth were the American Indians still living in the region, many of whom had begun their own agricultural enterprises based on cotton and slavery. But Anglo invaders literally began to push the indigenous peoples off their land—often violently, prompting the Andrew Jackson administration to develop an Indian removal policy, supposedly based on the Indians’ own protection before they would be slaughtered by more incoming settlers. Jackson delivered his message “On Indian Removal” to Congress in 1830, Congress passed the Indian Removal Act the same year, appropriated $500,000 for the War Department to implement it, and the government then opened land throughout the South for private acquisition (that profited the government more than the cost of removal). Speculators bought up most of the land and eventually sold parcels to settlers for high profits.28 Thus the Five Tribes—the Cherokee, Chickasaw, Muskogee (Creek), Choctaw, and Seminole—underwent removal down the various trails of tears in the 1830s, removal to Indian Territory that later became the eastern half of Oklahoma. They competed against other tribes already in the region, and when settled began new agricultural enterprises that became the basis of Indian Territory’s and Oklahoma’s cotton economy—completing the cycle of trade to the eastern United States and Britain for the booming textile industry.

This transnational nature of commodity histories has been of great interest to me, and the trend to explore it more deeply within agricultural history has grown quickly in the last few years. A veritable cottage industry of commodity
histories evolved in the late twentieth century, some more academically oriented than others, some demonstrating international commodity webs more so than others, and many with pithy one-word main titles. Tellingly, several of the titles in this body of literature deal with “empires” created by certain commodities, and many deal with how a specific commodity changed, transformed, or even rescued the world.  

I have been especially interested in how King Henequen from Mexico reigned to provide fiber for cordage across North America. The agave plants henequen and sisal, from Mexico’s Yucatan Peninsula, yielded the right kind of fiber to make binder twine, that essential component of grain harvesting with binders that cut the grain stalks and tied them into sheaves or bundles to await threshing that farmers throughout the United States and Canada (and elsewhere in grain-growing regions of the world) used before the availability and affordability of combine harvesters. Thus, as I worked to show in *Bound in Twine*, a double dependency ensued in which henequen growers in Mexico became dependent on grain farmers in the transnational Great Plains, and grain farmers there were dependent on Yucatecan henequen producers from the 1880s to 1950. The two-edged dependency resulted in a variety of social, labor, economic, and environmental changes throughout Mexico, the United States, and Canada, ones that were worthy of our attention for both historical reasons and as signposts for similar economic, labor, and environmental ramifications of the North American Free Trade Agreement (NAFTA) between these same three countries, which was enacted in 1994 and revised in late 2018.  

The transnational fiber connections for binder twine, however, were not limited to North America—they extended over to Asia, providing a fascinating inroad in which to understand how the Pacific World connected into globalized agriculture. In the Philippines, growers produced an even better quality of fiber for binder twine, albeit more expensive to import due to distance: abaca. Also called manila hemp, although in no way related to industrial or recreational cannabis, abaca comes from the rasped fiber from the stems of *Musa textilis* plants, which are related to banana plants but do not produce an edible fruit.  

The abaca industry and its links to North American grain growing remind us how the Philippines had long been connected to international markets. Going back to the early modern period, imperial Spain valued Asian trade via its Manila Galleon, a twice-a-year fleet from 1565 to 1815 that took goods via Manila to Acapulco and then on to other ports in the Spanish New World...
and Europe, on ships whose sails were made from Philippine abaca. The trade was transregional and highly agricultural: the galleon carried cotton from India and Luzon, spices from the Moluccas, abaca from the Philippines, opium and sandalwood from China, and silk from China and Japan, along with other Asian commodities. During the same time Mexico, whose mines in Zacatecas were the world’s leading silver producers, sent specie to China on the westward return trips. The collapse of the Chinese paper money system by the 1450s, caused in part due to its uselessness for trade beyond China, created a robust market for Latin American silver. On the other end, while Spain sponsored the Manila Galleon, it was German banks and lending houses that funded the merchant fleet. Further south, the Andes produced silver, shipping out of Peru to Mexico and then on to Asia. Mexico also exported agricultural commodities. All this trade created new markets on both sides of the world and yielded fantastic profits for the Spanish, especially as the Crown charged high taxes on incoming merchandise.

The agricultural history of this transnational trade network should not go underreported. The Manila Galleon served as a vessel for the Columbian Exchange, particularly with the introduction of crops from Spanish America into Asia. Sweet potatoes and peanuts especially became important crops to Filipinos, with corn and other fruits and vegetables from the Americas entering the Philippine diet. Sweet potatoes in fact became the third-most important food crop in the Philippines (after sugar and rice) and contributed significantly to the islands’ rapid population growth, including the increase of Chinese immigrants who worked in the galleon shipyards.

As the centuries moved along, abaca remained a strong commodity in worldwide trade, in large part due to its strategic utility. A botanical study called abaca “the world’s foremost cordage fiber,” especially for marine use as its resistance to salt water rendered it perfect for making naval rope, rigging, and fishing nets, as well as for textiles, especially as fabric that native Filipinos used for clothing. As the best fiber for marine cordage, it was in high demand across North America and Europe, becoming especially popular with British and US ropeworks. During the US Civil War, a shortage of other fibers caused papermakers to use recycled rope to make what became known as “manila folders.” Demand for naval rope increased even faster during the two World Wars. Allied forces in World War II knew they would need massive amounts of fiber to make enough rope for the thousands of ships that were being made for the war effort. Thus, the US government, along with the United Fruit Company of Boston experimented with abaca plantings in Panama,
the US Canal Zone, and Honduras—in similar tropical conditions and at similar latitudes to abaca plantations in the Philippines. After the Japanese attack on Pearl Harbor, the abaca effort in the Americas grew even stronger, with plantations developed throughout Central America and Brazil made possible by the importation of abaca rhizomes from the Philippines. Because abaca is so closely related to bananas, the developers discovered it could grow well in former banana plantation lands. Today, that trend has continued with the abaca industry thriving in Costa Rica and Ecuador, competing with Philippine growers. Thus, while the war industry broke the Philippine monopoly on abaca fiber, it propelled abaca development even further transnationally.

In the private sector, contractors used abaca roping in the construction of the Golden Gate Bridge and Hoover Dam during the Great Depression, for ropes used in the mines and for oil rigs in the American West, and as mentioned above, for the best binder twine (often blended with henequen or sisal) for the grain industry on the American and Canadian Plains. When demand for twine fell due to increased combine harvesting (with no need to tie sheaves) by 1950, abaca producers discovered a variety of other uses for the fiber, unlike the Mexican fiber industry that struggled to find long-term alternative markets for sisal and henequen and went into steep decline with the advance of the combine. Today abaca is in high demand not only for ropes and packing twine, but also for carpets and rugs, hammocks and mats, upholstery material, patio furniture, fiberboard and other building materials, and specialty paper for cigarettes and coffee filters. German and British manufacturers of such products have become the abaca industry’s leading customers and thriving fiber production in the Philippines has been a boon to local and national employment. By 2007 the country was supplying 85 percent of the world’s abaca fiber, making it one of the Philippines’ greatest contributions to world trade worth nearly $80 million a year, and providing work to 1.5 million Filipino farmers, fiber strippers and classifiers, processors, and traders. Likewise, abaca as an endemic plant to the Philippines helps to conserve environmental protection as the crop depletes very few soil nutrients, leaves little physical and chemical residue in processing, helps to prevent erosion and preserves water resources where planted, and aids in biodiversity protection when intercropped with other commodities like coconut palms. Finally, products made of abaca consume less energy in their production than similar products made from other materials and can be recycled several times more than wood pulp. It is thus an extremely promising agricultural commodity on many transnational, economic, and ecological levels that warrants
And what sugar and cotton meant for the interconnections of Atlantic World history, abaca adds an intriguing agricultural case study to the important developing field of Pacific World, or Pacific Rim, history. Historian Matt Matsuda noted that the oceanic region was hardly “an empty expanse,” but rather was a “crowded world of transitions, intersections, and transformed cultures.” He argued that specific histories here only “take on full meaning when linked with other stories and places,” representing the “interconnectedness of other worlds,” much like I am suggesting here regarding Philippine abaca. Important studies in agricultural history have clearly illustrated these concepts and connections. For example, Cecilia Tsu’s *Garden of the World: Asian Immigrants and the Making of Agriculture in California’s Santa Clara Valley*, Gregory Cushman’s *Guano and the Opening of the Pacific World: A Global Ecological History*, and Edward Melillo’s *Strangers on Familiar Soil: Rediscovering the Chile-California Connection* worked in compelling ways to illustrate trans-Pacific agricultural intersections. Cushman showed how Peruvian guano enabled agricultural production all over Europe and North America and fostered competitive natural fertilizer industries in various parts of the Pacific. Melillo explored how the California gold fields were dependent on the introduction of Chilean wheat and alfalfa to feed miners, and conversely, how the Chilean fruit and wine industry was dependent on California fruit varieties and agricultural technologies. In a fascinating newer study entitled “Landscapes of Migration,” Ben Nobbs-Thiessen has detailed the history of how the Bolivian government earmarked Santa Cruz district in the lowlands of eastern Bolivia for agricultural development, encouraging Mennonites from Mexico and Belize and immigrants from Okinawa, along with indigenous Bolivians from the northern highlands to settle in the region. This is fascinating transregional, transnational, and trans-Pacific World agricultural history, and it thrills me such a topic won the Agricultural History Society’s Gilbert Fite Award for best dissertation in 2016.

Closer to home back in the United States, two books that came out in 2016 stand out as models of agricultural history with international ties, even though transnationality is not the principal focus of the works: Peter Kopp’s *Hoptopia: A World of Agriculture and Beer in Oregon’s Willamette Valley* and Tom Okie’s *The Georgia Peach: Culture, Agriculture, and Environment in the American South*. Both books demonstrate how regional agricultural areas within a state succeeded due to the international ties with horticultural development and markets. *Hoptopia* illustrated the uniqueness of the Willamette Valley

our scholarly attention.
for hops production, how hops there came to have worldwide fame, and how European breweries came to covet and import them for the best-tasting beers. For Georgia peaches, Okie traced a pomicultural history back to Asian and European strains as well as to international horticulturalists who engineered the Elberta variety. The fruit trees, their developers, and other advocates came to Georgia from outside the state and nation. In keeping with newer and welcome trends in our discipline, Okie includes ample discussion of race, class, and gender as those concepts apply to peach development in the state. And as his subtitle suggested, *The Georgia Peach* blends agricultural and environmental history in ways that I hope other scholars will emulate. In fact, he wrote that the book “is at heart a story about the power of environmental beauty.” Let that concept sink in: the power of something beautiful in nature, even though there were so many layers of agronomy and agricultural engineering involved with peach orchard development, there is still beauty and power in a delicious Georgia peach. Thus, when Okie rhetorically asked readers at both the beginning and end of his book if they “would care for a Georgia peach?” I must answer, yes, Tom, I would! Always.42

Likewise, borderlands history has met with agricultural history recently in interesting ways that further illustrates the transnationality of our field. For example, Benny Andrés’ *Power and Control in the Imperial Valley: Nature, Agribusiness, and Workers in the California Borderland, 1900–1940* is a blended study of irrigation, agricultural development, labor history, and social change on both sides of the line that splits California from Baja California. Tim Bowman’s *Blood Oranges: Colonialism and Agriculture in the South Texas Borderlands* explores the development of the citrus industry in the lower Rio Grande Valley, and especially how it was dependent on investment and farmer migration from the American Midwest, on labor from Mexico, and on national markets. In a similar vein, my edited volume *Farming across Borders: A Transnational History of the North American West* studies a variety of different agricultural, commodity, ranching, and irrigation histories in both the US-Mexican and US-Canadian borderlands. And Nick Johnson’s *Grass Roots: A History of Cannabis in the American West* is an intriguing study of marijuana production that transcends the US-Mexico border and the western United States.43

Other studies are showing more labor connections with Mexico and the American South, especially in terms of the growth of the poultry industry in the region. Steve Shriffler’s exposé *Chicken: The Dangerous Transformation of America’s Favorite Food* and Perla Guerrero’s *Nuevo South: Latinas/os, Asians,
and the Remaking of Place (especially her chapter on the polleras—immigrant women chicken-industry workers) offered vital information and analysis on the role of Mexican workers to the South and how cultural changes are occurring rapidly in the region with the influx of these immigrant workers. Historians will argue that these trends are hardly new. From the 1940s to the early 1960s there was a different flow of Mexican migrant workers to the South, particularly to Arkansas, in the Braceros program. More known for their field work during World War II (and thereafter) in the American West and Southwest, los braceros also were instrumental to the cotton industry in the Arkansas Delta, as a variety of newer studies are showing and with the same kinds of transnational connections that are so important to understand. And of course, the same is true for the Mexican and Latin American presence in the American Midwest, especially with the importance of migrant labor for the Midwestern sugar beet and meat packing industries. Entire communities, like Dodge City and Garden City, Kansas; Guymon, Oklahoma; Scottsbluff, Nebraska; Marshalltown, Iowa; and the Red River Valley of Minnesota and North Dakota have changed demographically and socially with the influx of Latino workers who for decades now have established their own agricultural communities in this region. Yet, assuredly as most readers will know, wages for immigrant laborers in agriculture have remained abysmally low. As Jim Hightower has reported, even if/when these migrant workers receive minimum wage (which is not always the case), most earn less than $17,500 a year and “are often ‘housed’ in shacks, old chicken coops, shipping containers, and squalid motels.” He noted, “every decade or so, America’s mass media are surprised to discover that migrant farmworkers are still being miserably paid and despicably treated by the industry that profits from their labor. Stories run, the public is outraged (again), assorted officials pledge action, then … nothing.” What role do we have in agricultural history to acknowledge this plight and continue to research, report, and analyze it?

Not all of these trends in agricultural historiography across the Americas that I am applauding here deal with specific crops, commodities, or migrant labor. Some innovative new studies are tracing transnational agricultural connections via technological and political transfers between nations. Eve Buckley, in Technocrats and the Politics of Drought and Development in Northwest Brazil, for example, analyzed technology transfer via the New Dealers from the Franklin Roosevelt administration whom Brazilian technocrats invited to their country’s sertão (interior northeastern hinterlands) for advice and comparative ideas on dams, irrigation, and agrarian and social development to
help bring the Northeast out of poverty and drought. The Tennessee Valley Authority (TVA) was especially of interest to the Brazilians as a supposed model of modernization for the lesser-developed and plantation-oriented American South and how some of the TVA’s programs could be transferred to help farmers, especially landless tenant ones, in the *sertão*. That many of the hydro projects in Brazil did not produce the anticipated economic changes, and, like in the South, did not diminish class and economic disparities, is part of Buckley’s important concluding analysis.48

Similarly, Tore Olsson’s prize-winning book *Agrarian Crossings: Reformers and the Remaking of the US and Mexican Countryside* offered valuable new data and analysis on the history of ideological exchanges in the 1930s and 1940s between the United States during the New Deal and Mexico during the reform era of President Lázaro Cárdenas. However, as Olsson discovered, different in this history was a robust two-way street between the two countries that yielded American agricultural technology transfer to Mexico and ideological transfer on agricultural reform from Mexico to the United States, particularly to the South. The liberal land reform policies enacted in Mexico by Cárdenas seemed attractive to New Dealers looking to reform agricultural policies in the South, and in some ways led to the creation of the Bankhead-Jones Farm Tenant Act of 1937, which was designed to enable southern tenant farmers access to credit to purchase land, often damaged, with the idea for them to turn it into good farmland. Olsson thus offered an important corrective to our understanding of New Deal agricultural policies, one in which Mexico played an important role.49

These important examples in the transnational turn that our discipline has taken should make all of us in agricultural history proud, especially as we continue to reach out to scholars in other disciplines and areas. But certainly, there are other trends in agriculture to which we should continue to be alert. And it often takes journalists, politicians, and activists to attract our attention to such matters. In this Age of Agricultural Ignorance, we should be ever mindful of the impact of industrial agriculture, or what Hightower referred to as “agri-*culture*” versus “agri-*industry*,” that he so poignantly defined as “the conglomerized, Wall Street-ized, monopolized, and plasticized model of treating dinner as just another manufactured product.” For example, as he pointed out, a small group of wealthy investors controls 65 percent of all agricultural lands in the world.50 Likewise, many industrial crops and meats rely on an incredible amount of water, often controlled by conglomerate interests. *National Geographic* reported on this situation a few years ago, showing
the following water requirements to produce certain industrial agricultural products:

1 almond: 1 gallon of water
1 walnut: 5 gallons
1 head of lettuce: 12 gallons
1 cluster of grapes: 24 gallons
1 chicken egg: 53 gallons
1 pound of chicken: 468 gallons
1 gallon of milk: 880 gallons
1 pound of beef: 1,800 gallons
1 pound of dark chocolate: 3,170 gallons

On the other hand, there is indeed a concerted effort to counter this corporate agriculture/food scenario in the United States. As there was a century ago, when Cornell University horticulturalist Liberty Hyde Bailey sounded a wake-up call about the industrialized effects of capitalism on farming in those days, prompting the development of his Country Life Commission and his support for government-supported agricultural extension services, there is today a significant move for change. Perhaps Americans are becoming less agriculturally ignorant than we think, especially when we consider this counter-industrial initiative, sometimes referred to as the Good Food Uprising. Having warned against the corporate model, Hightower is enthused by this newer movement, stating that it is “the fastest growing segment of the food economy, creating the alternative model of local, sustainable, small-scale, community-based, organic, humane, healthy, democratic—and tasty—food system for all.” The Good Food Uprising is a nationwide grassroots coalition made up of family farmers, consumer advocate organizations, environmental groups, labor unions, and churches. Rural Kentucky poet, farmer, and activist Wendell Berry, who has been at the forefront of the uprising, suggests that “eating is a profound, political act. It lets you and me vote for the … industrial model or choose to go back to the future of agri-culture, which is the art and science of cooperating with, rather than overwhelming, nature.”

Indeed, Americans have voted by consuming. By 2017 the coalition could see visible successes in its work, when organic farming was up by 6 percent over previous years, with an increase of nearly fifteen thousand registered organic farms across the country. Sales of organically produced foods in the same year were up by 11 percent over previous years, for a net worth of $43
billion annually—a figure that was up four times more than sales for conventionally produced foods. And the use of genetically modified (GMO) seeds and crops by that same year registered a significant decrease, with farmers cutting the planting of GMO crops by 5.4 million acres and reducing the sale of GMO seeds by $400 million. Likewise, reports indicate an expanded base for such changes, with polls showing that 91 percent of American consumers support local farmers, 89 percent support reducing exposure to pesticides in food, 90 percent support GMO labels on food products, and 84 percent support better living conditions for livestock.\(^{54}\)

Let’s specifically look at livestock and meat production. Cattle grazing represents the most widespread agricultural practice in the world, dependent on significant grasslands on every continent except Antarctica. It is also one of the most ecologically destructive agricultural practices with overgrazing, especially during droughty years, causing serious deterioration of grasslands, steppes, savannas, and prairies. Recognizing such conditions during 1930s and 1940s, New Dealers such as Hugh Hammond Bennett in the Franklin Roosevelt administration pushed for soil conservation districts and worked to pass range management policies like the Taylor Grazing Act to restore American grasslands. Yet by the 1980s many of the grazing lands across the United States were in crisis conditions due to overgrazing. It was then that Allan Savory, a Rhodesian (now Zimbabwean) wildlife biologist and farmer, moved to the United States and was highly concerned about the deteriorating conditions of grazing lands in the Great Plains and the American West. Drawing upon his knowledge of ungulate grazing in Africa, Savory founded the Center for Holistic Resource Management in Albuquerque, New Mexico, to promote the healing and restoration of American grasslands. The center’s advocacy and instructions on “planned grazing” and “holistic management” became popular with ranchers in the West, especially when they perceived both the economic and environmental advantages of Savory’s methods. The key was in increasing, not decreasing, grazing, with Savory arguing that cattle herds had to be better managed to encourage intensive grazing that imitated the herds of ungulates in Africa’s savannas, where hoof action for mulching and ample manuring led to pasture restoration. His work showed how this program of intensive grazing was similar to the history of bison effects on the Great Plains, replete with hoof mulching via large numbers of animals running and stampeding in the grasslands. Thus, in the absence of bison, cattle needed to be managed more efficiently on grazing lands, that is, led to graze intensively in one area, then moved often to other fields to keep the
cycle going. He claimed this led to a holistic process, including research and adaptations to local ecological conditions and with the inclusion of local communities, cultures, and economies—just as the grazing systems in rural Africa have worked for generations.\(^5^5\) Savory’s theories have been proven successful by thousands of ranchers throughout the United States, and in important ways represent not only other transnational connections to American agriculture, but also innovative and environmentally sound noncorporate solutions to livestock and beef production.

Some will argue that more sustainable grazing is missing the point about beef. The water use for cattle as listed in the table above (1,800 gallons of water to produce a pound of beef), the grain required for the beef industry, the carbon footprint of cattle raising, along with range overgrazing, and health-related problems due to consumption of beef and cow’s milk, are reasons enough for many people to push strongly for changes to American agriculture and diet. Options vary from vegetarianism, an avoidance of red meat, and the consumption of more goat meat and dairy products. In contrast to beef, it takes only 127 gallons of water to produce a pound of goat meat, which has significantly less fat content than beef. Likewise, goat milk is easier to digest than cow’s milk, is homogenized naturally, and rarely produces cases of lactose intolerance. Finally, goats browse instead of graze, taking a far lower environmental toll on natural landscapes. All of this can be attested to by the popularity of goat meat and milk in most of the world, but it is up against cultural stigmas in the United States (except by people of Southern European, Asian, African, and Latin American ethnicities).\(^5^6\)

Aquaculture represents another sound meat and protein alternative to beef. In fact, in 2011 world farmed fish production overtook beef production for the first time—66 million tons of fish compared to 63 million tons of beef—according to a study conducted by the Earth Policy Institute. And while farmed fish also requires grain (usually soybeans) for fish meal, per pound of meat produced it is the lowest of all meats—2 pounds of grain per pound of fish (compared to beef at 7 pounds, pork at 3.5 pounds, and poultry at 2.5 pounds). Naturally, not all that glitters is gold with fish. Farmed salmon and shrimp require fish meal and fish oil for feed, further depleting already strained anchovy and sardine fisheries.\(^5^7\) Likewise, there is an enormous carbon footprint to the industry, especially with the seafood industry in the United States, which imports the vast majority of its supply from abroad. Ninety percent of all seafood sold in the States is imported, coming an average distance of 5,475 miles; and more specifically for shrimp—the most
popular American seafood—despite abundance in US waters, we import 94 percent of all shrimp consumed from an average of 8,000 miles away. Worse, the United States conducts very limited inspections on these imports, equaling less than 2 percent of all imported seafood. Studies show that imported seafood often is infected with high rates of bacterial contamination, especially coming in from Vietnam (58 percent), Ecuador (61 percent), Indonesia (69 percent), India (74 percent), and Bangladesh (83 percent).\(^{58}\)

For much of the world (except in Jewish and Muslim cultures), pork is the meat of choice and a sound alternative to beef, especially with its high grain-to-meat ratio. But in the agri-industrial world of US pork production, millions of hogs—90 percent of American sows—are raised in confined animal feeding operations (CAFOs) and mechanical sow birthing operations that Jim Hightower has called “industrial hell.” He explained,

> Throughout pregnancy, sows are immobilized, jammed into row after row of two-foot-wide “gestation crates.” Unable even to turn around, they basically lose their minds, forlornly chewing on the bars of their cages or dejectedly waving their heads back and forth. For giving birth, they’re briefly moved into slightly larger furrowing crates (although they are still unable to turn around). They are quickly deprived of their piglets, reimpregnated, and returned to the brutality of the gestation crates.

But as he further pointed out, the Good Food Uprising’s grassroots efforts have made impressive inroads to halt such conditions. Joining with animal rights groups like the Humane Society, they successfully pressured such food giants as Whole Foods, Burger King, McDonald’s, Oscar Meyer, Costco, and even Walmart to reject all CAFO pork.\(^{59}\)

Similarly horrible conditions exist in the industrial poultry world. Revelations of hundreds of millions of hens being raised in windlowless “battery cages” (five laying hens packed tightly together per cage) where they can hardly move or spread their wings, where they are denied access to the outdoors and sunlight and given supplements to grow their breasts so heavy they cannot even lift them—such revelations caused animal rights groups, especially Compassion for World Farming, and the various coalitions of the Good Food Uprising to protest against industrial chicken corporations. With demand astronomically high (i.e. Americans annually consume seventy-seven billion chicken eggs and about ninety-two chickens per person; in the world, fifty-five million chickens are consumed daily), and with continued pressure for change, some poultry corporations are moving toward cage-free hens. Perdue Farms, the fourth largest poultry producer in the United States, for example,
announced in July 2017 that it was moving toward more humane practices, including making sure hens got sunlight and space to run and flap their wings, which actually led to reductions in production costs and attracted Perdue to a wider market of supermarket chains, restaurants, and families demanding better chicken. California voters passed a cage-free chicken initiative back in 2008, which helped convince Burger King, McDonald’s, IHOP, Kroger, Costco, Meijer, and Trader Joe’s to switch to using or selling cage-free eggs only. And as Hightower has reported, even Walmart—“the biggest prize in all eggdom … America’s biggest egg buyer, announced its transition to a 100 percent cage-free egg supply by 2025.” With these kinds of changes in pork and poultry sparked by consumer interest groups, protesters, and families voting at their favorite supermarkets and restaurants, indeed a strong argument can be made that Americans’ agricultural ignorance is waning fast, and these areas could be ripe for studies in agricultural history for years to come.

However, as we consumers consume, we continue to waste agricultural products at incredible rates. A 2016 report by The Guardian’s environmental correspondent Suzanne Goldenberg indicated that Americans throw away almost half as much food as they eat (40 to 50 percent of all agricultural produce), mainly due to a “cult of perfection … unrealistic and unyielding cosmetic standards.” Much of this produce grown in the United States is left in the fields or orchards to rot, fed to livestock, or hauled to landfills, “high-value and nutritious food … being sacrificed to retailers’ demand for unattainable perfection.” Often harvesters will just abandon the slightly blemished fruits and vegetables right in the field to save the expense of labor, or the produce is left to rot in warehouses, even though minor blemishes have no effect on quality or freshness. On the global level, the waste rates are equally alarming, especially in a world with so many areas suffering famine and starvation. Goldenberg reports that about one third of all food production in the world is wasted, equaling about 1.6 billion tons of produce a year with a value of nearly $1 trillion. There is growing awareness of the problem, however, as organizations like the United Nations, the Natural Resources Defense Council, and even the Obama administration in the early 2010s pledged efforts to halve this rate of waste and food destruction.

On the global level, agricultural dumping should be of equal concern to food scholars, agricultural policy makers, and to us agricultural historians. Dumping, the official term of the General Agreement on Tariffs and Trade (GATT), occurs when agricultural trading corporations dump commodities onto the export market—especially bound for countries in the Global South.
in need of food—not so much out of generosity and good will to hungry nations, but due to prices for those crops being below the cost of production. According to an important study conducted by the Institute for Agriculture and Trade Policy in 2015, for example, producers exported wheat at 32 percent less than the cost of production, corn at 12 percent less, soybeans at 10 percent less, and rice at 2 percent less. But this dumping of commodities harms local farmers in the receiving countries by unfair competition—selling grains for below the price they can produce it themselves. It has led to economic instability in nations dependent on agricultural trade (for local consumption or export), and thus has caused significant tension in international trade. Dumping also hurts US farmers and producers by selling commodities at below production costs. Much of the cause for this dilemma is the US policy of encouraging overproduction, including the 1996 Farm Bill during the Bill Clinton administration that urged farmers “to feed a hungry world” often with government subsidies, using exports as an escape valve for falling grain prices. But for receiving countries the practice is disastrous, as illustrated with the case of dumped rice on Haiti in the 2010s, especially after the devastating earthquake of 2010 there that destroyed so much of the country’s agriculture and infrastructure. Dumping ended up destroying rural livelihoods for thousands of Haitian farmers, while much of the dumped commodities never reached the people in need.62

A few years ago, Agricultural History Society President Anne Efland in her published presidential address visited the problem of agricultural dumping, using the example of cotton in West Africa, and listing it as one of the “wicked problems” she perceived in agriculture. She cited how the international organization Oxfam’s campaign to end subsidized cotton dumping in that region was premised on the fact that massive cotton imports from the United States cut into “the vital importance of cash from small-scale cotton production to meet the needs for poor farm families for education, medical care, and investment in food production.”63 Since then (2009), dumping has increased, and even more so under NAFTA and especially with the Farm Bill’s price supports of subsidized corn for US farmers. For Mexico, it led to millions of farmers abandoning their farms, moving to urban areas in search of work, converting their farms to grow marijuana or poppies for the drug cartels, or immigrating—legally or not—to the United States.64 As a study in Public Citizen reported, “Such dumping spells disaster for farmers and small-scale producers who cannot compete with the unrealistically low prices created by government bailouts in the wealthy Global North.” Worse, much of the
commodities dumped on the international market are known as “irradiated foods”—produce or grains that have been zapped with X-rays to extend shelf-life for surplus storage and may not meet national or international standards for imported food. Begun during the Dwight Eisenhower administration’s “Atoms for Peace Program” in 1953, irradiated food was meant to be a friendly result of the nuclear era and another way to feed a starving world. Yet it comes with health hazards and economic and trade policies against which developing nations in the Global South cannot compete.\textsuperscript{65}

But much of this agricultural production may soon be moot due to another important problem in US agriculture about which we absolutely must be aware: Colony Collapse Disorder (CCD), the industry name for the hazardous decline in numbers of pollinating bees. The honeybee decline in the United States has been steady since the end of World War II when the chemical industry developed toxic pesticides and in the years since due to massive field conversion to industrial agriculture. The number of bee hives dropped from 6 million in 1947 to 4.5 million in 1980 and to 2.4 million by 2008. In 2014 US beekeepers lost an astounding 40 percent of their pollinating bee population, with much of the loss attributed to Dow Agroscience’s neurotoxic pesticide sulfoxaflor. That decline represents a loss of about one-third of all the honeybees in the last few years and represents a significant agricultural problem since honeybees pollinate over one hundred different crops (fruits, vegetables, nuts, and field crops), representing about one third of all the food Americans eat. It has also indicated a significant drop in the production of honey. In terms of economics, if this decline continues, the United States could lose up to $15 billion in agricultural production, let alone the reduction in food and nutrition diversity.\textsuperscript{66}

However, as I have indicated elsewhere in this article, there is good news to report on the CCD front, and much of it is the result of activism from different environmental and legal organizations, and from members of the Good Food Uprising. While the Environmental Protection Agency (EPA) in the Obama administration had approved Dow’s sulfoxaflor in 2013, two years later a federal appeals court in California reversed the EPA approval, and handed a strong rebuke to the agency. The case, argued strongly by Earth-Justice, ended with a decision that ruled pesticides must be judged by their impact on bees and on the health of hives.\textsuperscript{67} Meanwhile, the US Department of Agriculture (USDA) has become actively involved in efforts to stem the tide of CCD. The agency has invested $20 million for a five-year study of the causes of CCD and another $8 million for farmer incentives to establish more
hives on their lands. Currently, five states in the Northern Plains and Great Lakes regions (North and South Dakota, Minnesota, Wisconsin, and Michigan) are home to more than half of all the commercial honeybee population, and with plans in gear to increase the number of hives in those states.68

Well, if the program fails and we continue to run short on food, to the rescue is technical entrepreneur Jinsoo An, who has developed something called Gastronomic Virtual Reality (GVR), which is a simulated dining experience, or rather, a food future without actual food. Instead, nutrients would come from low-calorie substances like agar, konjac jelly, and gum arabic, that An calls “Project Nourished.” The idea is to enjoy the pleasures of food without the calories. He promises that GVR would create a complete sensory experience with virtual reality headsets, aromatic diffusers, 3-D printed food, virtual cocktail glasses, and cutlery with sensors that will fool our brains into thinking we are eating steak, lasagna, pie, and many other real foods.69

While GVR is hardly the answer to any problems in agriculture or food culture, it can give us pause to consider the value of technology in this digital world and what it can mean for the consumption of food and commodities. For those of us in agricultural history, however, it is once again the USDA that is also in this digital technology forefront, especially with its Economic Research Service (ERS) and the work it has done to create a variety of extremely useful digital atlases. I encourage all readers here, especially those who will find this useful for classroom instruction—and I hope that is many of you!—to visit the ERS’s Atlas website (https://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas.aspx) for such important tools as the food access atlas, the food desert atlas, the food security atlas, the food and health atlas, and others that show food distribution and other agricultural, rural, and food lifeways data across the United States.

These USDA resources will continue to diminish the Age of Agricultural Ignorance. We as agricultural historians can continue doing our part, as well. With better understandings of how commodities connect to our daily lives, how they have had and continue to have important transnational connections to remind us of the globalized world of agriculture and food within which we live, and for us to keep up on current agricultural issues are ways all of us, I believe, can reach out to students, scholars, and the general public to show that we care about the importance of agricultural education. And the trends that I have identified here, along with some significant concerns that will be the topics for agricultural history conferences and studies for years to come, will identify us as a body of scholars eager to accept the challenge of keeping
agriculture and its history relevant into the middle of the twenty-first century and beyond.

NOTES


12. Ibid.


16. For more insights on these philosophers and their ideas of agriculture, labor, and state


18. An important inroad into the connections between environmental history and agricultural history occurred at the 2006 Western History Association conference in St. Louis, Missouri, with the insightful roundtable titled “Working Fertile Ground: Environmental and Agricultural History in the New Millennium.” Panelists included Donald Worster, Donald Pisani, Claire Strom, Deborah Fitzgerald, Mark Fiege, and Douglas Helms. For more on these connections, see Gregg, “Cultivating an Agro-Environmental History;” Worster, “Beyond the Agrarian Myth;” and Evans, “Agricultural Production and Environmental History.”


22. Michael van der Linden, “Globalization’s Agricultural Roots: Some Final Considerations,” in *Embedding Agricultural Commodities*, 146–89. See also Horacio Crespo, “Trade Regimes and the International Sugar Market, 1850–1980: Protectionism, Subsidies, and Regulation,” in *From Silver to Cocaine*, 147–74. The history of the development of the sugar industry in Colombia is yet to be told but is also in a great way very transnational in scope. Started in the 1880s by James Eder, a Prussian entrepreneur and immigrant to Colombia’s Cauca Valley (where he correctly believed sugar cane would flourish), the development of cane production and sugar mills was dependent on overseas innovations and markets. I am in the beginning stages of studying this transnational story and presented on it at the 2018 Agricultural History Society conference. See Sterling Evans, “Colombian Cane: The Sugar Industry in the Valle del Cauca, Colombia, and Its Transnational Connections” (forthcoming).


25. Andrew Zimmerman, *Alabama in Africa: Booker T. Washington, the German Empire, and...*


37. For further details, see Sievert, *The Story of Abaca*. Economic and employment figures are from Philippine Secretary of Agriculture Arthur Yap in “Foreword” to Sievert, *The Story of Abaca*, xi.


59. Ibid., 2–3.
62. Murphy and Hansen-Kuhn, “Counting the Costs of Agricultural Dumping.” I thank Mike Little for drawing my attention to the issue of global agricultural dumping.