

The Root of Empire: Botany, British Imperialism, and
Early American Encounters with Ginseng, 1738-1784

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History

I carried home this treasure with as much joy as if every root had been a graft of the Tree of Life.

— William Byrd, *The Westover Manuscripts*.

So get a stock [of ginseng] by thee as soon as thee can, & be sure to Conceal thy intention from everyone.

— Peter Collinson, *The Correspondence of John Bartram*.

Deep in a thicket along the banks of the Susquehanna river, there lay a small, flowering plant with a bulbous root. Only reaching a height of about six inches and with tiny flowers, it was not a particularly stunning plant. The untrained observer might easily mistake this for one of the many common plants that make up the undergrowth of the forests of Pennsylvania, but John Bartram knew better, and meticulously recorded the coordinates of his location and gathered what he could find. After days of searching, he had only four specimens of the plant, but it was enough to confirm to him what he suspected: that ginseng could be found growing in Pennsylvania. Bartram was fond of his trips into the American wilderness to find new plant specimens, but this was not a trip he embarked upon on his own volition. The year was 1738, and Bartram was scouring the countryside on the orders of the Royal Society in London, Britain's premier scientific society.¹ At the time, Bartram certainly knew that ginseng was an important plant, one that was especially valued in China. But he could hardly have grasped the role that

ginseng would come to play in the interests of imperial Britain, and eventually, the newly independent United States.

To the maritime empires of Europe in the eighteenth century, botanical research was a vitally important and highly lucrative endeavor. The Dutch, Spanish, French and British all sanctioned expeditions that scoured the globe in search of economically important plants. John Bartram is perhaps the best-remembered eighteenth-century American naturalist, but in many ways, he was hardly unique. Botanical research was enabled by a hierarchy of collectors and assistants, a complex network of colonial and metropolitan gardens and scientific contacts, and often direct state support. Historians such as Londa Schiebinger and James McClellan III have understood eighteenth century botanists as “agents of empire,” whose research routes followed the trajectories of long-distance trade and military conquests, and in turn, facilitated those processes.² Botanical science and European expansion, McClellan writes, “reciprocally benefited each and allowed them to march together to transform the world.”³

Arguing that botany and European expansion transformed the world is not an exaggeration. Colonies provided fertile ground for botanical research, and the people that Europeans colonized harbored knowledge of new plant species that would prove to be highly valuable on international markets. Although the story of European imperialism is usually understood as part of an uninterrupted march to global preeminence, at the time botanical science came into its own in the eighteenth century, European empires still occupied a secondary position in the early modern world system.⁴ Their economies were advanced enough to maintain overseas holdings administering wide swaths of the Americas and a smattering of tropical islands, but European capitalists could still not hope to compete with the high living standards and the high quality goods churned out by advanced manufacturing economies in India and

China. Botany and colonial expansion would rewrite the global economic order, as European empires converted the range of ecological and climatic differences within their colonies into a geopolitical and economic advantage.

For colonial officials and sometimes even for the botanists themselves, the economic potential that the discovery of new plants held was obvious. The very earliest European expeditions to the Americas brought back food crops that revolutionized agriculture in their home countries; finding new ways to feed people cheaply and with less land continued to preoccupy botanical research into the eighteenth century.⁵ Dyes and ornamental plants from the colonies became highly sought after in the gardens of elites. American tree species were viewed by some European states as the answer to the ongoing crises of deforestation and fuel shortages they faced in the eighteenth century.⁶ In addition to discovering new plants, botanists aided European imperial interests by finding domestic substitutes for costly imports and producing useful knowledge about acclimating foreign plant species to grow within the borders of European empires. Knowledge about the lucrative cash crops that formed the basis for Atlantic plantation economies—sugar, indigo, tobacco, and cotton—was informed in part by the research of botanists and plant scientists who experimented with how best to grow those plants.⁷ Even Carl Linnaeus, remembered as the “father of taxonomic research,” understood taxonomy to be secondary to his economic schemes premised on figuring out how to cultivate valuable plants in his gardens in Sweden.⁸

But finding new medicines—a project that historians have dubbed “bioprospecting”—was perhaps the most lucrative thing that botanists could offer their imperial contacts.⁹ Cinchona bark, communicated to the empires of Europe through Jesuit priests in the Andes, produced quinine that proved to be highly useful in fighting malaria. Cinchona became Spanish empire’s

most valuable commodity by weight exported from the Americas, and in turn, facilitated European colonization through treating the region's most deadly natural obstacle.¹⁰ Like Cinchona, ginseng was purported to have far-reaching medicinal benefits and became highly sought after in European pharmacopeias.¹¹ Ginseng's medicinal benefits are less straightforward than those of Cinchona bark, but its economic value in the eighteenth century was no less significant.¹²

This paper argues that early American bioprospecting for ginseng helped reshape the relationship between British-American traders and China, revealing how scientific knowledge worked to turn latent ecological resources into a basis for imperial power. In turn, examining the case of ginseng demonstrates the extent to which botanical science in colonial America was motivated by the interests of British imperialism and the economic context of Britain's disadvantage in trade with China. Unlike other medicines that were widely used by Europeans, ginseng was primarily valuable as an export good in the China trade. Ginseng had long been used medicinally in that country, showing up in Chinese medicinal texts dating back as far as 2600 BCE.¹³ Chinese traders were famously disinterested in British consumer goods, meaning that the British had to expend valuable silver bullion in their trade with China, a problem that only grew more acute as British imports of tea ramped up dramatically in the first half of the eighteenth century. Botany was the solution to this dilemma. Between 1770 and 1800, the British resolved this situation by capturing the Indian opium trade and gaining a monopoly to sell the drug on Chinese markets, culminating violently in the Opium Wars that followed from 1839 to 1860.¹⁴ Decades before opium, there was the ginseng trade, when the British used the botanical wealth contained within their American colonies to begin to chip away at the centuries-old Chinese advantage in trade.

Additionally, the story of ginseng sheds light on the relationship between botany and empire in two novel ways. Most histories of botanical research in the American colonies have focused on the tropics. This is not surprising, since the plantation economies in the West Indies were the heart of the Atlantic world and were usually the first place that European naturalists encountered American plants. Colonies not only served as a “fertile ground for the procurement and production of plants that would not grow in harsh European climates,” but also for plants that were native to similar latitudes half a world away in East Asia.¹⁵ The story of Bartram’s encounter with ginseng, which was primarily found in the shady, temperate forests of the Appalachians and Canada, reveals how Britain’s northern American colonies could contribute to producing valuable botanicals for the empire.

Second, unlike most other economically valuable plants from the colonies, ginseng proved almost impossible to cultivate on any significant scale throughout the eighteenth century. Colonists could only trade as much ginseng as they could dig up, meaning that the economic fortunes ginseng offered became intimately tied to the peculiarities of the plant’s growing cycle and habitat preferences. Combined with the plant’s relative rarity, ginseng became acutely vulnerable to overharvesting, making it into an early instance when colonists and traders had to reckon with the impacts that human activity could have on the environment.

Ginseng plants belong to the *Panax* genus, which is dispersed between North America and East Asia. He did not realize at the time, but the ginseng Bartram encountered in Pennsylvania, *Panax quinquefolius*, was a distinct species from the ginseng native to Asia, *Panax ginseng*.¹⁶ The idea that plants native to Asia might also exist in North America was a driving motivation behind a lot of eighteenth-century botanical research, and while that idea held

true for some genera, botanists often erroneously assumed that the plants they encountered in the field were the exact same as the Eurasian species they were familiar with.¹⁷

Owing to this fact, the story of Euro-American encounters with ginseng begins in Asia. Samples of ginseng first reached Europe through the East India Company's China trade in the 1660s, and from there a mythos began to develop around the plant's purported medicinal uses, its ancient history, and the high esteem with which Chinese doctors held it.¹⁸ Before long, British physicians and botanists were struck by how valuable the plant was. Dr. Andrew Clench, a member of the Royal Society, conducted experiments on ginseng in 1679, revealing its use as a "stomatic" and its "virtue in restoring consumptive persons."¹⁹ Clench also remarked that he believed it to be "worth twice its weight in silver," a thought that was probably more responsible for driving the frenzy around ginseng than any purported medicinal properties and would be repeated incessantly by botanists in the coming years. Some of the properties attributed to it were clearly known to be superstition: a letter from a Dr. William Simpson disregarded its reputation as a "renewer of youth," but thought it effective at treating coughs and consumption, as if it was "a medicine sent from heaven to save the lives of thousands."²⁰ Treatises like this about ginseng's medicinal properties continue to appear through the eighteenth century.

Most of what European empires learned about ginseng, however, came from Jesuit missionaries who encountered the plant while working in China. With the Qing state's restrictions on trade, foreigners from European countries were often unable to visit anywhere in China outside of the ports in Canton, but the state granted missionaries an exception to this rule.²¹ Perhaps the most remarkable account of ginseng comes from Pierre Jartoux, a French Jesuit working in Beijing whose translated account of the plant appears in the Royal Society's *Philosophical Transactions* journal in 1713. The list of properties Jartoux says Chinese

physicians attributed to ginseng was endless: it was capable of remedying any of the “five Fatigues of Body or Mind,” it “cures weaknesses of the Lungs and the Pleurisy,” it “stops vomiting,” it could “increase Lymph in the Blood,” and as Europeans were fond of repeating, it “prolongs life in old age.”²² Jartoux also included a detailed description of the plant’s native habitat which, he stressed, was not actually China but a thousand miles away in the mountains of Tartary.²³ The Chinese had tried to grow the plant, but to Jartoux’s knowledge had never produced a single plant. Instead, they were forced to gather it. Digging for ginseng was intensive process, and the Chinese emperor himself enlisted ten thousand Tartars, some of whom Jartoux met with, to “gather all that they could” of ginseng.²⁴

Jartoux’s most important insight, which excited botanists across Europe, was his suggestion that the plant might be growing outside of Asia. In particular, he singled out Canada, “where the forests and mountains... very much resemble those here.”²⁵ His assessment would prove prescient, as just three years later in 1716, a fellow French Jesuit named Joseph-Francois Lafitau found the plant growing south of Montreal in New France. Lafitau had read Jartoux’s account in the *Philosophical Transactions* and endeavored to search for it himself. Lafitau’s discovery of ginseng set off a frenzy to dig up the root and ship it to China. Like other botanists, Lafitau thought that “plants are more or less the same everywhere,” and concluded that the plant would be valuable in trade because the ginseng growing in Canada was virtually identical to the Tartarian ginseng.²⁶ Before long, France’s East India Company was exporting thousands of pounds of ginseng from their North American colonies, reportedly selling it for thirty times as much as it cost them to procure it.²⁷ Already in the early eighteenth century, gathering ginseng was an exorbitantly valuable business.

In addition to botanical research, exporting ginseng required mobilizing labor and knowledge in the Americas. Like most other botanic “discoveries” in the New World, *panax quinquefolius* was already known and used by Indigenous groups in the Americas. Lafitau himself did not work alone but received help from an Iroquois woman who shared her knowledge of the root’s medicinal properties.²⁸ Although it was not as renowned by the Iroquois as it was by China or the European countries, they were familiar with the plant and understood it as an important medicinal botanical. According to Pehr Kalm, a Swedish botanist who studied under Linnaeus and traveled to North America in the 1740s and 50s, the Iroquois called the root “Garangtonging,” owing to the roots anthropomorphic appearance which “signifies a child.”²⁹ The Iroquois, Kalm describes, picked most of the roots that the French exported, “travelling about the country in order to collect as much as they could and to sell it to the merchants at Montreal.”³⁰ Indigenous gatherers would continue to play an important role in gathering ginseng, although colonial dispossession meant that the profits of the trade flowed to French settlers and traders rather than the diggers of the root.

Unwilling to be outdone by the French, the British commissioned their own expeditions to search for the plant. John Bartram’s discovery of it eventually led to a profitable British-American export trade in the root, but he was not the first to find it in the American colonies. Five years before Bartram, the Virginia naturalist and politician William Byrd described a curious encounter with the plant. While he was surveying the border between North Carolina and Virginia, he apparently came across ginseng, adding a description of it that almost exactly mirrored Jartoux’s account in the *Philosophical Transactions* to boot:

... as a help to bear fatigue I used to chew a root of ginseng as I walked along. This kept up my spirits, and made me trip away as nimbly in my half jack-boots as younger men

could do in their shoes. This plant is in high esteem in China, where it sells for its weight in silver.... Indeed it is a vegetable of so many virtues, that Providence has planted it very thin in every country that has the happiness to produce it. Nor indeed is mankind worthy of so great a blessing, since health and long life are commonly abused to ill purposes.³¹

Byrd's casual mentions of the plant—he later described drinking some tea made from it—make it seem as if he was unaware of the magnitude of this discovery.³² At the very least, he surprised himself by finding it since he did not realize that ginseng could be found growing so far south. He continued to search the hillsides over the next few days but could not find “one single plant of it,” until he came across a town that reportedly grew “twenty plants of ginseng, with the scarlet berries growing on the top of the middle stalk.” He washed and dried his roots carefully to prepare them for sale, undoubtedly thinking of the profits the plants could generate if sold to China. But further expeditions to search for ginseng in Virginia left Byrd returning rootless. The British would have to wait for a few more years—and for a better naturalist—before building their own export economy that could compete with the French.

Byrd had sent news of the discovery back to London, where Peter Collinson, the English cloth merchant and botanist, would take notice. Collinson asked Byrd to find another specimen, but Byrd's discovery of ginseng would prove to be a one-off discovery.³³ Undeterred, Collinson would turn over the mantle of exploration to his friend and fellow Quaker from Pennsylvania, John Bartram.³⁴ By this point in his life, Bartram had developed a reputation as one of Britain's preeminent colonial naturalists, leading Collinson and the Royal Society to commission his search for the plant in 1738. Evidently, Bartram's contacts in the Royal Society were looking to find a stable source of the root in their British colonies. And, after travelling more than a thousand miles in five weeks, Bartram eventually came across a few specimens of the root

growing along the Susquehanna.³⁵ He was familiar with the description of the plants sent back from China and recognized that this plant “exactly resembles in form the Chinese ginseng.”³⁶ Like Byrd, Bartram could only turn up a handful of roots. Unlike Byrd, however, Bartram recorded a detailed account of where the root could be found along the banks of the Susquehanna, and his finding would prove repeatable by the waves of root-diggers—comprising both botanists and lowly fortune seekers—who would come after him. That was enough for Bartram’s discovery to set in motion a two hundred year-long British and American fascination with ginseng.

While physicians thought that a domestic source of ginseng could revolutionize the country’s pharmacopeia, most of Britain’s scientific community were preoccupied with exporting it. Having read earlier accounts of the plant’s value in China, Collinson assumed that ginseng offered a ticket to riches, both for himself and for the British nation. Beginning a trade in ginseng took logistical planning and economic contacts, and Collinson, who was both a naturalist and a merchant, thought himself the perfect candidate for the job. Immediately after receiving word from Bartram, he was hatching a scheme to begin trading ginseng to China:

But the principal Reason of my [writing] now is to Desire thee to procure what plants thee canst of Genseng & plant I thy Garden & Raise what thee Canst from seed. I am well assured it will prove a very profitable commodity in China, who Value it above any thing. I have Compared yours with the Chinese and find them in all Respects the same. Your proprietor was so kind to send Mee a Considerable [parcel] & I have Trusted a [particular] Friend with it to Carry to China, to see how they approve of it and to find what price it bears — but my friend is under promise not to Discover that it is American for if they know that, they are so fancifull it may not be as good as their own —

It would be a few decades before botanists developed a distinction between the two species of *panax*, but Collinson was already cognizant of the risks that flooding Chinese markets with American ginseng posed. Still, Collinson was optimistic. “If they sell well,” he suggested to Bartram, then perhaps “a good profitable trade may be carried on.”³⁷ Any concerns about the American source of their ginseng would have to wait. For now, it was time to turn a profit.

Like most other lucrative natural resources, valuable plants were a crucial matter of imperial concern that the British tried to keep close to the chest, lest word get out about their newfound source of wealth. Eighteenth-century Britain was hardly unique in this regard; if anything, their policies were less draconian than their neighbors. The Spanish Empire went to great lengths to keep their Cinchona bark out of the hands of foreigners, even executing an Andean native who tried to smuggle some seeds of it to the British.³⁸ Tensions did not run quite so high around ginseng. Even so, Collinson was already thinking like a Machiavellian when he instructed Bartram to send him some more ginseng in the summer of 1738, urging Bartram to keep his discovery a secret before Collinson’s friend could return from China. In the meantime, Collinson instructed Bartram to send him two roots for his garden.³⁹

Keeping the discovery a secret proved difficult. Ginseng was only valuable insofar as it could be found and dug up. Building an economy around any plant requiring so much labor was bound to attract attention before long. News spread quickly among Bartram’s friends in Pennsylvania’s scientific community, especially among Quakers like John Fothergill, who immediately informed a botanist in Edinburgh named Charles Alston.⁴⁰ And the American public were certainly interested in Bartram’s findings, learning of it through a column in Benjamin Franklin’s newspaper, *The Pennsylvania Gazette*:

We have the Pleasure of acquainting the World, that the famous Chinese or Tartarian Plant, called Gin seng, is now discovered in this Province near Sasquehannah: From whence several whole Plants with a Quantity of the Root, have been lately sent to Town, and it appears to agree most exactly with the Description given of it in Chambers's Dictionary, and Pere du Halde's Account of China. The Virtues [ascribed] to this Plant are wonderful.⁴¹

Exactly when these accounts led to a scramble for ginseng is difficult to determine. But by the 1770s, American traders were carrying out a profitable trade in ginseng, one that would only grow increasingly important throughout the last decades of the eighteenth century.⁴² For now, in the years immediately following Bartram's discovery, samples of ginseng would percolate through the scientific classes in Britain and the colonies. Of Bartram's original four samples from along the Susquehanna, he sent two samples back to London, one of which went to Collinson. He kept one more plant for his garden and sent the last to a colleague in France.⁴³ Further expeditions yielded more discoveries of ginseng: Bartram describes finding some growing in the hills of New Jersey some 50 miles northeast of Philadelphia in 1739, and he found some while travelling up the Delaware River in 1743.⁴⁴

For the British empire, the discovery of ginseng in America could not have come at a more opportune time. The median person in Britain in 1750 bought far more consumer goods than they did one century earlier, but the most concerning development—from the perspective of nationalist and mercantilist-minded British elites—was the increasingly voracious appetite for Chinese luxury goods on British markets, which many observers thought portended the moral and financial ruin of the nation.⁴⁵ Chief among these were tea, silk, and Chinese porcelain, which contributed to a steady flow of bullion from British markets to China in the middle of the

eighteenth century.⁴⁶ One historian writing in 1760 concluded that the entire East Indies trade was “pernicious” and risked “draining all of Europe of the silver which America brings to it.”⁴⁷ Despite significant advances in the quality of British manufactured goods during these years, British merchants were never successful in selling their metalworking, textiles, or ceramics on Chinese markets. China, according to one British customs officer, had the best goods in the world and need not buy “a penny’s worth elsewhere,” making it impossible for the British to trade with them without running a deficit.⁴⁸ The Chinese had everything they needed except, of course, access to overseas colonies. That was the wedge that British traders used to begin to make up their trade deficit in the eighteenth century, and botanical research was critical to realizing the natural wealth stored within the sprawling lands under imperial control.

Members of London’s Royal Society and their scientific contacts in the Americas formed a vanguard class who used research that they garnered on the diverse environments of the British empire to reshape the global economic order. Bioprospecting for ginseng was a small part of this process, but it exemplified the contribution that botany made to imperial interests. No botanist was more aware of this dynamic than John Ellis, who spent years perfecting the best methods to ship seeds and plants between the Americas and China.⁴⁹ Ellis despised Chinese merchants, finding them “crafty” and prone to cheating European traders, but he nonetheless thought that acquiring the “most valuable plants of that vast empire” held the secret to bridging the gap between China and Britain.⁵⁰ Emerging research about climate also played an important role. The American colonies, Ellis thought, were suitable to growing “in open air” the most valuable plants of China. In fact, they might thrive “much better at the same latitude in North America” owing to the “heat of the American summers.”⁵¹ Benjamin Franklin shared this view, and in 1772 mentioned to Fothergill that his rhubarb seeds were “thriving well in our country” because “the

Climate is the same with that of the Chinese wall.”⁵² North America, with its chilly winters that resembled the mountains of Tartary more than the mild winters of the British Isles, might be best suited to cultivating plants valuable to the China trade.

Eighteenth-century botanists frequently assumed that every plant could be mass cultivated under the right conditions, and ginseng was no exception.⁵³ Gathering had already been fueling significant export of American ginseng to China, but beginning in the 1740s, the botanists of the Royal Society began to shift their attention towards attempts to cultivate ginseng in their English gardens. Yet cultivating ginseng was no easy task. The proper conditions for its growth were rare even in the wild and modeling its natural habitat in cultivation proved to be a challenge for even experienced British gardeners. *P. quinquefolius* grows best in the shade of mature forests of hardwood trees like sugar maples (*Acer saccharum*), basswoods (*Tilia americana*) or oaks (*Quercus spp.*), environments that are difficult to replicate in gardens.⁵⁴ The plant is equally picky about soil, requiring “well-developed forest soils, typically mesic loamy soil” and having little tolerance for high moisture levels.⁵⁵ It prefers acidic soils with a pH of around 5.5, which is unusually low for most environments.⁵⁶ To further complicate matters, *p. quinquefolius* only germinates after surviving two winters and took up to 10 years to reach maturity, meaning that one mistake could result in months of lost efforts for gardeners relying on imported seeds from the Americas.⁵⁷ If gardeners failed to meet any of those conditions during the first few years of cultivation, the plant would likely not survive to maturity.

John Bartram was one of many observers who was skeptical of the feasibility of cultivating ginseng. He voiced his concerns to Peter Collinson, and—recognizing the hubris of his colleagues in London’s Royal Society—wondered why they would succeed when generations of experienced Chinese horticulturalists had failed. He accused his British colleagues of valuing

ginseng “more than it deserves,” and admitted that he “esteem[ed] it no more than a common root.”⁵⁸ The main problem, Bartram realized, was that it would not submit to cultivation on any substantial scale, or else the “Chinese who value it so much” would have figured out how to cultivate it.⁵⁹ The experience of English gardeners in the subsequent years would prove Bartram’s skepticism warranted, although eventually there would be some limited successes in growing the plant. In a letter to Bartram in 1740, Peter Collinson described a ginseng plant that he had grown from seed, although it was not yet flowering. But two years later, his ginseng plant was flowering in his London garden, which he described as “perhaps the first place it made its appearance in Europe.”⁶⁰ A decade later, he described his ginseng thriving in his garden in a letter sent to another gardener.⁶¹ His garden became the best place that interested British naturalists could observe a living specimen of ginseng, serving as the basis for numerous illustrations and descriptions of the plant. Collinson’s ginseng plant made its way into Mark Catesby’s *Natural History of Carolina, Florida and the Bahama Islands*, which became the foundation for metropolitan understandings of the flora in colonial America. Collinson continued to update Bartram on his ginseng plant through 1763, just a few years before he died.

By 1768, English gardeners had discovered part of why propagation was so difficult. Philip Miller characterized his problems with the plant in his *Gardener’s Dictionary*, which is the most comprehensive and detailed eighteenth-century treatise on the world of British horticulture. Ginseng, Miller found, grew well in American forests but was nearly impossible to cultivate and propagate properly:

this plant has been introduced to the English gardens from America, and where it has been planted in a shady situation and a light soil, the plants have thriven and produced flowers, and ripened their seeds annually, but not one of these seeds have grown ; for I

have several years sown them soon after they were ripe, without any success ; I have also sown of the seeds which were sent me from America several times in various situations, and have not raised a single plant from either;⁶²

Miller attributed this problem to being sent exclusively male specimens of the plant, rendering his ginseng plants able to grow and flower but unable to reproduce. The Chinese, according to Miller, ran into similar problems and were unable to raise a single plant of it.⁶³

Despite their concerted efforts, even the best horticulturalists in the world could not figure out how to raise ginseng on an economically viable scale. Botanical science was advanced enough to build entire economies around domesticated plants in the eighteenth century but was useless when it came to subjugating one of the American continent's most lucrative plants to the predictable rhythms of cultivation. That meant that the supply of ginseng was vulnerable to crises, both natural and human made. And in the 1750s and 1760s, those crises would arrive. To the British, ginseng may well have been sent from heaven to save the lives of thousands, but they soon learned that no similar divine mandate existed to ensure the uninterrupted flow of silver into their coffers.

The first crisis was of an ecological form. The trade in ginseng was entirely dependent on gathering, and since the plant took nearly ten years to reach maturity, harvesting too much of it could do quick and permanent damage to wild populations of it. Overharvesting was an issue that even the earliest ginseng diggers had to reckon with. Pehr Kalm, in his treatise on the ginseng trade in New France in 1750, explained how ginseng's rarity contributed to its overharvesting. It was sporadically distributed in the forests of Canada, meaning that "one may search the woods for the space of several miles without finding a single plant of it," but when found, it always

grew in “great abundance.”⁶⁴ He recognized that gatherers were already modifying their habits to lessen their burden on natural populations of ginseng, although not entirely successfully:

Many people feared lest by continuing for several successive years to collect these plants without leaving one or two in each place to propagate their species, there would soon be very few of them left, which I think is very likely to happen, for by all accounts they formerly grew in abundance round Montreal, but at present there is not a single plant of it to be found, so effectually have they been rooted out. This obliged the Indians this summer to go far within the English boundaries to collect these roots.⁶⁵

Overharvesting of ginseng, as Kalm alludes to, not only undermined the prospects of those involved in the ginseng trade, but also held the potential to heighten imperial competition between Britain and France. The resulting scramble was so intense that Collinson described it as a “rage,” where all the “mountainous and uncultivated country was ransacked for this valuable root,” leaving North American forests increasingly devoid of ginseng.⁶⁶ The rarer ginseng became, the more expensive it became to gather. The economic fortunes of those involved in the ginseng trade became tied to sustainable stewardship of their reserve of natural wealth. Over the course of the nineteenth century, overharvesting won out over stewardship and eventually drove ginseng to near-extinction in the wild.⁶⁷ Overharvesting and agronomic advances in cultivating the plant would make large-scale ginseng cultivation more feasible, until cultivated plants made up most of the market for ginseng in the twentieth century.⁶⁸

The second crisis was more artificial in form. The trade in ginseng to China was prosperous from the time of its discovery in the Americas until the 1750s, when Chinese traders began to understand American ginseng as being of inferior quality to the Asian variety. At that point, the market was oversaturated with imported *p. quinquefolius*, causing the price of it to

plummet and American traders to come back from Asia empty-handed. The oversaturation crisis is mentioned retrospectively in a few different descriptions of the plant, making it possible to reconstruct the basic contours of the ginseng trade in the 1750s even if the exact moment that *p. quinquefolius*'s value crashed is difficult to determine. By all accounts, however, the ginseng trade got off to a promising start. Miller described how there was initially a "good market" for American ginseng on Chinese markets, and according to Kalm the French trade was equally lucrative at its outset.⁶⁹

But the price of American ginseng soon began plummeting. Kalm relayed an account from an East Indian trader named Osbeck in 1750, who wondered if the ginseng trade was even valuable for Europeans, since "the Chinese do not value the Canada roots so much of those of the Chinese Tartary" meaning that American ginseng would "bear scarce half the price of the latter" on Chinese markets.⁷⁰ The Americans were at first able to export the root by "whole hogsheads full to China," according to Collinson, but soon the market in China was "glutted" with ginseng, which had been concealed as "the true Chinese" variety of the plant. When the Chinese realized what was going on, they stopped buying it and the price "sank to nothing," leaving the Americans as "great losers" who had squandered nearly everything they had invested in selling the root to China.⁷¹ With the bottom having fallen out of the ginseng market, Collinson realized that his plan to secretly sell American ginseng in China had perhaps been too ambitious. "Never certainly was a more [improper] thing done then to Send Such [Quantities] of Ginseng Here," Collinson confided in 1753 to the New York naturalist Cadwallader Colden, adding that the American trade had "so Sunk the Market that there must be Great Losses on it."⁷² Maybe Collinson would have been wise to heed Bartram's warnings from a decade earlier about investing in a trade centered on a plant that was no more than a common root.

Demand for *p. quinquefolius* on Chinese markets would eventually recover, although it would never be as valuable as the native *p. ginseng* in China. The exact reasons for the market glut remain unclear. Perhaps there truly was too much American ginseng on the market, or perhaps it was genuinely less useful in the Chinese pharmacopeia than Asian ginseng. Chinese traders might also have stopped valuing American ginseng so highly when they realized that it was undermining the economic base of their economy by outcompeting their own efforts at gathering the plant from Tartary, just as they made moves to restrict the import of opium in the early years of the trade for that plant.⁷³ Either way, using ginseng to circumvent the long-running advantage Chinese traders held in international trade would not be as easy as the British had initially hoped. But the export market for ginseng would eventually recover towards the end of the eighteenth century, and it proved to be especially lucrative for the newly independent United States. The story of ginseng reached a dramatic climax in 1784 with the voyage of the first independent American cargo vessel to trade with China, the *Empress of China*, to the port at Canton. The *Empress of China* carried just two things, as that was all the Americans could offer the Chinese: silver bullion and more than 260,000 pounds of *p. quinquefolius*.⁷⁴

By the middle of the nineteenth century, the Chinese advantage in international trade had evaporated. British and American capitalists, armed with a seemingly limitless stock of cheap commodities produced in their factories, battered down the walls of the Chinese economy and finally integrated their markets into a European-dominated world system.⁷⁵ One hundred years before that, the British had begun to chip away at those walls using a root that they found in the shady forests of North America. The story of ginseng is but one part of this world-historical transformation, but it serves as an important contrast to narratives of European divergence that are usually dominated by technological change and events unfolding in Europe, not the colonies.

After all, it was precisely through drawing on the food, fuel, and medicine contained in its overseas possessions that Britain was able to avert the ecological crises that ravaged China during this period, a fact that Kenneth Pomeranz points out in his trailblazing study on British divergence.⁷⁶ The colonies not only provided Britain with these basic necessities of life, but something that it could get nowhere else: a commodity that was capable of stemming the outflow of silver currency to China.

Botanists, working in both the metropole and the colonies, used their knowledge and labor to commodify plants and convert them into a basis for national wealth. In doing so, as the cases of Collinson and Byrd attest, they usually hoped to improve their own fortune as well as that of their home countries. Botanists were agents of empire not only because their work happened to advance imperial interests, but also because most of them self-consciously recognized that they could enrich themselves by assisting with their nation's geopolitical and economic objectives. The time Bartram spent rummaging through the undergrowth along the Susquehanna River in 1738 hardly even yielded enough ginseng to bring back with him. But the discovery of ginseng symbolized something far larger, forming a crucial moment in history when an innocuous root could contribute to the remaking of the early modern world system.

Endnotes

¹ John Bartram, Letter from 1738, in *The Correspondence of John Bartram, 1734-1777*, ed. Edmund Berkeley and Dorothy Smith Berkeley (University of Florida Press, 1992), 106-7. This letter is undated and unaddressed but was likely from late 1738 and may have been addressed to Cadwallader Colden, a naturalist from New York.

² Londa Schiebinger, *Plants and Empire: Colonial Bioprospecting in the Atlantic World*, (Harvard University Press Massachusetts: 2004), 11.

³ James McClellan III, "Foreword". In *André Michaux in North America: Journals and Letters, 1785-1797*, ed. Charlie Williams, Elaine M. Norman, and Walter Kingsley Taylor, (University of Alabama Press, 2020), xiv.

⁴ Prasannan Parthasarathi, *Why Europe Grew Rich and Asia Did Not: Global Economic Divergence, 1600-1850*. (Cambridge: Cambridge University Press, 2011), 22. Parthasarathi and other historians associated with world-systems theory, like Andre Gunder Frank, have understood the early modern world system as "polycentric," based mostly around nodes in East and South Asia rather than Europe.

⁵ Perhaps the best example of this is the British naturalist Joseph Banks' attempt to bring breadfruit from Tahiti to British colonies in the West Indies to feed the enslaved people on those islands. George III personally dispatched William Bligh to Tahiti to achieve this goal, where he spent six months procuring the plant before bringing them back to Jamaica and St. Vincent. See Schiebinger, *Plants and Empire*, 236.

⁶ Deforestation pressures were felt most acutely by the French government, who in the 1780s commissioned Andre Michaux to travel to North America, bringing back tree species to grow at the state-owned experimental farm in Rambouillet. See McClellan, *Andre Michaux in North America*.

⁷ McClellan III, "André Michaux in North America," xv.

⁸ Schiebinger, *Plants and Empire*, 7. In the only correspondence between John Bartram and Carl Linnaeus I can find, Linnaeus' request is strictly instrumentalist, asking Bartram to make a comprehensive list of all North American plants and brief information on how to grow them. Carl Linnaeus, Letter to John Bartram, 24 June 1769. Uppsala University Library, Alvin Digital Collections.

⁹ Schiebinger, *Plants and Empire*, 16.

¹⁰ Schiebinger, *Plants and Empire*, 8. Two other important medicinal plants were jalap, a laxative found in Spanish holdings in Mexico; and ipecacuanha, an emetic from South America.

¹¹ Ginseng's Linnean name, *panax*, comes from the Greek for "panacea," a reference to the belief that it could be used for practically any ailment.

¹² A 2013 study found no evidence "supporting its use in the treatment of any particular disease." See Johannah L Shergis, Anthony L Zhang, Wenyu Zhou, and Charlie C Xue, "Panax ginseng in randomised controlled trials: a systematic review," *Phytotherapy Research*. 27:7 (July 2013).

¹³ Maria Assunta Potenza, Monica Montagnani, Luigi Santacroce, Ioannis Alexandros Charitos, Lucrezia Bottalico, "Ancient Herbal Therapy: A Brief History of *Panax ginseng*", *Journal of Ginseng Research*, 2022. The word "ginseng" comes from the Chinese *Hokkien jîn-sim*, roughly translating as "human-root."

¹⁴ Markman Ellis, Richard Coulton, and Matthew Mauger, *Empire of Tea: The Asian Leaf That Conquered the World*. (Chicago: University of Chicago Press, 2015), 214.

¹⁵ Schiebinger, *Plants and Empire*, 6.

¹⁶ Chang discovered that the two species of *panax* diverged some 15 million years ago, with the Asian species spread to America across the Bering Land Bridge. See Shirly Hsuan Chang, "Asian and American Ginseng: A Plant's Migration Around the World," *Smithsonian Folklife*, (November 2019). <https://festival.si.edu/blog/asian-american-ginseng-plant-migration>

¹⁷ William T. Stearn, "Carl Linnaeus's Acquaintance with Tropical Plants," *Taxon* 37, no. 3, (1988), pp. 781.

¹⁸ John H. Appleby, "Ginseng and the Royal Society," *Notes and Records of the Royal Society of London* 37, no. 1 (1983) 37: 122.

¹⁹ Thomas Birch, *History of the Royal Society* (London, 1737), 3, 490. Cited in Appleby, "Ginseng and the Royal Society," 122.

²⁰ Simpson was sure to remind the reader that ginseng—in addition to saving thousands of lives—was worth *three* times its weight in silver.

²¹ Shi Zhihong, "China's overseas trade policy and its historical results: 1522–1840." In *Intra-Asian Trade and the World Market*, ed. A.J.H. Latham and Heita Kawakatsu, (Routledge, London: 2006), 8.

²² Pierre Jartoux, "XXV. The description of a tartarian plant, call'd gin-seng; with an account of its virtues. In a letter from Father Jartoux, to the Procurator General of the Missions of India and China. Taken from the tenth volume of

letters of the Missionary Jesuits, printed in Paris in octavo,” *Philosophical Transactions of the Royal Society of London*, Volume 28, Issue 337 (1713), 238.

²³ Jartoux, “The Description of a Tartarian Plant,” pp. 240. “Tartary” is a loosely defined anachronistic name for Central Asia, Siberia, and Manchuria. *Panax ginseng*’s native range is to southeastern Siberia, the Korean Peninsula, and the northeastern Chinese provinces of Heilongjiang, Jilin, and Liaoning.

²⁴ Jartoux, “The Description of a Tartarian Plant,” 245

²⁵ Jartoux, “The Description of a Tartarian Plant,” 240.

²⁶ Gianamar Giovannetti-Singh, “Galenizing the New World: Joseph-François Lafitau’s ‘Galenization’ of Canadian Ginseng, 1716–1724,” *Notes and Records: The Royal Society Journal of the History of Science* 75 (2021), 60.

²⁷ G.M. Hocking, “A Chronology of Ginseng,” *Quarterly Journal of Crude Drug Research*, 14:4, (1976), 168.

²⁸ Giovannetti-Singh. “Galenizing the New World”, 61. According to Singh, there is no record of the Iroquois woman’s name.

²⁹ Pehr Kalm, *Peter Kalm’s Travels in North America: The English Version of 1770*, ed. Adolph B. Benson, (Dover: 1987), 437. “Man-root” and other allusions to the root’s vaguely anthropomorphic appearance would characterize many of the common names.

³⁰ Pehr Kalm, *Peter Kalm’s Travels*, 438.

³¹ William Byrd, *The Westover Manuscripts: Containing the History of the Dividing Line Betwixt Virginia and North Carolina; A Journey to the Land of Eden, A. D. 1733; and A Progress to the Mines. Written from 1728 to 1736, and Now First Published*, (Petersburg: Edmund and Julian C. Ruffin, 1841). Electronic Edition. I was initially skeptical that the plant described here by Byrd was ginseng, especially since this account was written a few years after the fact. Byrd also thought that ginseng was the same as the “kanna” plant used by European settlers on the Cape of Good Hope, but that plant was *Sceletium tortuosum*. The USDA Plants database, however, lists *p. quinquefolius* as native to the Virginia-North Carolina border, so he might have correctly identified ginseng.

³² Myths abound in early descriptions of ginseng, and Byrd’s writings were more concerned with producing a convincing memoir than a botanically accurate description. Byrd’s description is also curiously like an account relayed to Peter Collinson from a Dr. Witt of Pennsylvania, who reported that Indians could travel “three, four, or five days without food by only keeping a bit of the root in their mouths.” See Dillwyn, *Hortus Collinsonianus*.

³³ William Byrd. Letter to Peter Collinson, 5 July 1737, *The Correspondence of the Three William Byrds of Westover, Virginia, 1684–1776*, (Virginia Historical Society: 1977), 523.

³⁴ Quakers formed an important social network in the world of eighteenth-century botany, and their shared religious ties helped facilitate the spread of knowledge and specimens across the Atlantic.

³⁵ John Bartram, Letter from 1738, in *The Correspondence*, 106.

³⁶ John Bartram, Letter from 1738, in *The Correspondence*, 105.

³⁷ Peter Collinson, Letter to John Bartram, February 24th, 1739, in *The Correspondence*.

³⁸ Schiebinger, *Plants and Empire*, 3.

³⁹ Peter Collinson, Letter to John Bartram, February 24th, 1739, in *The Correspondence*.

⁴⁰ John Fothergill. Letter to Charles Alston, 1738, in *Chain of Friendship: Selected Letters of Dr. John Fothergill of London, 1735–1780*, (Cambridge: Harvard University Press, 2013).

⁴¹ Benjamin Franklin, Article in the *Pennsylvania Gazette*, July 27, 1738, accessed through the *Papers of Benjamin Franklin*, vol. 2, 214

⁴² Hocking, “A Chronology of Ginseng.” In 1770, the earliest date for which we have evidence available, the American colonies exported 74,604 pounds of ginseng to China. Exporting that much ginseng would have required hundreds, if not thousands, of laborers working to dig up the root. So much for Collinson’s desire to keep it a secret!

⁴³ John Bartram, Letter from 1738, in *The Correspondence*.

⁴⁴ John Bartram, Letters to Peter Collinson, November 1739 & September 1743, in *The Correspondence*.

⁴⁵ Maxine Berg, “In Pursuit of Luxury: Global History and British Consumer Goods in the Eighteenth Century.” *Past & Present*, no. 182 (2004): 85–142.

⁴⁶ Ronald C. Po, “Tea, Porcelain, and Silk: Chinese Exports to the West in the Early Modern Period,” in *Oxford Research Encyclopedia of Asian History*. (Oxford University Press: 2018).

⁴⁷ Adam Anderson, *An Historical and Chronological Deduction of the Origin of Commerce, from the Earliest Accounts to the Present Time: Containing an History of the Great Commercial Interests of the British Empire*, 2 vols. (London, 1764). Cited in Berg, “In Pursuit of Luxury,” 96.

⁴⁸ Sir Robert Hart, “*These from the Land of Sinim*”: *Essays on the Chinese Question* (London, 1901), 61. Cited in Paul E. Fontenoy, “Ginseng, Otter Skins, and Sandalwood: The Conundrum of the China Trade,” *The Northern Mariner* VII, No. I (January 1997), 1–16.

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- ⁴⁹ John Ellis, *Directions for bringing over seeds and plants, from the East-Indies and other distant countries*, (London, L. Davis, 1770), Online Edition. Ellis was a close correspondent with Peter Collinson and possibly with John Bartram. This pamphlet contained a list of over fifty plant species native to China that Ellis thought could be grown in the American colonies, including medicinal plants (*Cinchona officinalis* and *Sarsaparilla spp.*), economically important plants (the Varnish trees, used for making lacquer) and consumables like tea. The list, which exclusively used binomial Linnean nomenclature, is an excellent example of how taxonomic systematization was intended to serve imperial interests. See Schiebinger chapter five, “Linguistic Imperialism,” in *Plants and Empire*.
- ⁵⁰ Ellis, “Directions,” 1.
- ⁵¹ Ellis, “Directions,” 2.
- ⁵² Benjamin Franklin, Letter to Fothergill, 1772, in *Chain of Friendship*.
- ⁵³ According to Schiebinger, Linnaeus thought that tropical plants could be grown anywhere and that he he could “fool,” “tempt,” and “train” them to grow in Arctic lands and thereby create “Lapland cinnamon groves, Baltic tea plantations, and Finnish rice paddies.” Schiebinger, *Plants and Empire*, 7.
- ⁵⁴ Minnesota Department of Natural Resources, “*Panax quinquefolius*.” *Rare Species Guide*. <https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=PDARA09010>. Harrison et. al have found that ginseng requires 70 to 90% shade coverage, an average annual temperature of 50 degrees Fahrenheit, and a few weeks of below-freezing temperatures to reach dormancy. See H.C. Harrison et. al, “Ginseng,” University of Wisconsin-Madison Cooperative Extension Service, <http://corn.agronomy.wisc.edu/Crops/Ginseng.aspx>.
- ⁵⁵ Minnesota DNR, “*Panax quinquefolius*.”
- ⁵⁶ Harrison et. al, “Ginseng.”
- ⁵⁷ Minnesota DNR, “*Panax quinquefolius*.”
- ⁵⁸ John Bartram, Letter to Peter Collinson, July 18th, 1739, in *The Correspondence*.
- ⁵⁹ John Bartram, Letter to Peter Collinson, July 18th, 1739, in *The Correspondence*.
- ⁶⁰ Peter Collinson, Letter to John Bartram, July 22nd, 1740 and June 6th, 1742, in *The Correspondence*.
- ⁶¹ Peter Collinson, Letter to Jacob Trew, 1753. *Forget Not Mee & My Garden...: Selected Letters 1725-1768 of Peter Collinson*, (American Philosophical Society, Philadelphia: 2002).
- ⁶² Phillip Miller, “Panax,” in *The Gardener’s Dictionary*, eighth edition, 1768. Biodiversity Heritage Library.
- ⁶³ Phillip Miller, “Panax,” in *The Gardener’s Dictionary*.
- ⁶⁴ Pehr Kalm, *Peter Kalm’s Travels*, 436.
- ⁶⁵ Pehr Kalm, *Peter Kalm’s Travels*, 438.
- ⁶⁶ Peter Collinson, *Hortus Collinsonianus: An account of the plants cultivated by the late Peter Collinson*, ed. Lewis Weston Dillwyn. (Swansea: W. C. Murray and D. Rees: 1843), 37.
- ⁶⁷ Luke Magnet, *Root Diggers and Herb Gatherers: The Rise and Decline of the Botanical Drug Industry in Southern Appalachia*. (University of Georgia, Athens, GA: 2017). Magnet describes how the scarcity of ginseng resulted in a number of early conservation measures, like specified gathering seasons, before leading to modern-day regulations banning its harvesting in many states. Today, most ginseng sold on markets is cultivated, largely in Wisconsin.
- ⁶⁸ Magnet, *Root Diggers*, 236.
- ⁶⁹ Phillip Miller, *Gardener’s Dictionary*; Pehr Kalm, *Peter Kalm’s Travels*, 436.
- ⁷⁰ Pehr Kalm, *Peter Kalm’s Travels*, 438.
- ⁷¹ Peter Collinson, *Hortus Collinsonianus*, 37.
- ⁷² Peter Collinson, Letter Cadwallader Colden, September 1st, 1753, in *Selected Letters*.
- ⁷³ Markman Ellis, Richard Coulton, and Matthew Mauger, *Empire of Tea*, 214.
- ⁷⁴ Hocking, “A Chronology of Ginseng.” *The Empress of China* was a rousing success for American merchants, intensifying the far east trade in subsequent years, which produced much of the initial capital needed for industrialization in the Northeastern United States. At this point, the history of the ginseng trade becomes much better known. See Luke Magnet, *Root Diggers and Herb Gatherers: The Rise and Decline of the Botanical Drug Industry in Southern Appalachia*. (University of Georgia, Athens, GA: 2017).
- ⁷⁵ Exactly when Britain surpassed China economically is a contentious question in the historiography on industrialization, but both Pomeranz (2003) and Parthasarathi (2011) agree that there was unmistakable evidence of divergence by 1850.
- ⁷⁶ Kenneth Pomeranz, *The Great Divergence: China, Europe, and the Making of the Modern World Economy*. (Princeton University Press, 2000), 57.

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